



Carlos Oscar Sorzano Sánchez

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

4 Sexenios de Investigación 1998-2021

Credited as Catedrático de Universidad since 2013

Co-founder of KineStat Pharma

Ranked as 1st of all electrical engineers entering in Málaga in the year 1991-1992
Head of the Bioengineering Laboratory between 2007-2008

IEEE Senior member since 2008

Member of the IEEE Bio Imaging and Signal Processing Technical Committee (2013-2014, 2019-2021)

Promoter of Biomedical Engineering in Univ. San Pablo - CEU in 2011.

Associate editor of IEEE Signal Processing Magazine Life Science Column between 2011-2013

Associate editor of Biomedical Imaging from 2020

Profesor agregado since 2009

Credited as Profesor Titular de Universidad since 2009

Technical director of the INSTRUCT Image Processing Centre since 2010.

Member of the Ethical Committee for Animal Experimentation of the Natl. Centre of Biotechnology since 2011.

Representative at the "Junta de Escuela" of the EPS-Univ. San Pablo between 2009 and 2010.

Coordinator of the Signal and Communication Theory Area between 2004 and 2010.

Secretary of the Department of Electronic and Telecommunication Systems between 2005 and 2008

Co-director of the Official Master in Computational Biology between 2007 and 2009.

Director of the summerschool "Advanced Data Analysis and Modelling" (Escuela Politécnica Superior, Univ. San Pablo CEU) between 2006 and 2009.

Recipient of the Ángel Herrera Research Prize for the academic year 2005/2006.

Member of FELASA Working Group on Experimental Design in Education and Training



General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

4 sexenios de investigación (1997-2021). Research periods

5 supervised thesis

More than 10300 citations

More than 210 papers in Q1 journals

More than 220 papers in JCR journals

H-index=50

Angel Herrera Research Prize 2005

IEEE Senior member since 2008

Credited as Full Professor (Catedrático) in the area of Information and Communication Theory in 2013

Top 2% of Spanish researchers in all domains (<https://www.webometrics.info/en/GoogleScholar/Spain>)

Among the top 100 most influential Spanish computer scientists (<https://research.com/scientists-rankings/computer-science/es>)

**Carlos Oscar Sorzano Sánchez**

Surname(s): **Sorzano Sánchez**
 Name: **Carlos Oscar**
 DNI: **25669302Z**
 ORCID: **0000-0002-9473-283X**
 ScopusID: **35796367700**
 Date of birth: **09/02/1973**
 Gender: **Male**
 Nationality: **Spain**
 Country of birth: **Spain**
 Aut. region/reg. of birth: **Andalusia**
 Contact province: **Madrid**
 City of birth: **Málaga**
 Contact address: **Centro Nac. de Biotecnología (CSIC)**
 Rest of contact address: **c/Darwin, 3**
 Postcode: **28049**
 Contact country: **Spain**
 Contact aut. region/reg.: **Community of Madrid**
 Contact city: **Cantoblanco, Madrid**
 Land line phone: **915854510**
 Fax: **915854506**
 Email: **coss@cnb.csic.es**
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Current professional situation

Employing entity: Consejo Superior de Investigaciones Científicas
Department: Estructura de Macromoléculas, Centro Nacional de Biotecnología
Professional category: Investigador Científico
Start date: 01/04/2022
Type of contract: Civil servant

Previous positions and activities

	Employing entity	Professional category	Start date
1	Consejo Superior de Investigaciones Científicas	Científico Titular	01/03/2017
2	Centro Nacional de Biotecnología	Investigador Ramón y Cajal	01/11/2009
3	Centro Nacional de Biotecnología	Investigador doctor	01/11/2008
4	Universidad San Pablo CEU	Profesor adjunto	01/09/2004
5	Universidad San Pablo CEU	Profesor colaborador	01/09/2001
6	Swiss Federal Institute of Technology Lausanne (EPFL)	Asistente de investigación	01/04/2003
7	Centro Nacional de Biotecnología	Beuario postdoctoral	01/06/2002



	Employing entity	Professional category	Start date
8	Centro Nacional de Biotecnología	Becario predoctoral	01/10/1997

- 1** **Employing entity:** Consejo Superior de Investigaciones Científicas
Professional category: Científico Titular
Start-End date: 01/03/2017 - 01/04/2022
Type of entity: Public Research Body
- 2** **Employing entity:** Centro Nacional de Biotecnología
Professional category: Investigador Ramón y Cajal
Start-End date: 01/11/2009 - 01/03/2017
Type of entity: State agency
- 3** **Employing entity:** Centro Nacional de Biotecnología
Professional category: Investigador doctor
Start-End date: 01/11/2008 - 01/11/2009
Type of entity: State agency
- 4** **Employing entity:** Universidad San Pablo CEU
Professional category: Profesor adjunto
Start-End date: 01/09/2004 - 01/09/2009
Type of entity: University
- 5** **Employing entity:** Universidad San Pablo CEU
Professional category: Profesor colaborador
Start-End date: 01/09/2001 - 01/09/2004
Type of entity: University
- 6** **Employing entity:** Swiss Federal Institute of Technology Lausanne (EPFL)
Professional category: Asistente de investigación
Start-End date: 01/04/2003 - 01/03/2004
Type of entity: University
- 7** **Employing entity:** Centro Nacional de Biotecnología
Professional category: Becario postdoctoral
Start-End date: 01/06/2002 - 01/03/2003
Type of entity: State agency
- 8** **Employing entity:** Centro Nacional de Biotecnología
Professional category: Becario predoctoral
Start-End date: 01/10/1997 - 01/06/2002
Type of entity: State agency



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

- 1 University degree:** Higher degree
Name of qualification: Licenciado en Ciencias Matemáticas Especialidad Estadística e Investigación Operativa
Degree awarding entity: Universidad Nacional de Educación a Distancia **Type of entity:** University
Date of qualification: 01/06/2006
- 2 University degree:** Middle degree
Name of qualification: Ingeniero Técnico en Informática de Sistemas
Degree awarding entity: Universidad de Málaga **Type of entity:** University
Date of qualification: 01/03/2000
- 3 University degree:** Higher degree
Name of qualification: Ingeniero de Telecomunicación
Degree awarding entity: Universidad de Málaga **Type of entity:** University
Date of qualification: 01/10/1997
- 4 University degree:** Higher degree
Name of qualification: Graduado o Graduada en Farmacia
Degree awarding entity: Universidad Complutense de Madrid **Type of entity:** University

Doctorates

- 1 Doctorate programme:** Dr. Farmacia
Degree awarding entity: Universidad San Pablo CEU **Type of entity:** University
Date of degree: 01/01/2015
- 2 Doctorate programme:** Dr. Ingeniería de telecomunicación
Degree awarding entity: Universidad Politécnica de Madrid **Type of entity:** University
Date of degree: 01/06/2002



Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
French	B1	B2	B1	B1	A2
English	C1	C2	C1	C1	C1
Spanish	C2	C2	C2	C2	C2

Teaching experience

General teaching experience

- 1 Name of the course:** Métodos cuantitativos para la Decisión
University degree: Ing. Industriales
Start date: 2018
Entity: Universidad Pontificia Comillas
End date: 2023
Type of entity: University
- 2 Name of the course:** Statistics
University degree: Master in Pharmacological Research
Start date: 01/09/2016
Entity: Universidad Autónoma de Madrid
Faculty, institute or centre: Facultad de Medicina
End date: 2023
Type of entity: University
- 3 Name of the course:** Estadística
University degree: Master en Neurociencia
Start date: 01/09/2015
Entity: Universidad Autónoma de Madrid
Faculty, institute or centre: Facultad de Medicina
End date: 2023
Type of entity: University
- 4 Name of the course:** Tratamiento Digital de Imágenes
University degree: Ing. Biomédica
Start date: 2015
Entity: Universidad San Pablo CEU
End date: 2023
Type of entity: University
- 5 Name of the course:** Métodos cuantitativos para la Decisión
University degree: Ing. Telecomunicación
Start date: 2017
Entity: Universidad Pontificia Comillas
End date: 2019
Type of entity: University
- 6 Name of the course:** Bioinformática
University degree: Ing. Biomédica
Start date: 2016
Entity: Universidad San Pablo CEU
End date: 2017
Type of entity: University
- 7 Name of the course:** Biología de sistemas
University degree: Ing. Biomédica
Start date: 2016
End date: 2017



Entity: Universidad San Pablo CEU

Type of entity: University

8 Name of the course: Ecuaciones diferenciales

University degree: Ing. Biomédica

Start date: 2014

Entity: Universidad San Pablo CEU

End date: 2015

Type of entity: University

9 Name of the course: Álgebra

University degree: Ing. Biomédica

Start date: 2013

Entity: Universidad San Pablo CEU

End date: 2015

Type of entity: University

10 Name of the course: Tratamiento Digital de la Señal

University degree: Ing. Telecomunicación

Start date: 2004

Entity: Universidad San Pablo CEU

End date: 2014

Type of entity: University

11 Name of the course: Lab. Tratamiento Digital de la Señal

University degree: Ing. Telecomunicación

Start date: 2004

Entity: Universidad San Pablo CEU

End date: 2013

Type of entity: University

12 Name of the course: Transmisión de Datos II

University degree: Ing. Telecomunicación

Start date: 2006

Entity: Universidad San Pablo CEU

End date: 2007

Type of entity: University

13 Name of the course: Lab. Señales y Comunicaciones

University degree: Ing. Telecomunicación

Start date: 2003

Entity: Universidad San Pablo CEU

End date: 2006

Type of entity: University

14 Name of the course: Lab. Circuitos Electrónicos Digitales

University degree: Ing. Telecomunicación

Start date: 2003

Entity: Universidad San Pablo CEU

End date: 2004

Type of entity: University

15 Name of the course: Lab. Programación

University degree: Ing. Telecomunicación

Start date: 2003

Entity: Universidad San Pablo CEU

End date: 2004

Type of entity: University

16 Name of the course: Programación

University degree: Ing. Telecomunicación

Start date: 2002

Entity: Universidad San Pablo CEU

End date: 2003

Type of entity: University

17 Name of the course: Sistemas Lineales

University degree: Ing. Telecomunicación

Start date: 2002

End date: 2003

**Entity:** Universidad San Pablo CEU**Type of entity:** University**18 Name of the course:** Estructura y Tecnología de Computadores I**University degree:** Ing. Informática**Start date:** 2001**End date:** 2002**Entity:** Universidad San Pablo CEU**Type of entity:** University

Experience supervising doctoral thesis and/or final year projects

- 1 Project title:** Acceleration of image processing algorithms for single particle analysis by electron microscopy
Entity: Universidad Autónoma de Madrid
Student: David Strelak
Date of reading: 2022
- 2 Project title:** Local Quality assessment of cryo-EM reconstructions and its applications
Entity: Universidad Autónoma de Madrid
Type of entity: University
Student: Jose Luis Vilas Prieto
Obtained qualification: Sobresaliente (propuesta Cum Laude)
Date of reading: 2019
- 3 Project title:** New computational methods toward atomic resolution in single particle cryo-electron microscopy
Entity: Universidad Autónoma de Madrid
Type of entity: University
Student: Vahid Abrishami
Obtained qualification: Sobresaliente (propuesta Cum Laude)
Date of reading: 2016
- 4 Project title:** High resolution three-dimensional reconstruction for small animal PET cameras
Entity: Universidad Autónoma de Madrid
Type of entity: University
Student: Ana Iriarte Ruiz
Obtained qualification: Apto cum laude (5 votos)
Date of reading: 2012
- 5 Project title:** Structural analysis of macromolecular nanomachines by 3D electron microscopy: managing flexibility and heterogeneity in some defined cases
Entity: Universidad Autónoma de Madrid
Type of entity: University
Student: Ana Lucía Álvarez Cabrera
Obtained qualification: Sobresaliente (propuesta Cum Laude)
Date of reading: 2012

Educational or pedagogical publications, books, articles, etc.

- 1 C.O.S. Sorzano. Panorama de investigación en Ing. Biomédica 2020, Ed. Tórculo. 2020.**
Name of the materials: Libro
Date of drafting: 2020
Format: Book
- 2 C.O.S. Sorzano. Panorama de investigación en Ing. Biomédica 2015, Ed. Tórculo. 2015.**
Name of the materials: Libro
Date of drafting: 2015



Format: Book

3 A. Otero; C.O.S. Sorzano; R. García García. Aprenda a programar en C mediante ejemplos, Ed. Tórculo. 2008.

Name of the materials: Libro

Date of drafting: 2008

Format: Book

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

1 **Name of the project:** ERC Synergy: HighResCells: A synergistic approach toward understanding receptor signaling in the cell at very high resolution.

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI...): J.M. Carazo

Funding entity or bodies:

European Union

Type of entity: Public Research Body

Code according to the funding entity: 810057

Start-End date: 03/2019 - 02/2024

2 **Name of the project:** iNext Discovery

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

City of entity: Madrid, Spain

Name principal investigator (PI, Co-PI...): Jose Maria Carazo

Start-End date: 01/02/2020 - 31/01/2024

Total amount: 9.987.744 €

3 **Name of the project:** AIM CryoEM: Procesamiento de imagen avanzado orientado al análisis de partículas individuales en microscopía electrónica en condiciones criogénicas

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

City of entity: Madrid, Spain

Nº of researchers: 2

Start-End date: 01/06/2020 - 31/05/2023

Total amount: 260.000 €

4 **Name of the project:** EOSC-Life: Providing an open collaborative space for digital biology in Europe

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI...): J.M. Carazo

Funding entity or bodies:

European Union

Type of entity: Public Research Body

Code according to the funding entity: 824087



Start-End date: 03/2019 - 02/2022

5 Name of the project: Instruct Ultra: Releasing the full potential of Instruct to expand and consolidate infrastructure services for integrated structural life science research

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): J.M. Carazo

Funding entity or bodies:

European Union

Type of entity: Public Research Body

Code according to the funding entity: 731005

Start-End date: 01/2017 - 01/2021

6 Name of the project: Flex3D: Análisis en alto rendimiento de flexibilidad estructural tanto por criomicroscopía electrónica como por criomicroscopía de rayos X blandos

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): C.O.S. Sorzano; J.M. Carazo

Funding entity or bodies:

Ministerio de Economía y competitividad

Type of entity: Ministerio

Code according to the funding entity: BIO2016-76400-R

Start-End date: 12/2016 - 12/2019

7 Name of the project: Westlife: World-wide E-infrastructure for structural biology

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): J.M. Carazo

Funding entity or bodies:

European Union

Type of entity: Public Research Body

Code according to the funding entity: 675858

Start-End date: 11/2015 - 11/2019

8 Name of the project: Corbel: Coordinated Research Infrastructures Building Enduring Life-science services

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): J.M. Carazo

Funding entity or bodies:

European Union

Type of entity: Public Research Body

Code according to the funding entity: 654248

Start-End date: 09/2015 - 09/2019

9 Name of the project: Inext: Infrastructure for NMR, EM and X-ray crystallography for translational research

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): J.M. Carazo

Funding entity or bodies:

European Union

Type of entity: Public Research Body

Code according to the funding entity: 654142

Start-End date: 09/2015 - 09/2019



- 10** **Name of the project:** EOSCpilot: European Open Science Cloud Pilot
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): C.O.S. Sorzano
Funding entity or bodies: European Union **Type of entity:** Public Research Body
Code according to the funding entity: 739563
Start-End date: 07/2017 - 12/2018
- 11** **Name of the project:** EGI Engage: Engaging the EGI Community towards an Open Science Commons
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): J.M. Carazo
Funding entity or bodies: European Union **Type of entity:** Public Research Body
Code according to the funding entity: 654142
Start-End date: 03/2015 - 08/2017
- 12** **Name of the project:** Procesamiento tridimensional de imagen robusto y automatizado en Biología Estructural
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): C.O.S. Sorzano; J.M. Carazo
Funding entity or bodies: Ministerio de economía y competitividad **Type of entity:** Ministerio
Code according to the funding entity: BIO2013-44647-R
Start-End date: 01/2014 - 01/2017
- 13** **Name of the project:** Transnational access and enhancement of integrated Biological Structure determination at synchrotron X-ray facilities
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): J.M. Carazo
Funding entity or bodies: European Union **Type of entity:** Public Research Body
Code according to the funding entity: 283570
Start-End date: 09/2011 - 09/2015
- 14** **Name of the project:** Four-dimensional transmission electron microscopy of macromolecular assemblies
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): C.O.S. Sorzano
Funding entity or bodies: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: PIC2012FR01
Start-End date: 01/2012 - 01/2015



- 15** **Name of the project:** Comienzo de la fase operativa del Instruct Image Processing Center
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Funding entity or bodies: Ministerio de Ciencia e Innovación. Universidades **Type of entity:** Ministerio
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: AIC-A-2011-0638
Start-End date: 12/2011 - 12/2014
- 16** **Name of the project:** Hacia una Microscopía electrónica tridimensional de alto rendimiento
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Funding entity or bodies: Ministerio de Ciencia e Innovación. Universidades **Type of entity:** Ministerio
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: BIO2010-16566
Start-End date: 01/2011 - 01/2014
- 17** **Name of the project:** Puesta en marcha del Centro Asociado INSTRUMENT en procesamiento de imágenes en Microscopía
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): J.M. Carazo
Funding entity or bodies: Ministerio de Ciencia e Innovación. Universidades **Type of entity:** Ministerio
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: ACI2010-1088
Start-End date: 01/2011 - 01/2012
- 18** **Name of the project:** Hacia la proteómica funcional: una aproximación conjunta desde la proteómica, la bioinformática y la biología estructural
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): J.M. Carazo
Funding entity or bodies: Comunidad de Madrid **Type of entity:** Comunidad autónoma
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: S-GEN-0166-2006
Start-End date: 01/2007 - 01/2012
- 19** **Name of the project:** Parallel-Scalable Single-Particle Analysis in 3D Electron Microscopy
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): C.O.S. Sorzano
Funding entity or bodies: European Union **Type of entity:** Public Research Body
Code according to the funding entity: EU FP6 project RI-031513 and the FP7 project RI-222919
Start-End date: 10/2010 - 05/2011



- 20** **Name of the project:** Associated Center for Image Processing in Microscopy for Structural Biology
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): J.M. Carazo
Funding entity or bodies: Ministerio de Ciencia e Innovación. Universidades **Type of entity:** Ministerio
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: ACI2009-1022
Start-End date: 01/2010 - 01/2011
- 21** **Name of the project:** Four-dimensional cryo-transmission electron microscopy of large macromolecular assemblies
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): C.O.S. Sorzano
Funding entity or bodies: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: 2009FR0015
Start-End date: 01/2010 - 01/2011
- 22** **Name of the project:** Tomografía de rayos X: una herramienta de integración entre biología molecular y celular
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): C.O.S. Sorzano; J.M. Carazo
Funding entity or bodies: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: PIF08-020
Start-End date: 06/2008 - 06/2010
- 23** **Name of the project:** Análisis de grandes cantidades de imágenes de microscopía electrónica tridimensional: desarrollo de métodos y aplicación al análisis del replisoma
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): J.M. Carazo
Funding entity or bodies: MINISTERIO DE EDUCACION Y CIENCIA
City funding entity: Spain
Code according to the funding entity: BIO2007-67150-C03-1
Start-End date: 01/2007 - 04/2010
- 24** **Name of the project:** Centrosoma 3D
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency
Name principal investigator (PI, Co-PI....): L. Serrano
Funding entity or bodies: MINISTERIO DE EDUCACION Y CIENCIA
City funding entity: Spain



Code according to the funding entity: Consolider CSD2006-00023

Start-End date: 11/2006 - 11/2009

25 Name of the project: Consorcio para el Desarrollo de Tecnología Avanzada de Imagen Médica

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): M. Desco

Funding entity or bodies:

MINISTERIO DE EDUCACION Y CIENCIA

City funding entity: Spain

Code according to the funding entity: Cénit CDTEAM

Start-End date: 09/2007 - 09/2009

26 Name of the project: Image Processing in Biological 3D Electron Microscopy

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

City of entity: Spain

Name principal investigator (PI, Co-PI....): G.T. Herman; J.M. Carazo

Funding entity or bodies:

National Institutes of Health (NIH)

Type of entity: Public Research Body

City funding entity: United States of America

Code according to the funding entity: 5R01HL070472-07

Start-End date: 01/2005 - 09/2009

27 Name of the project: Herramientas para el análisis y estudio de registros polisomnográficos de pacientes con alteraciones cardiopulmonares del sueño

Entity where project took place: Universidad San Pablo CEU **Type of entity:** University

Name principal investigator (PI, Co-PI....): A. Otero

Funding entity or bodies:

Universidad San Pablo CEU

Type of entity: University

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 09/2007 - 08/2009

28 Name of the project: Reconstrucción tridimensional de alta resolución en cámaras PET para animales pequeños

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): R. Marabini

Funding entity or bodies:

Instituto de Salud Carlos III

Type of entity: Public Research Body

City funding entity: Majadahonda, Community of Madrid, Spain

Start-End date: 03/2005 - 03/2008

29 Name of the project: New electron microscopy approaches for studying protein complexes and cellular supramolecular architecture

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): A. Engel



Code according to the funding entity: FP6-502828
Start-End date: 03/2004 - 02/2008

30 Name of the project: Hacia la comprensión de la riqueza estructural de las nanomáquinas moleculares
Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): J.M. Carazo

Funding entity or bodies:

Comisión Interministerial de Ciencia y Tecnología **Type of entity:** Ministerio

City funding entity: Madrid, Community of Madrid, Spain

Code according to the funding entity: BFU2004-00217/BMC

Start-End date: 09/2004 - 09/2007

31 Name of the project: Técnicas de procesamiento de señales multidimensionales aplicadas a biología estructural mediante microscopía electrónica

Entity where project took place: Universidad San Pablo CEU **Type of entity:** University

Funding entity or bodies:

Universidad San Pablo CEU **Type of entity:** University

City funding entity: Madrid, Community of Madrid, Spain

Code according to the funding entity: PC 14/05

Start-End date: 09/2005 - 09/2006

32 Name of the project: Generación automática de correspondencias entre ontologías con aplicación al análisis de bases de datos de genómica y proteómica

Entity where project took place: Universidad San Pablo CEU **Type of entity:** University

Name principal investigator (PI, Co-PI....): M. Fernández

Funding entity or bodies:

Universidad San Pablo CEU **Type of entity:** University

Code according to the funding entity: CEU 08/04

Start-End date: 07/2004 - 07/2006

33 Name of the project: Técnicas de procesamiento de señales multidimensionales aplicadas a biología estructural mediante microscopía electrónica

Entity where project took place: Universidad San Pablo CEU **Type of entity:** University

Name principal investigator (PI, Co-PI....): C.O.S. Sorzano

Funding entity or bodies:

Comunidad de Madrid **Type of entity:** Comunidad autónoma

City funding entity: Madrid, Community of Madrid, Spain

Code according to the funding entity: GR/SAL/0342/2004

Start-End date: 01/2005 - 01/2006

34 Name of the project: IM3: Imagen Médica Molecular y Multimodalidad

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): J.M. Carazo

Funding entity or bodies:

Instituto de Salud Carlos III **Type of entity:** Public Research Body



City funding entity: Majadahonda, Community of Madrid, Spain

Code according to the funding entity: FIS (G03/185)

Start-End date: 01/2003 - 12/2005

- 35 Name of the project:** Image processing in biological 3D electron microscopy
Entity where project took place: Consejo Superior de Investigaciones Científicas
Type of entity: State agency
Name principal investigator (PI, Co-PI....): J.M. Carazo
Funding entity or bodies:
Natl. Institutes of Health (USA) **Type of entity:** Public Research Body
Code according to the funding entity: 1R01HL67465-01
Start-End date: 09/2001 - 09/2005
- 36 Name of the project:** Análisis estructural a resolución media de macromoléculas biológicas: una aproximación conjunta desde la biología y la bioinformática estructural
Entity where project took place: Consejo Superior de Investigaciones Científicas
Type of entity: State agency
Name principal investigator (PI, Co-PI....): J.M. Carazo
Funding entity or bodies:
Comisión Interministerial de Ciencia y Tecnología **Type of entity:** Ministerio
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: BIO2001-1237
Start-End date: 12/2001 - 12/2004
- 37 Name of the project:** Desarrollo de técnica de eliminación de ruido en imágenes y aplicación a microscopía electrónica y astronomía
Entity where project took place: Universidad San Pablo CEU
Type of entity: University
City of entity: Madrid, Spain
Name principal investigator (PI, Co-PI....): C.O.S. Sorzano
Funding entity or bodies:
Universidad San Pablo CEU **Type of entity:** University
City funding entity: Madrid, Community of Madrid, Spain
Code according to the funding entity: CEU 17/02
Start-End date: 09/2002 - 09/2004
- 38 Name of the project:** Doped derivative-free algorithms for medical-image registration
Entity where project took place: Swiss Federal Institute of Technology Lausanne (EPFL)
City of entity: Lausanne, Switzerland
Name principal investigator (PI, Co-PI....): M. Unser
Funding entity or bodies:
Swiss National Science Foundation SNF **Type of entity:** Public Research Body
City funding entity: Switzerland
Code according to the funding entity: 2153-066938
Start-End date: 04/2002 - 03/2004
- 39 Name of the project:** Integration of Information about Macromolecular Structure
Entity where project took place: Consejo Superior de Investigaciones Científicas
Type of entity: State agency

**Funding entity or bodies:**

Unión europea

Type of entity: Unión europea**Code according to the funding entity:** QLRI-CT-2000-31237**Start-End date:** 10/2000 - 10/2003

- 40 Name of the project:** Replication initiation protein as new targets for bacterial growth inhibition (DNA Replication inhibitors)

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency**Name principal investigator (PI, Co-PI....):** J.M. Carazo**Funding entity or bodies:**

Unión Europea

Type of entity: Public Research Body**Code according to the funding entity:** QLK2-2000-00634**Start-End date:** 09/2000 - 09/2003

- 41 Name of the project:** Reconstrucción tridimensional en microscopía electrónica: Organización de volúmenes en la base de datos Bioimage, desarrollo de nuevas metodologías en procesamiento de imagen y aplicación al estudio estructural de diversas helicasas hexaméricas

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency**Name principal investigator (PI, Co-PI....):** J.M. Carazo**Funding entity or bodies:**

Comisión Interministerial de Ciencia y Tecnología

Type of entity: Public Research Body**Code according to the funding entity:** BIO 98-0761**Start-End date:** 09/1998 - 09/2001

- 42 Name of the project:** Fully three-dimensional image reconstruction from transmission electron-microscopy projections

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency**Name principal investigator (PI, Co-PI....):** J.M. Carazo**Funding entity or bodies:**

OTAN

Type of entity: Organización internacional**Code according to the funding entity:** CRG 960070**Start-End date:** 01/1996 - 03/2000

- 43 Name of the project:** Desarrollo y aplicación al sistema de las helicasas hexaméricas de nuevas estrategias de reconstrucción tridimensional a resolución macromolecular

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency**Name principal investigator (PI, Co-PI....):** J.M. Carazo**Funding entity or bodies:**

Ministerio Educación y Cultura / Soc. Max Planck

Type of entity: Public Research Body**Start-End date:** 01/1998 - 12/1999

- 44 Name of the project:** Bioimage: a european database of biological volume images

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency**Name principal investigator (PI, Co-PI....):** J.M. Carazo**Funding entity or bodies:**



Unión europea

Type of entity: Public Research Body**Code according to the funding entity:** BIOTEC PL960472**Start-End date:** 12/1996 - 12/1999

45 Name of the project: Análisis estructural del antígeno T de SV40: Su caracterización estructural y el desarrollo de nuevas técnicas de procesamiento de imágenes multidimensionales

Entity where project took place: Consejo Superior de Investigaciones Científicas **Type of entity:** State agency

Name principal investigator (PI, Co-PI....): J.M. Carazo

Funding entity or bodies:

Comunidad de Madrid

Type of entity: Comunidad autónoma

City funding entity: Madrid, Community of Madrid, Spain

Code according to the funding entity: CAM07B/0027/1997

Start-End date: 11/1997 - 11/1999

R&D non-competitive contracts, agreements or projects with public or private entities

1 Name of the project: Towards enhancing throughput in streaming cryo Electron Microscopy Image Processing

Degree of contribution: Coordinator of total project, network or consortium

Nº of researchers: 1

Participating entity/entities: Centro Nacional de Biotecnología

Funding entity or bodies:

Gandeeva Therapeutics

Type of entity: Business

City funding entity: Vancouver, Canada

Start date: 13/01/2022

Duration: 1 year

Total amount: 128.000 €

2 Name of the project: Image processing challenges and advanced light microscopy

Degree of contribution: Coordinator of total project, network or consortium

Nº of researchers: 1

Funding entity or bodies:

Benevolent AI

Type of entity: Business

City funding entity: London, United Kingdom

Start date: 22/04/2021

Duration: 1 year

Results

Technological results derived from specialized and transfer activities, not included in previous sections

- 1** **Description:** Cofundador de una consultora para las etapas tempranas del desarrollo de fármacos (KineStat Pharma)
Name of the principal Investigator (PI): C.O.S. Sorzano
Degree of contribution: Cofundador
Start date: 2015
- 2** **Description:** Transferencia de algoritmos de clasificación de imágenes a la empresa Halotech
Name of the principal Investigator (PI): C.O.S. Sorzano
Degree of contribution: Researcher
Start date: 2010 **Duration:** 3 years
- 3** **Description:** Transferencia de algoritmos de registro elástico 2D a la empresa ANDOR Technology
Name of the principal Investigator (PI): C.O.S. Sorzano
Degree of contribution: Researcher
Start date: 2010
- 4** **Description:** Consultor estadístico de "Integromics" para el análisis de datos de genómica y proteómica
Name of the principal Investigator (PI): C.O.S. Sorzano
Degree of contribution: Consultor
Start date: 2007 **Duration:** 4 years
- 5** **Description:** Consultor estratégico de "Trendit.es" en el área de minería e interpretación de datos de opinión de usuarios de Internet
Name of the principal Investigator (PI): C.O.S. Sorzano
Degree of contribution: Consultor
Start date: 2007 **Duration:** 3 months
- 6** **Description:** Consultor de "Delaware consulting" sobre análisis estadístico de los hábitos de consumo de los clientes
Name of the principal Investigator (PI): C.O.S. Sorzano
Degree of contribution: Consultor
Start date: 2006 **Duration:** 6 months
- 7** **Description:** Consultor de "Canal Comercial Telefónica Corporación" sobre el desarrollo de un producto de transmisión de video sobre ADSL
Name of the principal Investigator (PI): C.O.S. Sorzano
Degree of contribution: Consultor
Start date: 2004 **Duration:** 2 years



Scientific and technological activities

Scientific production

H index: 50

Date of application: 2023

Fuente de Índice H: GOOGLE SCHOLAR

Publications, scientific and technical documents

- 1** Kulczyk; Sorzano; Grela; Tchórzewski; Tumer; Li. Cryo-EM structure of Shiga toxin 2 in complex with the native ribosomal P-stalk reveals residues involved in the binding interaction. *J. Biological Chemistry*. 299, pp. 102795. 2023.

Type of production: Scientific paper **Format:** Journal

Corresponding author: No
- 2** Herreros; Lederman; Krieger; Jimenez-Moreno; Martinez; Myska; Strelak; Filipovic; Bahar; Carazo; Sorzano. Estimating conformational landscapes from CryoEM particles by 3D Zernike polynomials. *Nature Communications*. 14, pp. 154. 2023.

Type of production: Scientific paper **Format:** Journal

Corresponding author: Yes
- 3** Varadi; Anyango; Armstrong; Berrisford; Choudhary; Deshpande; Nadzirin; Nair; Pravda; Tanweer; Al-Lazikani; Andreini; Barton; Bednar; Berka; Blundell; Brock; Carazo; Damborsky; David; Dey; Dunbrack; Fernandez Recio; Fraternali; Gibson; Helmer-Citterich; Hoksza; Hopf; Jakubec; Kannan; Krivak; Kumar; Levy; London; Macias; Srivatsan; Marks; Martens; McGowan; McGreig; Modi; Gonzalo Parra; Pepe; Piovesan; Prilusky; Putignano; Radusky; Ramasamy; Rausch; Reuter; Rodriguez; Rollins; Rosato; Rubach; Serrano; Singh; Skoda; Sorzano; Stourac; Sulkowska; Svobodova; Tichshenko; Tosatto; Vranken; Wass; Xue; Zaidman; Thornton; Sternberg; Orengo; Velankar. PDBE-KB: collaboratively defining the biological context of structural data. *Nucleic Acids Research*. 50, pp. gkab988. 2022.

Type of production: Scientific paper **Format:** Journal

Corresponding author: No
- 4** Sorzano; Pérez-de-la-Cruz Moreno; Vilas. An analytical solution for saturable absorption in pharmacokinetics models. *Pharmaceutical Research*. pp. s11095-022-03455-z. 2022.

Type of production: Scientific paper **Format:** Journal

Corresponding author: Yes
- 5** García Condado; Muñoz-Barrutia; Sorzano. Automatic determination of the handedness of Single-Particle maps of macromolecules solved by CryoEM. *J. Structural Biology*. 214, pp. 107915. 2022.

Type of production: Scientific paper **Format:** Journal

Corresponding author: Yes
- 6** Sánchez-García; Macías; Sorzano; Carazo; Segura. BIPSPI+: Mining type-specific datasets of protein complexes to improve protein binding site prediction. *J. Molecular Biology*. 434, pp. 167556. 2022.

Type of production: Scientific paper **Format:** Journal

Corresponding author: No



- 7** Cayuela-López; Gómez-Pedrero; Oña Blanco; Sorzano. Cell-TypeAnalyzer: A flexible Fiji/ImageJ plugin to classify cells according to user-defined criteria. *Biological Imaging*. 2, pp. e5. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 8** Sorzano; Carazo. Cryo-Electron Microscopy: the field of 1,000+ methods. *J. Structural Biology*. 214, pp. 107861. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 9** Vilas; Carazo; Sorzano. Emerging themes in cryoEM-SPA Image processing. *Chemical reviews*. 122, pp. 13915 - 13951. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 10** Ramírez-Aportela; Carazo; Sorzano. Higher resolution in CryoEM by the combination of macromolecular prior knowledge and image processing tools. *IUCR J.* 9, pp. 632 - 638. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 11** Sorzano; Vilas; Ramírez-Aportela; del Hoyo; Herreros; Fernandez-Giménez; Marchán; de Isidro Gómez; Macías; Sánchez; del Caño; Fonseca-Reyna; Conesa; García-Mena; Burguet; García Condado; Méndez García; Martínez; Muñoz Barrutia; Marabini; Vargas; Carazo. Image processing tools for the validation of CryoEM maps. *Faraday Discussions*. 240, pp. 210 - 227. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 12** Cuesta-Geijo; García-Dorival; del Puerto; Urquiza; Galindo; Lasala; Cayuela; Barrado-Gil; Sorzano; Gil; Delgado; Alonso. New insights into the role of endosomal proteins for African swine fever virus infection. *PLOS Pathogens*. 18, pp. e1009784. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 13** Sorzano; Jimenez-Moreno; Maluenda; Martinez; Ramirez-Aportela; Melero; Cuervo; Conesa; Filipovic; Conesa; del Caño; Fonseca; Jiménez-de la Morena; Losana; Sánchez-García; Strelak; Fernandez-Gimenez; de Isidro; Herreros; Vilas; Marabini; Carazo. On bias, variance, overfitting, gold standard and consensus in Single Particle Analysis by Cryo-electron microscopy. *Acta Crystallographica Section D*. D78, pp. 410 - 423. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 14** Krieger; Sorzano; Carazo; Bahar. Protein Dynamics Developments for Large Scale and CryoEM: Case Study of ProDy 2.0. *Acta Crystallographica Section D*. D78, pp. S2059798322001966. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 15** Jiménez de la Morena; Conesa; Fonseca; de Isidro-Gómez; Herreros; Fernández-Giménez; Strelak; Moebel; Buchholz; Jug; Martínez-Sánchez; Conesa; Cuervo; Losana; Sánchez; Iceta; del Caño; Gragera; Melero; Sharov; Castaño-Díez; Koster; Piccirillo; Vilas; Otón; Marabini; Sorzano; Carazo. ScipionTomo: towards cryo-electron tomography software integration, reproducibility, and validation. *J. Structural Biology*. 214, pp. 107872. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No



- 16** Bepler; Borst; Bouvette; Cannone; Chen; Cheng; Cheng; Fan; Grollios; Gupta; Gupta; Humphreys; Kim; Kuang; Li; Noble; Punjani; Rice; Sorzano; Stagg; Strauss; Yu; Carragher; Potter. Smart Data Collection for CryoEM. *J. Structural Biology*. 214, pp. 107913. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 17** Ginex; Wieczór; Mata; Krieger; López-Redondo; Francés-Gómez; Ruiz-Rodríguez; Melero; Sorzano; Martínez; Gougeard; Forcada-Nadal; Zamora-Caballero; Gozalbo-Rovira; Sanz-Frasquet; Bravo; Rubio; Marina; Geller; Comas; Gil; Coscolla; Orozco; Llácer; Carazo; Marco-Marín. The structural role of SARS-CoV-2 genetic background in the emergence and success of spike mutations: the case of S:A222V. *PLOS Pathogens*. 18, pp. e1010631. 2022.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 18** Macías; Sánchez-García; Conesa; Ramírez-Aportela; Martínez; Wert Carvajal; Segura; Horrell; Thorn; Sorzano; Carazo. 3DBionotes COVID-19 Edition. *Bioinformatics*. 37, pp. 4258 - 4260. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 19** Sorzano; Pérez de la Cruz-Moreno; Martín; Montejo; Aguilar Ros. A signal processing approach to pharmacokinetic data analysis. *Pharmaceutical Research*. 38, pp. 625 - 635. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 20** Strelak; Jiménez-Moreno; Vilas; Ramírez-Aportela; Sánchez-García; Maluenda; Vargas; Herreros; Fernández-Giménez; de Isidro-Gómez; Horacek; Myska; Horacek; Conesa; Fonseca-Reyna; Jiménez; Martínez; Harastani; Jonic; Filipovic; Marabini; Carazo; Sorzano. Advances in Xmipp for Cryo-electron Microscopy: From Xmipp to Scipion. *Molecules*. 26, pp. 6224. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 21** Sorzano; Semchonok; Lin; Vilas; Jiménez; Gragera; Maluenda; Martínez; Ramírez-Aportela; Melero; Cuervo; Conesa; del Caño; Fonseca-Reyna; Sánchez-García; Strelak; Fernández-Giménez; de Isidro; Kastritis; Marabini; Bruce; Carazo. Algorithmic robustness to preferred orientations in Single Particle Analysis by CryoEM. *J. Structural Biology*. 213, pp. 107695. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 22** Herreros; Lederman; Krieger; Jiménez-Moreno; Martínez; Bahar; Carazo; Sorzano. Approximating deformation fields for the analysis of continuous heterogeneity of biological macromolecules by 3D Zernike polynomials. *IUCR J*. 8, pp. eh5012. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 23** García-Arriaza; Garaigorta; Pérez; Lázaro-Frías; Zamora; Gastaminza; del Fresno; Casanovas; Sorzano; Sancho; Esteban. COVID-19 vaccine candidates based on modified vaccinia virus Ankara expressing the SARS-CoV-2 spike induce robust T- and B-cell immune responses and full efficacy in mice. *J. Virology*. 95, pp. e02260-20. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No



- 24** Semchonok; Mondal; Cooper; Schlum; Li; Amin; Sorzano; Ramírez-Aportela; Kastritis; Boekema; Guskov; Bruce. Cryo-EM Structure of a Tetrameric Photosystem I from *Chroococcidiopsis* TS-821, a Thermophilic, unicellular, Non-heterocyst-forming Cyanobacteria. *Plant communications*. 2, pp. 100248. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 25** Jiménez-Moreno; del Caño; Martínez; Ramírez-Aportela; Cuervo; Melero; Sánchez-García; Strelak; Fernández-Giménez; de Isidro-Gómez; Herreros; Conesa; Fonseca; Maluenda; Jiménez de la Morena; Macías; Losana; Marabini; Carazo; Sorzano. Cryo-EM and Single-Particle Analysis with Scipion. *J. of Visualized Experiments*. 171 - e62261, 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 26** Fernández-Giménez; Martínez; Sánchez-García; Marabini; Ramírez-Aportela; Conesa; Carazo; Sorzano. Cryo-EM density maps adjustment for subtraction, consensus and sharpening. *J. Structural Biology*. 213, pp. 107780. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 27** Jiménez; Strelak; Filipovic; Carazo; Sorzano. DeepAlign, a 3D alignment method based on regionalized deep learning. *J. Structural Biology*. 213 - 107712, 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 28** Sánchez-García; Gómez-Blanco; Cuervo; Carazo; Sorzano; Vargas. DeepEMhancer: a deep learning solution for cryo-EM volume post-processing. *Communications Biology*. 4, pp. 874. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 29** Kazhemi; Sorzano; des Georges; Efremov; Carazo; Vargas. ENRICH: a method to improve the quality of heterogeneous macromolecular reconstructions. *Progress in Biophysics and Molecular Biology*. 164, pp. 92 - 100. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 30** Gómez; Perdiguero; Falqui; Marín; Becáres; Sorzano; García-Arriaza; Esteban; Guerra. Enhancement of HIV-1 Env-specific CD8 T cell responses using IFN-Stimulated Gene 15 (ISG15) as an immune adjuvant. *J. Virology*. 95, pp. e01155-20. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 31** Gómez; Perdiguero; Usero; Marcos-Villar; Miralles; Leal; Sorzano; Sánchez-Corzo; Plana; García; Esteban. Enhancement of the HIV-1-specific immune response induced by an mRNA vaccine through boosting with a poxvirus MVA vector expressing the same antigen. *Vaccines*. 9, pp. 959. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 32** Ramírez-Aportela; Maluenda; Fonseca-Reyna; Conesa; Marabini; Heymann; Carazo; Sorzano. FSC-Q: A CryoEM map-to-atomic model quality validation based on the local Fourier Shell Correlation. *Nature Communications*. 12, pp. 42. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes



- 33** Di Pilato; Palomino-Segura; Mejías-Pérez; D'Antuono; Pizzagalli; Pérez; Sorzano; González; Esteban. Neutrophil Subtypes Shape HIV-specific CD8 T Cell Responses After Vaccinia Virus Infection. *NPJ Vaccines*. 6, pp. 52. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 34** Sorzano; Carazo. PCA is limited to low resolution analysis in CryoEM. *Acta Crystallographica Section D*. D77, pp. 835 - 839. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 35** Wert Carvajal; Sánchez-García; Macías; Sanz-Pamplona; Méndez Pérez; Alemany; Veiga; Sorzano; Muñoz-Barrutia. Predicting MHC I restricted T cell epitopes in mice with NAP-CNB, a novel online tool. *Scientific Reports*. 11, pp. 10780. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 36** Sorzano; Fonseca; Pérez de la Cruz Moreno. Scipion PKPD: an open-source platform for Biopharmaceutics, Pharmacokinetics and Pharmacodynamics Data Analysis. *Pharmaceutical Research*. 38, pp. 1169 - 1178. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 37** Zhang; Krieger; Mikulska-Ruminska; Kaynak; Sorzano; Carazo; Xing; Bahar. State-Dependent Sequential Allostery Exhibited by Chaperonin TRiC/CCT Revealed by Network Analysis of Cryo-EM Maps. *Progress in Biophysics and Molecular Biology*. 160, pp. 104 - 120. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 38** Sorrentino; Conesa; Cuervo; Melero; Martins; Fernández-Giménez; de Isidro; Jiménez; Studt; Sorzano; Eibauer; Carazo; Medalia. Structural analysis of receptors and actin polarity in platelet protrusions. *Proc. Natl. Acad. Sciences*. 118, pp. e2105004118. 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 39** Pérez; Martín-Acebes; Poderoso; Lázaro-Frías; Saiz; Sorzano; Esteban; García-Arriaza. The combined vaccination protocol of DNA/MVA expressing Zika virus structural proteins as efficient inducer of T and B cell immune responses. *Emerging Microbes & Infections*. 10, 2021.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
- 40** E Ramirez-Aportela; J. L. Vilas; A. Glukhova; R. Melero; P. Conesa; M. Martinez; D. Maluenda; J. Mota; A. Jimenez; J. Vargas; R. Marabini; P M Sexton; J M Carazo; C. O. S. Sorzano. Automatic local resolution-based sharpening of cryo-EM maps. *Bioinformatics*. 36, pp. 765 - 772. 2020.
Type of production: Scientific paper **Format:** Journal
- 41** R. Melero; C. O. S. Sorzano; B. Foster; J. L. Vilas; M. Martínez; R. Marabini; E. Ramirez-Aportela; R. Sanchez-Garcia; D. Herreros; L. Del Caño; P. Losana; Y. Fonseca-Reyna; P. Conesa; D. Wrapp; P. Chacón; J. S. McLellan; H. D. Tagare; J. M. Carazo. Continuous flexibility analysis of SARS-CoV-2 Spike prefusion structures. *IUCrJ*. 7 - 6, 2020.
Type of production: Scientific paper **Format:** Journal



- 42** P. Perez; M Q Marin; A Lazaro-Frias; C O S Sorzano; C E Gomez; M Esteban; J Garcia-Arriaza. Deletion of vaccinia virus A40R gene improves the immunogenicity of the HIV-1 vaccine candidate MVA-B. *Vaccines*. 8 - 1, pp. 70 - 70. 2020.
Type of production: Scientific paper **Format:** Journal
- 43** D. Strelak; J. Filipovic; A. Jiménez-Moreno; J. M. Carazo; C. O. S. Sorzano. FlexAlign: An Accurate and Fast Algorithm for Movie Alignment in Cryo-Electron Microscopy. *Electronics*. 9, pp. 1040 - 1040. 2020.
Type of production: Scientific paper **Format:** Journal
- 44** M. Harastani; C. O. S. Sorzano; S. Jonic. Hybrid Electron Microscopy Normal Mode Analysis with Scipion. *Protein science*. 29, pp. 223 - 236. 2020.
Type of production: Scientific paper **Format:** Journal
- 45** C. O. S. Sorzano; F. de Isidro-Gómez; E. Fernández-Giménez; D. Herreros; S. Marco; J. M. Carazo; C. Messaoudi. Improvements on marker-free images alignment for electron tomography. *J. Structural Biology X*. 4, pp. 100037 - 100037. 2020.
Type of production: Scientific paper **Format:** Journal
- 46** M. Martinez; A. Jimenez-Moreno; D. Maluenda; E. Ramirez-Aportela; R. Melero; A. Cuervo; P. Conesa; L. del Cano; Y. C. Fonseca; R. Sanchez-Garcia; D. Strelak; J. J. Conesa; E. Fernandez-Gimenez; F. de Isidro; C. O. S. Sorzano; J. M. Carazo; R. Marabini. Integration of Cryo-{EM} Model Building Software in Scipion. *J. Chemical Information and Modelling*. 60, pp. 2533 - 2540. 2020.
Type of production: Scientific paper **Format:** Journal
- 47** J. L. Vilas; J. B. Heymann; H. D. Tagare; E. Ramirez-Aportela; J. M. Carazo; C. O. S. Sorzano. Local resolution estimates of cryoEM reconstructions. *Current Opinion in Structural Biology*. 64, pp. 74 - 78. 2020.
Type of production: Scientific paper **Format:** Journal
- 48** J. L. Vilas; J Oton; C Messaoudi; R Melero; P Conesa; E Ramirez-Aportela; J Mota; M Martinez; A Jimenez; R Marabini; C. O. S. Sorzano; J. Vargas; J. M. Carazo. Measurement of local resolution in electron tomography. *Journal of Structural Biology: X*. 4, pp. 100016 - 100016. 2020.
Type of production: Scientific paper **Format:** Journal
- 49** J. L. Vilas; H. D. Tagare; J. Vargas; J. M. Carazo; C. O. S. Sorzano. Measuring local-directional resolution and local anisotropy in cryo-{EM} maps. *Nature communications*. 11, pp. 55 - 55. 2020.
Type of production: Scientific paper **Format:** Journal
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Format: Journal

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Type of production: Book chapter

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Type of production: Scientific book or monograph

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- 244** C.O.S. Sorzano. Algoritmos iterativos de tomografía tridimensional en microscopía electrónica de transmisión. Tesis ETSIT, Univ. Politécnica Madrid. 2002.

Type of production: Scientific book or monograph

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Type of production: Scientific book or monograph

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Type of production: Scientific book or monograph

Format: Book

- 247** C.O.S. Sorzano. Panorama de investigación en Ingeniería Biomédica 2015. 2015.

Type of production: Popular science book



Works submitted to national or international conferences

- 1** **Title of the work:** 3DBionotes COVID-19 Structural Hub: a central resource for validation information and refined models
Name of the conference: European Conference on Computational Biology
Corresponding author: No
City of event: Barcelona, Spain
Date of event: 2022
Macías; Simón; Ramírez-Aportela; Vilas; Martínez; Sorzano; Carazo.
- 2** **Title of the work:** A FAIR and Cloud-enabled approach for Electron Microscopy data processing
Name of the conference: EOSC Symposium
Corresponding author: No
City of event: Prague, Hungary
Date of event: 2022
del Caño; Sánchez; Carazo; Sorzano; Svoboda; Veverka; Handl; Krnek; Novacek.
- 3** **Title of the work:** A new tool for the analysis of molecular motions: studying continuous heterogeneity through Zernikes3D
Name of the conference: Gordon Research Conference on Three-dimensional Electron Microscopy
Corresponding author: No
City of event: Barcelona, Spain
Date of event: 2022
Herreros; Lederman; Krieger; Jiménez-Moreno; Martínez; Myska; Strelak; Filipovic; Subramanian; Sorzano; Carazo.
- 4** **Title of the work:** Beyond discrete classes: Continuous flexibility analysis to better understand molecular motions and improve resolutions by Zernike3D
Name of the conference: Protein Structure Determination in Industry
Corresponding author: Yes
City of event: Holland
Date of event: 2022
Carazo; Herreros; Sorzano.
- 5** **Title of the work:** Bioinformatics analysis of mutations in SARS-CoV-2 and clinical phenotypes
Name of the conference: Congreso de la PTI Salud Global
Corresponding author: No
City of event: Valencia, Spain
Date of event: 2022
Ulzurrun; del Hoyo; Herrera; Navarro; Ruiz-Rodriguez; Rodriguez-Santana; Garcia-Resines; Naveiro; Gil; Carazo; Coscollá; Sorzano; Campillo.
- 6** **Title of the work:** Biophysical and structural characterization of the Spike of the 20E (EU1) SARS-COV-2 variant
Name of the conference: Congreso Soc. Española de Bioquímica y Biología Molecular
Corresponding author: No
City of event: Málaga, Spain
Date of event: 2022
Marco-Marín; Mata; Ginex; Wieczór; Krieger; López-Redondo; Melero; Gougeard; Forcada-Nadal; Zamora-Caballero; Gozalbo-Rovira; Sanz-Frasquet; Martínez; Arranz; Francés-Gómez; Villamayor;



Espinosa; Fernández-Sierra; Adhav; Ruiz-Partida; Bravo; Marina; Rubio; Sorzano; Geller; Gil; Orozco; Carazo; Llácer.

- 7** **Title of the work:** Cinética de reacción de cementos activados alcalinamente para el almacenamiento de resinas gastadas de grado nuclear
Name of the conference: 47ª Reunión Anual de la Sociedad Nuclear Española
Corresponding author: No
City of event: Spain
Date of event: 2022
Criado; Sorzano; de Hita.
- 8** **Title of the work:** Effect of the incorporation of spent nuclear resins on the mechanical properties and porosity of alkali-activated slag – ash cement
Name of the conference: 41st Cement and concrete science conference
Corresponding author: No
City of event: United Kingdom
Date of event: 2022
de Hita; Sorzano; Criado.
- 9** **Title of the work:** Enhancement of HIV-1 Env-Specific CD8 T Cell Responses Using Interferon-Stimulated Gene 15 as an Immune Adjuvant
Name of the conference: The ISG15 system in molecular function and disease mechanisms
Corresponding author: No
City of event: Germany
Date of event: 2022
Gómez; Perdiguero; Falqui; Marín; Bécares; Sorzano; García-Arriaza; Esteban; Guerra.
- 10** **Title of the work:** Extraction of continuous protein dynamics from CryoEM aided by coefficient conversion between normal modes and 3D Zernike polynomials
Name of the conference: CCPEM Spring Symposium
Corresponding author: No
City of event: Cambridge, United Kingdom
Date of event: 2022
Krieger; Herreros; Sorzano; Carazo.
- 11** **Title of the work:** Genomic surveillance and impact of SARS-CoV-2 mutations
Name of the conference: Congreso de la PTI Salud Global
Corresponding author: No
City of event: Valencia, Spain
Date of event: 2022
Ruiz-Rodriguez; Álvarez-Herrera; Franco; Francés-Gómez; Marques; Ulzurum; Martínez-Martínez; Rodríguez Santana; Naveiro Flores; García Rasines; Marina; Llácer; Vidal; Sorzano; Carazo; Gil; Ríos; González-Candela; Geller; Comas; Elena; Coscollá.
- 12** **Title of the work:** Imaging Data: adding a new type of annotations to 3DBionotes-WS
Name of the conference: European Conference on Computational Biology
Corresponding author: No
City of event: Barcelona, Spain
Date of event: 2022
Simón; Macías; Ramírez-Aportela; Martínez; Sorzano; Carazo.



- 13** **Title of the work:** Immobilization of spent nuclear grade resins in low carbon cement: study of the reaction kinetics
Name of the conference: European Commission Conference on EURATOM Research and Training in Radioactive Waste Management
Corresponding author: No
City of event: France
Date of event: 2022
de Hita; Sorzano; Criado.
- 14** **Title of the work:** Implementation of a workflow for the structural characterization of HER2 by subtomogram averaging
Name of the conference: Electron Tomography Congress
Corresponding author: No
City of event: Holland
Date of event: 2022
Cuervo; Losana; Wang; Conesa; Jiménez de la Morena; Vilas; Conesa; Martínez-Sánchez; Plückthun; Medalia; Sorzano; Carazo.
- 15** **Title of the work:** Macromolecular flexibility and its study through the new Zernike3D bases coupled with Molecular Dynamics
Name of the conference: Gordon Research Conference on 3D Electron Microscopy
Corresponding author: No
City of event: Spain
Date of event: 2022
Herreros; Krieger; Sorzano; Carazo.
- 16** **Title of the work:** Macromolecular flexibility and the experimental determination of conformational landscapes in the context of 3DBioinformatics
Name of the conference: Intl. Work-Conference on Bioinformatics and Biomedical Engineering
Corresponding author: No
City of event: Granada, Spain
Date of event: 2022
Herreros; Krieger; Sorzano; Carazo.
- 17** **Title of the work:** New Tools and Pipelines for Continuous Heterogeneity Analysis from Cryo-EM using Normal Modes and 3D Zernike Polynomials
Name of the conference: European Crystallography Meeting
Corresponding author: No
City of event: France
Date of event: 2022
Krieger; Herreros; Sorzano; Carazo.
- 18** **Title of the work:** New approaches to combine experimental information on macromolecular flexibility with Molecular Dynamics calculations
Name of the conference: European Conference on Computational Biology
Corresponding author: No
City of event: Barcelona, Spain
Date of event: 2022
Herreros; Krieger; Sorzano; Carazo.



- 19** **Title of the work:** New insights into the role of endosomal proteins for African swine fever virus infection
Name of the conference: Viruses
Corresponding author: No
Date of event: 2022
Cuesta-Geijo; García Dorival; del Puerto; Urquiza; Galindo; Barrado-Gil; Lasala; Cayuela; Sorzano; Gil; Delgado; Alonso.
- 20** **Title of the work:** Pushing local resolution of reconstructed maps: ZART and heterogeneity-based motion blur corrections
Name of the conference: Gordon Research Conference on Three-dimensional Electron Microscopy
Corresponding author: No
City of event: Barcelona, Spain
Date of event: 2022
Herreros; Lederman; Krieger; Jiménez-Moreno; Martínez; Myska; Strelak; Filipovic; Subramanian; Sorzano; Carazo.
- 21** **Title of the work:** SARS-CoV2 genomic statistical analysis to study hospitalization and vaccine failure
Name of the conference: Congreso de la PTI Salud Global
Corresponding author: No
City of event: Valencia, Spain
Date of event: 2022
S. Rodríguez Santana; Naveiro; García Rasines; Guevara Maldonado; Ulzurrun; Álvarez-Herrera; Ruiz-Rodríguez; Navarro-Domínguez; Sorzano; Coscollá; Campillo Martín; Ríos Insua.
- 22** **Title of the work:** ScipionTomo: a standard framework for cryoelectron tomography image processing
Name of the conference: 9th Electron Tomography Congress
Corresponding author: No
City of event: Holland
Date of event: 2022
Jiménez de la Morena; Conesa; Fonseca; de Isidro-Gómez; Herreros; Fernández-Giménez; Cuervo; Losana; Carazo; Sorzano; Vilas.
- 23** **Title of the work:** Stream processing of CryoElectron Microscopy images at the acquisition site
Name of the conference: Instruct Biennial Structural Biology Conf.
Corresponding author: Yes
City of event: Utrecht, Holland
Date of event: 2022
Marchán; García-Mena; Conesa; Chichón; Arranz; Fonseca-Reyna; del Caño; Sánchez-López; Iceta; Valpuesta; Carazo; Sorzano.
- 24** **Title of the work:** Zernikes3D: A new tool to study molecular motions through CryoEM particles
Name of the conference: 4th Intl. Conference on Image Analysis in Three-dimensional Cryo-EM
Corresponding author: No
City of event: Lake Tahoe, United States of America
Date of event: 2022
Herreros; Lederman; Krieger; Jiménez-Moreno; Martínez; Myska; Strelak; Filipovic; Bahar; Sorzano; Carazo.
- 25** **Title of the work:** 3DBionotes Covid-19 Edition
Name of the conference: Elixir 3D Bioinfo Community Annual Meeting
Corresponding author: No



City of event: Cambridge, United Kingdom

Date of event: 2021

Organising entity: EBI

Macías; Sánchez-García; Conesa; Ramírez-Aportela; Martínez; Wert; Parra; Segura; Horrell; Thorn; Sorzano; Carazo.

26 Title of the work: A new simplified approach to study continuous heterogeneity based on Zernike Polynomials and Spherical Harmonics

Name of the conference: Microscopy and microanalysis

Corresponding author: Yes

City of event: United States of America

Date of event: 2021

Organising entity: Microscopy Soc. America

Herreros; Lederman; Krieger; Jiménez; Martínez; Myska; Strelak; Filipovic; Bahar; Sorzano; Carazo.

27 Title of the work: Analysis of continuous flexibility made user friendly: A functional approach based on Zernike polynomials and Spherical harmonics

Name of the conference: One world

Corresponding author: Yes

City of event: New Haven, United States of America

Date of event: 2021

Organising entity: One World

Herreros; Lederman; Krieger; Jiménez; Martínez; Myska; Strelak; Filipovic; Bahar; Sorzano; Carazo.

28 Title of the work: Bias and variance in CryoEM

Name of the conference: Keystone Virtual Conf. Frontiers in Cryo-Electron Microscopy

City of event: Virtual,

Date of event: 2021

Organising entity: Keystone conferences

C.O.S. Sorzano; J.M. Carazo.

29 Title of the work: Cell-Type Analyzer: A Fiji/ImageJ plugin for detection, quantification and classification of fluorescent labeled single-cell according to user customization

Name of the conference: PSB Symposium Frontiers in Bioimaging

Corresponding author: Yes

City of event: Grenoble, France

Date of event: 2021

Organising entity: ESRF

Cayuela; Sorzano.

30 Title of the work: Continuous heterogeneity analysis of CryoEM images through Zernike polynomials and spherical harmonics

Name of the conference: Microscopy and microanalysis

Corresponding author: Yes

City of event: United States of America

Date of event: 2021

Organising entity: Microscopy Soc. America

Lederman; Krieger; Jiménez; Martínez; Myska; Strelak; Filipovic; Bahar; Sorzano; Carazo.



- 31** **Title of the work:** EMVS: A New Set of Annotations for cryo-EM Quality Validation Reports
Name of the conference: Microscopy at the Frontiers of Science
Corresponding author: No
City of event: Braga, Portugal
Date of event: 2021
Organising entity: Spanish and Portuguese Soc. Microscopy
Macías; Ramírez-Aportela; Vilas; Martínez; Parra; Sorzano; Carazo.
- 32** **Title of the work:** Electron Tomography Workflows using Scipion
Name of the conference: Microscopy and microanalysis
Corresponding author: Yes
City of event: United States of America
Date of event: 2021
Organising entity: Microscopy Soc. America
Jiménez; de Isidro; Fernández-Giménez; Herreros; Fonseca-Reyna; Conesa; Cuervo; Conesa; Melero; Carazo; Sorzano.
- 33** **Title of the work:** FSC-Q: A method for quality analysis of cryoEM-derived models
Name of the conference: 25th IUCr Congress
Corresponding author: Yes
City of event: Czech Republic
Date of event: 2021
Organising entity: IUCR
Ramírez-Aportela; Maluenda; Melero; Fonseca-Reyna; Conesa; Carazo; Sorzano.
- 34** **Title of the work:** Implementation of a workflow for the structural characterization of HER2 by subtomogram averaging
Name of the conference: Microscopy at the Frontiers of Science
Corresponding author: No
City of event: Braga, Portugal
Date of event: 2021
Organising entity: Spanish and Portuguese Soc. Microscopy
Cuervo; Losana; Conesa; Wang; Jiménez; Pluckthun; Medalia; Sorzano; Carazo.
- 35** **Title of the work:** In vivo experimental validation of the novel online tool NAP-CNB, a platform to predict MHC-I restricted T cell tumor epitopes in mice
Name of the conference: European Congress of Immunology
Corresponding author: No
City of event: Turkey
Date of event: 2021
Méndez; Wert; Sánchez-García; Macías; Sanz-Pamplona; Alemany; Sorzano; Muñoz-Barrutia; Veiga.
- 36** **Title of the work:** ProDy 2.0 and CryoDy: Extension of Protein Dynamics Analyses to Large Scale and Cryo-EM Maps
Name of the conference: CCPEM Spring Symposium
Corresponding author: No
City of event: Cambridge, United Kingdom
Date of event: 2021
Organising entity: CCPEM
Krieger; Zhang; Mikulska-Ruminska; Kaynak; Zhang; Li; Sorzano; Carazo; Xing; Bahar.



- 37** **Title of the work:** Why is a single execution of a single algorithm not enough in CryoEM?
Name of the conference: Microscopy at the Frontiers of Science
Corresponding author: Yes
City of event: Braga, Portugal
Date of event: 2021
Organising entity: Spanish and Portuguese Soc. Microscopy
Sorzano; Jiménez; Ramírez-Aportela; Krieger; Filipovic; Conesa; Fonseca-Reyna; Jiménez; Strelak; Fernández-Giménez; de Isidro; Herreros; Marchán; Vilas; Marabini; Carazo.
- 38** **Title of the work:** 3DBIONOTES: a set of analysis tools and integrated viewers to find relations between genomic variants and structural features
Name of the conference: Elixir All hands
City of event: Cambridge, United Kingdom
Date of event: 2020
Organising entity: European Bioinformatics Institute
J.R. Macías; C.O.S. Sorzano; J.M. Carazo.
- 39** **Title of the work:** 3DBionotes-COVID19 Edition: bringing together structural and functional information on SARS-CoV-2 proteome
Name of the conference: European Conf. on Computational Biology
City of event: Virtual,
Date of event: 2020
J.R. Macías; R. Sánchez García; P. Conesa; E. Ramírez-Aportela; M. Martínez; C.O.S. Sorzano; J.M. Carazo.
- 40** **Title of the work:** A newer set of annotations in 3DBionotes-WS
Name of the conference: 3D Bioinformatics Annual Meeting
City of event: Virtual,
Date of event: 2020
Organising entity: European Institute of Bioinformatics
J.R. Macías; E. Ramírez-Aportela; R. Sánchez García; P. Conesa; M. Martínez; C.O.S. Sorzano; J.M. Carazo.
- 41** **Title of the work:** Increasing access to FAIR data and image processing workflows in Cryo Electron Microscopy within the European Open Science Cloud (EOSC)
Name of the conference: 3D Bioinformatics Annual Meeting
City of event: Virtual,
Date of event: 2020
Organising entity: European Bioinformatics Institute
L. del Caño; P. Conesa; P. Audergon; N. Haley; J.M. Carazo; C.O.S Sorzano.
- 42** **Title of the work:** A local resolution in electron tomography and local directional resolution in Single Particle Analysis
Name of the conference: Gordon Research Conference Three Dimensional Electron Microscopy
City of event: Hong Kong, China
Date of event: 2019
Organising entity: Gordon Research Conferences
J.L. Vilas; H.D. Tagare; P. Conesa; R. Sánchez García; R. Melero; J. Otón; C. Messaoudi; A. Jiménez Moreno; M. Martínez; D. Maluenda; E. Ramírez Aportela; R. Marabini; J.M. Carazo; J. Vargas; C.O.S. Sorzano.



- 43** **Title of the work:** Advances in Scipion and Xmipp for Single Particle Analysis by CryoEM
Name of the conference: Gordon Research Conference Three Dimensional Electron Microscopy
City of event: Hong Kong, China
Date of event: 2019
Organising entity: Gordon Research Conferences
C.O.S. Sorzano; J.L. Vilas; P. Conesa; R. Sánchez García; R. Melero; A. Jiménez Moreno; L. Del Caño; Y. Fonseca; P. Horvarth; M. Martínez; D. Maluenda; E. Ramírez Aportela; R. Marabini; J.M. Carazo.
- 44** **Title of the work:** Algoritmos pronosticos de riesgo de mortalidad post-transplante hematopoyetico pediátrico
Name of the conference: XII Congreso de la Sociedad Española de Hematología y Oncología Pediátricas
Type of participation: Participatory - oral communication
City of event: Jerez de la Frontera, Spain
Date of event: 2019
Organising entity: Sociedad Española de Hematología y Oncología Pediátricas
B. Ruz Caracuel; A. Escudero López; C.O.S. Sorzano; A. Pérez Martínez.
- 45** **Title of the work:** LocalDeblur: An automatic map sharpening by restauration of local resolution
Name of the conference: Congress of the European Biophysical Societies' Association
City of event: Madrid, Spain
Date of event: 2019
Organising entity: European Biophysical Societies' Association
E. Ramírez Aportela; J.L. Vilas; C.O.S. Sorzano; J.M. Carazo.
- 46** **Title of the work:** 3DBIONOTES crossing genomics, proteomics and interactomics
Name of the conference: European Conf. on Computational Biology
Geographical area: European Union
Type of participation: 'Participatory - poster
City of event: Kallithea, Greece
Date of event: 2018
J. Segura; R. Sánchez García; C.O.S. Sorzano; J.M. Carazo.
- 47** **Title of the work:** 3DBIONOTES: crossing molecular biology
Name of the conference: Jornadas de Bioinformática
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Granada, Spain
Date of event: 2018
J. Segura; R. Sánchez García; C.O.S. Sorzano; J.M. Carazo.
- 48** **Title of the work:** A Vaccine Based on a Modified Vaccinia Virus Ankara Vector Expressing Zika Virus Structural Proteins Controls Zika Virus Replication in Mice
Name of the conference: Enable conference
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Copenhage, Denmark
Date of event: 2018
P. Pérez; M.Q. Marín; A. Lázaro Frías; N. Jiménez de Oya; A.B. Blázquez; E. Escribano Romero; C.O.S. Sorzano; J. Ortego; J.C. Saiz; M. Esteban; M.A. Martín Acebes; J. García Arriaza.



- 49** **Title of the work:** Deep consensus: deep learning for particle pruning in cryo-electron microscopy
Name of the conference: Jornadas de Bioinformática
Geographical area: National
Type of participation: Participatory - oral communication
City of event: Granada, Spain
Date of event: 2018
R. Sánchez García; J. Segura; D. Maluenda; C.O.S. Sorzano; J.M. Carazo.
- 50** **Title of the work:** Directional-local resolution, perspectives, and potential beyond the structural elucidation
Name of the conference: Gordon Research Conference on Three-dimensional Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Newport, RI, United States of America
Date of event: 2018
R. Marabini; J.L. Vilas; H. Tagare; J.M. Carazo; J. Vargas; C.O.S. Sorzano.
- 51** **Title of the work:** High-resolution reconstructions and local-directional resolution
Name of the conference: 3rd International Symposium on Cryo-3D Image Analysis
Geographical area: Non EU International
Type of participation: Participatory - invited/keynote talk
City of event: Lake Tahoe, United States of America
Date of event: 2018
C.O.S. Sorzano; J. Vargas; J.L. Vilas; A. Jiménez; J.M. Carazo.
- 52** **Title of the work:** Immunization with DNA-launched RNA Replicon and Poxvirus Vaccine Candidates Expressing HCV Proteins Induce Potent Immune Responses
Name of the conference: 25th International Symposium on Hepatitis C Virus and Related Viruses
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Dublín, Ireland
Date of event: 2018
M.Q. Marín; P. Pérez; C.O.S. Sorzano; K. Ljunberg; P. Liljestrom; C.E. Gómez; M. Esteban; J. García Arriaza.
- 53** **Title of the work:** Improving 3D reconstructions of macromolecular conformations
Name of the conference: 3rd International Symposium on Cryo-3D Image Analysis
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Lake Tahoe, United States of America
Date of event: 2018
M. Kazemi; C.O.S. Sorzano; J.M. Carazo; J. Vargas.
- 54** **Title of the work:** Predicting outcomes after pediatric stem cell transplantation for hematological malignancies: a decision-tree-based model
Name of the conference: 44th Annual Meeting of the European Soc. for Blood and Marrow Transplantation
Geographical area: European Union
Type of participation: 'Participatory - poster
City of event: Lisboa, Portugal
Date of event: 2018
A. Gómez López; Y. Mozo; B. Rosich del Cacho; D. Bueno; A. Escudero; I. Mirones; A. Fernández Arroyo; A. Sastre; C.O.S. Sorzano; A. Pérez Martínez.



- 55** **Title of the work:** Randomized cross-over nutritional trial of yogurts containing dietary-fiber and coffee cascara extract in healthy adults
Name of the conference: Nutrimad
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Madrid, Spain
Date of event: 2018
M. Iriondo DeHond; A. Iriondo DeHond; T. Herrero; C.O.S. Sorzano; E. Miguel; M.D. del Castillo.
- 56** **Title of the work:** 3DBionotes: Unifying genomics and molecular biology data
Name of the conference: Biotec
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Murcia, Spain
Date of event: 2017
J. Segura; R. Sánchez García; D. Tabas; C.O.S. Sorzano; J.M. Carazo.
- 57** **Title of the work:** A Practical Approach to Measuring Cultural Diversity on Australian Organizations and Schools
Name of the conference: 7th Intl. Conf. on Humanities, Society and Culture
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Bangkok, Thailand
Date of event: 2017
R. Moieni; P. Mousaferiadis; C.O.S. Sorzano.
- 58** **Title of the work:** Automatic calculation of Local Resolution with MonoRes: A new approach, its assessment and new applications
Name of the conference: 5th Joint Congress of the Portuguese and Spanish Microscopy Societies
Geographical area: European Union
Type of participation: 'Participatory - poster
City of event: Porto, Portugal
Date of event: 2017
J.M. Carazo; J.L. Vilas; J. Gómez Blanco; P. Conesa; R. Melero; J.M. de la Rosa Trevín; J. Otón; J. Cuenca; R. Marabini; J. Vargas; C.O.S. Sorzano.
- 59** **Title of the work:** Reconstructing macromolecular structures to quasi-atomic resolution with Scipion
Name of the conference: Protein Structure Determination in Industry
Geographical area: Non EU International
Type of participation: Participatory - invited/keynote talk
City of event: Versailles, France
Date of event: 2017
J.M. Carazo; J.L. Vilas; J. Vargas; C.O.S. Sorzano.
- 60** **Title of the work:** Residue-residue contact prediction based on a random forest multi-step approach
Name of the conference: Basel Computational Biology Conference
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Basilea, Switzerland
Date of event: 2017



R. Sánchez García; J. Segura; C.O.S. Sorzano; J.M. Carazo.

- 61** **Title of the work:** Machine learning-based method for residue-residue contact prediction
Name of the conference: XIII Symposium on Bioinformatics
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Valencia, Spain
Date of event: 2016
R. Sánchez García; J. Segura; J. Cuenca; C.O.S. Sorzano; J.M. Carazo.
- 62** **Title of the work:** Meta-analysis in rare diseases: getting the most from scarce microarray experiments
Name of the conference: XIII Symposium on Bioinformatics
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Valencia, Spain
Date of event: 2016
C.O.S. Sorzano; J.M. Carazo; A. Pascual Montano; M. Franch; M. Martínez.
- 63** **Title of the work:** Soft alignment validation in cryo-electron microscopy
Name of the conference: Cryo-EM Image Analysis Symposium
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Lake Tahoe, United States of America
Date of event: 2016
J. Vargas; C.O.S. Sorzano; J.M. Carazo.
- 64** **Title of the work:** StructMap: New way of looking at the discrete- versus continuous-flexibility problem in molecular electron microscopy
Name of the conference: Cryo-EM Image Analysis Symposium
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Lake Tahoe, United States of America
Date of event: 2016
C.O.S. Sorzano; A.L. Álvarez Cabrera; J.M. Carazo; S. Jonic.
- 65** **Title of the work:** Iterative Reconstruction for PET scanners with continuous detectors
Name of the conference: 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Milán, Italy
Date of event: 2015
A. Iriarte Ruiz; G. Caffarena; M. Fernández; R.G. Carmona; A. Otero; C.O.S. Sorzano; R. Marabini.
- 66** **Title of the work:** Robust construction of initial volumes
Name of the conference: Gordon Research Conference: Three-dimensional Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: New London, NH, United States of America
Date of event: 2015



C.O.S. Sorzano; J.M. de la Rosa Trevín; J. Otón; A.L. Álvarez Cabrera; J. Vargas; R. Marabini; J.M. Carazo.

- 67** **Title of the work:** StructMap: Multivariate distance analysis of elastically aligned electron microscopy structures for exploring pathways of conformational changes
Name of the conference: Gordon Research Conference: Three-dimensional Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: New London, NH, United States of America
Date of event: 2015
C.O.S. Sorzano; A.L. Álvarez Cabrera; J.M. Carazo; S. Jonic.
- 68** **Title of the work:** 2D and 3D alignment for Electron Microscopy via Graphics Processing Units.
Name of the conference: International Work-Conference on Bioinformatics and Biomedical Engineering, IWBBIO, 960
Type of event: Conference **Geographical area:** National
Type of participation: Participatory - oral communication
City of event: Granada, Andalusia, Spain
Date of event: 2014
E. García; M. Mateo; A. Deideri; C.O.S Sorzano; A. Iriarte; G. Caffarena.
- 69** **Title of the work:** Efficient initial volume determination using RANSAC algorithm
Name of the conference: Cryo-EM Image Analysis Symposium
Type of event: Conference **Geographical area:** Non EU International
Type of participation: Participatory - oral communication
City of event: Lake Tahoe, United States of America
Date of event: 2014
J. Vargas; R. Marabini; J.M. Carazo; C.O.S Sorzano.
- 70** **Title of the work:** HEMNMA: Hybrid Electron Microscopy Normal Mode Analysis to fully explore macromolecular dynamics
Name of the conference: Cryo-EM Image Analysis Symposium
Type of event: Conference **Geographical area:** Non EU International
Type of participation: Participatory - oral communication
City of event: Lake Tahoe, United States of America
Date of event: 2014
City organizing entity: United States of America
Q. Jin; C.O.S Sorzano; J.M. de la Rosa-Trevín; J.R. Bilbao-Castro; R. Núñez-Ramírez; O. Llorca; F. Tama; S. Jonic.
- 71** **Title of the work:** Outlier detection for single particle analysis in Electron Microscopy
Name of the conference: International Work-Conference on Bioinformatics and Biomedical Engineering
Type of event: Conference **Geographical area:** National
Type of participation: Participatory - oral communication
City of event: Granada, Andalusia, Spain
Date of event: 2014
City organizing entity: Granada, Andalusia, Spain
C.O.S. Sorzano; J. Vargas; J.M de la Rosa-Trevín; A. Zaldivar-Peraza; J. Otón; V. Abrishami; I Foche; R. Marabini; G. Gaffarena; J.M. Carazo. pp. 950.



- 72** **Title of the work:** 3D chemical mapping by EFTEM and XANES tomography using EFTEM-TomoJ
Name of the conference: 18th Intl. Microscopy Congress
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Praga, Czech Republic
Date of event: 2014
C. Messaoudi; N. Aschman; M. Cunha; T. Oikawa; C.O.S. Sorzano; J.J. Conesa; M. Chiappi; E. Pereiro; F.J. Chichón; J.L. Carrascosa; S. Marco.
- 73** **Title of the work:** Alignment of Direct Detector Device micrographs using a local least-squares approach
Name of the conference: 18th Intl. Microscopy Congress
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Praga, Czech Republic
Date of event: 2014
V. Abrishami; J. Vargas; R. Marabini; J.M. Carazo; C.O.S. Sorzano.
- 74** **Title of the work:** An image processing approach to the simulation of electron microscopy volumes and images of atomic structures
Name of the conference: IEEE Conference on Image Processing (ICIP2014)
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: París, France
Date of event: 2014
C.O.S. Sorzano; J. Vargas; J. Otón; V. Abrishami; J.M. de la Rosa Trevín; S. del Riego; A. Fernández Alderete; C. Martínez Rey; R. Marabini; J.M. Carazo. pp. 2095 - 2099.
- 75** **Title of the work:** CXCL2 and the actin cytoskeleton regulate CXCR4 lateral mobility and clustering
Name of the conference: SIICA - SSAI Joint Workshop on Imaging the Immune System
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Milán, Italy
Date of event: 2014
R. Barroso; C.O.S. Sorzano; J. Vargas; V. Rucha Perugini; J.L. Rodríguez Fernández; I. González; F. Sánchez Madrid; L. Martínez Muñoz; M. Mellado.
- 76** **Title of the work:** EFTEM-TomoJ : software for 3D chemical mapping by EFTEM and soft X-ray NEXAFS tomography
Name of the conference: 18th Intl. Microscopy Congress
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Praga, Czech Republic
Date of event: 2014
C. Messaoudi; N. Aschman; M. Cunha; T. Oikawa; C.O.S. Sorzano; J.J. Conesa; M. Chiappi; E. Pereiro; F.J. Chichón; J.L. Carrascosa; S. Marco.
- 77** **Title of the work:** Elastic image registration to fully explore macromolecular dynamics by electron microscopy
Name of the conference: IEEE Conference on Image Processing (ICIP2014)
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: París, France



Date of event: 2014

Q. Jin; C.O.S. Sorzano; I. Callebaut; F. Tama; S. Jonic. pp. 2075 - 2079.

78 Title of the work: Macromolecular dynamics by hybrid electron microscopy normal mode analysis

Name of the conference: Microscopy and Microanalysis

Geographical area: Non EU International

Type of participation: Participatory - oral communication

City of event: Hartford, CT, United States of America

Date of event: 2014

Q. Jin; C.O.S. Sorzano; J.M. de la Rosa Trevín; F. Tama; S. Jonic.

79 Title of the work: Preliminary analysis of the CTF challenge results

Name of the conference: Gordon Research Conference: Three-dimensional Electron Microscopy

Geographical area: Non EU International

Type of participation: Participatory - oral communication

City of event: Barcelona, Spain

Date of event: 2014

R. Marabini; J. Vargas; C.O.S. Sorzano; W. Jiang; K. Downing; W. Chiu; J.M. Carazo.

80 Title of the work: Computational estimation of microRNA targets and binding site frequencies

Name of the conference: Annual Intl. Conf. Intelligent Systems for Molecular Biology (ISMB)

Geographical area: Non EU International

Type of participation: Participatory - poster

City of event: Berlín, Germany

Date of event: 2013

D.J. Martínez Herrera; D. Tabas Madrid; C.O.S. Sorzano; A. Pascual Montano.

81 Title of the work: Integration of disparate sources of information to predict miRNA-mRNA interactions

Name of the conference: qPCR-NGS Symposium

Geographical area: Non EU International

Type of participation: Participatory - oral communication

City of event: Freising-Weihenstephan, Germany

Date of event: 2013

I. Muniategui; I. Sánchez Caballero; R. Nogales Cárdenas; C.O.S. Sorzano; A. Pascual Montano; A. Rubio.

82 Title of the work: Normal mode analysis for electron microscopy revitalized

Name of the conference: Gordon Research Conference: Microscopy at the frontiers of science

Geographical area: Non EU International

Type of participation: Participatory - poster

City of event: Boston, United States of America

Date of event: 2013

Q. Jin; C.O.S. Sorzano; J.M. de la Rosa Trevín; J.R. Bilbao Castro; R. Núñez Ramírez; O. Llorca; F. Tama; S. Jonic.

83 Title of the work: The use of the spiral phase transform in 3DEM

Name of the conference: Gordon Research Conference: Microscopy at the frontiers of science

Geographical area: Non EU International

Type of participation: Participatory - poster

City of event: Boston, United States of America

Date of event: 2013

J. Vargas; R. Marabini; J.M. de la Rosa Trevín; A. Zaldívar Peraza; J.M. Carazo; C.O.S. Sorzano.



- 84** **Title of the work:** Three-dimensional reconstruction in Soft X-ray Tomography
Name of the conference: Annual Meeting of the Nordic Microscopy Society
Geographical area: National
Type of participation: Participatory - invited/keynote talk
City of event: Copenhagen, Denmark
Date of event: 2013
J. Otón; C.O.S. Sorzano; R. Marabini; J.M. Carazo.
- 85** **Title of the work:** Benchmarking and Standardization for 3D Electron Microscopy
Name of the conference: Gordon Research Conference on Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Les Diablerets, Switzerland
Date of event: 2012
R. Marabini; A. Quintana; C.O.S. Sorzano; J.M. Carazo.
- 86** **Title of the work:** Controlled experiment for evaluation of statistical models for data analysis in Metabolomics
Name of the conference: XII Reunión Científica de la Sociedad Española de Técnicas de Cromatografía y Afines (SECYTA)
Geographical area: National
Type of participation: Participatory - oral communication
City of event: Tarragona, Spain
Date of event: 2012
T.O. Mendes; C.O.S. Sorzano; S. Angulo; M.J.V. Bell; F.J. Rupérez; C. Barbas.
- 87** **Title of the work:** Image processing for Cellular tomography using soft X-rays
Name of the conference: 9th Intl. Symposium on Biomedical Imaging
Geographical area: Non EU International
Type of participation: Participatory - invited/keynote talk
City of event: Barcelona, Spain
Date of event: 2012
C.O.S. Sorzano; J. Otón; J. Cuenca; A Zaldívar Pérez; G. Caffarena; J. Sánchez Jiménez; C. Messaoudi; S. Marco; R. Marabini; J.M. Carazo.
- 88** **Title of the work:** Improving EFTEM 3D Chemical maps by multivariant statistical analysis and iterative denoising
Name of the conference: European Microscopy Congress
Geographical area: European Union
Type of participation: Participatory - oral communication
City of event: Manchester, United Kingdom
Date of event: 2012
C. Messaoudi; N. Aschman; M.M. Lyra da Cunha; T. Oikawa; C.O.S. Sorzano; S. Marco.
- 89** **Title of the work:** Improving microRNA target prediction by performance-based algorithm combination
Name of the conference: Jornadas de Bioinformática
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Barcelona, Spain
Date of event: 2012



I. Sánchez Caballero; A. Muniategui; R. Nogales Cadenas; C.O.S. Sorzano; A. Rubio; A. Pascual Montano.

- 90** **Title of the work:** Java-C++ hybrid image processing using ImageJ: an example in electron and X-rays tomography Xmipp-TomoJ
Name of the conference: Bioimage Analysis Workshop
Geographical area: Non EU International
Type of participation: Participatory - invited/keynote talk
City of event: Barcelona, Spain
Date of event: 2012
C.O.S. Sorzano; J. Cuenca; J. Sánchez Jiménez; C. Messaoudi; J.M. Carazo.
- 91** **Title of the work:** Quaternary structural flexibility of VirE2 is intrinsic and functionally relevant in DNA transfer by *A. tumefaciens*
Name of the conference: Meeting of the Israel Soc. for Microscopy
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Beer Sheva, Israel
Date of event: 2012
T. Bharat; S.G. Wolf; D. Zbaida; C.O.S. Sorzano; M. Eisenstein; M. Elbaum.
- 92** **Title of the work:** Scipion: Towards electron microscopy integration
Name of the conference: Jornadas de Bioinformática
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Barcelona, Spain
Date of event: 2012
A. Quintana; J. Vargas; A. Poza; J.R. Macías; R. Marabini; C.O.S. Sorzano; J.M. Carazo.
- 93** **Title of the work:** Three-dimensional Electron Microscopy: Current challenges
Name of the conference: Workshop on BioNMR
Geographical area: European Union
Type of participation: Participatory - invited/keynote talk
City of event: Florencia, Italy
Date of event: 2012
C.O.S. Sorzano; R. Marabini; J.M. Carazo.
- 94** **Title of the work:** Xmipp 3.0: Advances in image processing for 3D Electron Microscopy of Single
Name of the conference: Gordon Research Conference on Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Les Diablerets, Switzerland
Date of event: 2012
J.M. de la Rosa Trevín; R. Marabini; J. Otón; A. Zaldívar Peraza; J. Vargas; J.M. Carazo; C.O.S. Sorzano.
- 95** **Title of the work:** A candidate HIV/AIDS vaccine (MVA-B) that enhances the magnitude and polyfunctionality of memory HIV-1-specific T-cell responses
Name of the conference: AIDS Vaccine
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Bangkok, Thailand
Date of event: 2011



J. García Arriaza; J.L. Nájera; C.E. Gómez; N. Tewabe; C.O.S. Sorzano; T. Calandra; T. Roger; M. Esteban.

- 96** **Title of the work:** A recombinant Vaccinia virus-based T cell vaccine against influenza virus reduces lung viral load upon virus challenge
Name of the conference: Gene and Cell Therapy Conference
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Seattle, WA, United States of America
Date of event: 2011
A.G. Goodman; S. Guerra; A. Vijayan; P.P. Heinen; C.O.S. Sorzano; M. Esteban.
- 97** **Title of the work:** Acceleration of Electron Microscopy applications with GPGPUs and FPGAs
Name of the conference: XI Jornadas de Computación Reconfigurable y Aplicaciones
Geographical area: National
Type of participation: Participatory - oral communication
City of event: Tenerife, Spain
Date of event: 2011
A. Deideri; G. Caffarena; J.A. López; C.O.S. Sorzano.
- 98** **Title of the work:** X-ray Cellular Tomography: How the images are formed and how the volumes should be reconstructed
Name of the conference: 2nd Microscopy Congress of the Portuguese and Spanish Societies
Geographical area: European Union
Type of participation: Participatory - oral communication
City of event: Lisboa, Portugal
Date of event: 2011
R. Marabini; J. Otón; C.O.S. Sorzano; J.M. Carazo.
- 99** **Title of the work:** X-ray Cellular Tomography: How the images are formed and how the volumes should be reconstructed
Name of the conference: EMBL 6th Intl. Congress on Electron Tomography
Geographical area: European Union
Type of participation: Participatory - oral communication
City of event: Heidelberg, Germany
Date of event: 2011
J. Otón; R. Marabini; C.O.S. Sorzano; J.M. Carazo.
- 100** **Title of the work:** Xmipp 3.0: a specialized suite for image processing in microscopy
Name of the conference: 2nd Microscopy Congress of the Portuguese and Spanish Societies
Geographical area: European Union
Type of participation: Participatory - oral communication
City of event: Lisboa, Portugal
Date of event: 2011
R. Marabini; J.M. de la Rosa Trevín; J. Cuenca; A.E. Rey; J. Vega; J. Otón; C.O.S. Sorzano; J.M. Carazo.
- 101** **Title of the work:** Benchmarking for 3D Electron Microscopy
Name of the conference: X Jornadas de Bioinformática
Geographical area: National
Type of participation: Participatory - oral communication
City of event: Málaga, Spain



Date of event: 2010

A. Quintana; C.O.S. Sorzano; R. Marabini; J.M. Carazo.

- 102 Title of the work:** Electric-potential reconstructions of single particles using L2-gradient flows
Name of the conference: 3rd Intl. Conf. on BioMedical Engineering and Informatics
Geographical area: Non EU International
Type of participation: Participatory - oral communication
Date of event: 2010
City organizing entity: Yantai, China
L. Ming; G. Xu; C.O.S. Sorzano; C. Bajaj.
- 103 Title of the work:** First considerations on the reconstruction of X-ray tomography
Name of the conference: Intl. Microscopy Congress
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Río de Janeiro, Brazil
Date of event: 2010
J. Otón; C.O.S. Sorzano; J.M. Carazo; R. Marabini.
- 104 Title of the work:** Limitations in 3D reconstruction of X-ray tomography
Name of the conference: Intl. Microscopy Congress
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Río de Janeiro, Brazil
Date of event: 2010
J. Otón; R. Marabini; C.O.S. Sorzano; J.M. Carazo.
- 105 Title of the work:** Structural analysis of the Mouse MCM4/6/7 helicase in complex with Cdt1
Name of the conference: Congreso de la Soc. Española Bioquímica y Biología Molecular
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Córdoba, Spain
Date of event: 2010
A.L. Álvarez Cabrera; C.O.S. Sorzano; J. Busselez; R. González; Z. You; J.M. Carazo.
- 106 Title of the work:** Understanding the dynamics of macromolecular machines by Three-Dimensional Electron Microscopy: The methods and some of their applications
Name of the conference: Annual meeting of the Nordic Microscopy Society Scandem
Geographical area: European Union
Type of participation: Participatory - oral communication
City of event: Estocolmo, Sweden
Date of event: 2010
J.M. Carazo; S.H.W. Scheres; C.O.S. Sorzano.
- 107 Title of the work:** X-ray tomography: an image formation model
Name of the conference: Annual meeting of the Nordic Microscopy Society Scandem
Geographical area: European Union
Type of participation: Participatory - oral communication
City of event: Estocolmo, Sweden
Date of event: 2010
R. Marabini; J. Otón; R. Navarro; C.O.S. Sorzano; J.M. Carazo.



- 108** **Title of the work:** A hybrid method coupling normal mode analysis with projection matching to study structural flexibility of macromolecular assemblies
Name of the conference: 11th Congress of the French Society of Microscopies
Geographical area: National
Type of participation: Participatory - poster
City of event: France
Date of event: 2009
S. Jonic; C.O.S. Sorzano; F. Tama; E. Larquet; N. Boisset.
- 109** **Title of the work:** Clustering of biomedical scientific papers
Name of the conference: IEEE Workshop on Intelligent Signal Processing
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Budapest, Hungary
Date of event: 2009
D. Bravo Alcobendas; C.O.S. Sorzano.
- 110** **Title of the work:** Effects of the downsampling scheme on three-dimensional electron microscopy of single particles
Name of the conference: IEEE Workshop on Intelligent Signal Processing
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Budapest, Hungary
Date of event: 2009
C.O.S. Sorzano; A. Iriarte Ruiz; R. Marabini; J.M. Carazo.
- 111** **Title of the work:** Registration of electron tomography single-axis tilt series without fiducial markers
Name of the conference: Joint Spanish Portuguese Microscopy Congress
Geographical area: European Union
Type of participation: Participatory - oral communication
City of event: Segovia, Spain
Date of event: 2009
C.O.S. Sorzano; C. Messaoudi; M. Eibauer; R. Hegerl; R. Marabini; S. Nickell; S. Marco; J.M. Carazo. pp. 215 - 216.
- 112** **Title of the work:** Understanding the dynamics of macromolecular machines by Three-Dimensional Electron Microscopy: The methods and some of their applications
Name of the conference: Critical Assessment of Predicted Interactions
Geographical area: Non EU International
Type of participation: Participatory - invited/keynote talk
City of event: Barcelona, Spain
Date of event: 2009
J.M. Carazo; S.H.W. Scheres; C.O.S. Sorzano.
- 113** **Title of the work:** A Fuzzy Constraint Satisfaction Approach to Identify and Characterize Apnea Episodes
Name of the conference: 2nd Intl. Conference in Bioinformatics and Biomedical Engineering
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Shanghai, China
Date of event: 2008



A. Otero; C.O.S. Sorzano; E. Olmos; P. Félix; M.R. Álvarez; C. Zamarrón. pp. 2024 - 2027.

- 114** **Title of the work:** A hybrid method coupling normal mode analysis with projection matching to study structural flexibility of macromolecular assemblies
Name of the conference: Gordon Research Conference on Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Italy
Date of event: 2008
S. Jonic; C.O.S. Sorzano; F. Tama; E. Larquet; N. Boisset.
- 115** **Title of the work:** Flexible fitting of protein models into 3D-EM maps by using an image registration algorithm
Name of the conference: International Symposium on Structural Analysis of Supramolecular Assemblies by Hybrid Methods
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Lake Tahoe, United States of America
Date of event: 2008
L. Fernández de Manuel; M.J. Ledesma Carbayo; J. Atienza Herrero; C.O.S. Sorzano; J.M. Carazo; A. Santos.
- 116** **Title of the work:** Flexible image registration for the identification of best fitted protein models in 3D-EM maps
Name of the conference: Intl. Syposium on Biomedical Imaging
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: París, France
Date of event: 2008
L. Fernández de Manuel; M.J. Ledesma Carbayo; J. Atienza Herrero; C.O.S. Sorzano; J.M. Carazo; A. Santos. pp. 983 - 986.
- 117** **Title of the work:** Neural networks for glucose prediction in continuous glucose monitoring
Name of the conference: Advanced Technologies and treatments of diabetes Conference
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Praga, Czech Republic
Date of event: 2008
C. Pérez Gandía; M.E. Hernando; C.O.S. Sorzano; A. Otero; G. García Sáez; A. Rodríguez Herrero; B.M. Rigla; A. de Leiva; E.J. Gómez.
- 118** **Title of the work:** bUnwarpJ: Consistent and elastic registration in ImageJ. Methods and applications
Name of the conference: ImageJ Conference Users-Developers
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Austria
Date of event: 2008
I. Arganda Carreras; C.O.S. Sorzano; J. Kybic; C. Ortiz de Solórzano.



- 119** **Title of the work:** 3D reconstruction of macromolecular assemblies at subnanometric resolution
Name of the conference: 3rd. Serbian congress of microscopy
Geographical area: National
Type of participation: Participatory - invited/keynote talk
City of event: Belgrado, Serbia
Date of event: 2007
M. Cottevielle; S. Jonic; C.O.S. Sorzano; E. Larquet; N. Boisset.
- 120** **Title of the work:** 3D transmission electron microscopy of biological nanomachines
Name of the conference: 3rd. Serbian congress of microscopy
Geographical area: National
Type of participation: Participatory - invited/keynote talk
City of event: Belgrado, Serbia
Date of event: 2007
S. Jonic; C.O.S. Sorzano; N. Boisset.
- 121** **Title of the work:** Algoritmos estructurales basados en lógica borrosa para la identificación de apneas e hipoapneas
Name of the conference: Congreso Anual de la Sociedad Ingeniería Biomédica (CASEIB)
Geographical area: National
Type of participation: Participatory - oral communication
City of event: Cartagena, Spain
Date of event: 2007
A. Otero; P. Félix; J.M. Rodríguez; C. Zamarrón; C. Pérez Gandía; C.O.S. Sorzano.
- 122** **Title of the work:** Enhanced diffractograms for image sorting and improvement of robustness and accuracy of CTF estimation: Application on high-resolution reconstruction of glutamate synthase and phosphorilase kinase
Name of the conference: Gordon Research Conference on Electron Microscopy
Geographical area: Non EU International
Type of participation: Participatory - poster
City of event: New London, NH, United States of America
Date of event: 2007
S. Jonic; C.O.S. Sorzano; M. Cottevielle; E. Larquet; C. Venien-Bryan; N. Boisset.
- 123** **Title of the work:** Intelligent alarms for patient supervision
Name of the conference: 5th Intl. Syposium on Intelligent Signal Processing, WISP
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Madrid, Spain
Date of event: 2007
A. Otero; P. Félix; F. Palacios; C. Pérez Gandía; C.O.S. Sorzano. pp. 157 - 162.
- 124** **Title of the work:** Mathematical models in image processing
Name of the conference: 1st. Intl Congreso of Mathematics in Engineering and Architecture
Geographical area: Non EU International
Type of participation: Participatory - invited/keynote talk
City of event: Madrid, Spain
Date of event: 2007
C.O.S. Sorzano; M.C. Pérez Gandía; A. Otero.



- 125** **Title of the work:** Consistent and elastic registration of histological sections using vector-spline regularization
Name of the conference: 2nd Intl. Workshop on Computer Vision Approaches to Medical Image Analysis, CVAMIA2006
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Graz, Austria
Date of event: 2006
I. Arganda Carreras; C.O.S. Sorzano; R. Marabini; J.M. Carazo; C. Ortiz-de-Solórzano; J. Kybic.
- 126** **Title of the work:** Elastic image registration with applications to Proteomics
Name of the conference: Vth Intl. Workshop on Information Optics
Geographical area: Non EU International
Type of participation: Participatory - invited/keynote talk
City of event: Toledo, Spain
Date of event: 2006
C.O.S. Sorzano; P. Thévenaz; I. Valdés; A. Beloso; M. Unser. pp. 300 - 309.
- 127** **Title of the work:** Evaluation of multiple-axis tomography in Tomo-J, a freeware plugin for the Java based public software ImageJ
Name of the conference: Conf. On ImageJ
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Luxemburgo, Luxembourg
Date of event: 2006
C. Messaoudi; S. Marco; C.O.S. Sorzano; T. Boudier.
- 128** **Title of the work:** Improvement of visibility of diffraction rings for classification of micrographs and their local areas
Name of the conference: Gordon Research Conference on Electron Microscopy
Geographical area: Non EU International
Type of participation: Participatory - poster
City of event: Il Ciocco, Italy
Date of event: 2006
S. Jonic; C.O.S. Sorzano; M. Cottevaille; E. Larquet; N. Boisset.
- 129** **Title of the work:** Molecular image registration using mutual information and differential evolution optimization
Name of the conference: IEEE International Symposium on Biomedical Imaging
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Washington, United States of America
Date of event: 2006
B. Telenczuk; M.J. Ledesma Carbayo; J.A. Velázquez Muriel; C.O.S. Sorzano; J.M. Carazo; A. Santos.
- 130** **Title of the work:** Nouvelle approche de visualisation et tri des diffractogrammes de cryo-MET basé sur l'anisotropie
Name of the conference: 20th Conference of the French Biophysical Society
Geographical area: National
Type of participation: Participatory - oral communication
City of event: Anglet, France



Date of event: 2006

S. Jonic; C.O.S. Sorzano; M. Cottevieille; E. Larquet; N. Boisset. pp. 171.

- 131 Title of the work:** Probabilidad de detección en cámaras PET de detectores continuos
Name of the conference: Congreso Anual de la Sociedad Española de Ingeniería Biomédica, CASEIB
Geographical area: National
Type of participation: 'Participatory - poster
City of event: Pamplona, Spain
Date of event: 2006
A. Iriarte Ruiz; R. Marabini; C.O.S. Sorzano.
- 132 Title of the work:** TomoJ: new tools for electron tomography
Name of the conference: Intl. Microscopy Congress
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Sapporo, Japan
Date of event: 2006
C. Messaoudi; S. Halary; S. Marco; C.O.S. Sorzano; T. Boudier.
- 133 Title of the work:** A Software System for Automatic Generation of Ontology Mappings
Name of the conference: Workshop on Building and Applying Ontologies for the Semantic Web
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Lisboa, Portugal
Date of event: 2005
A. Sánchez Alberca; R. García García; C.O.S. Sorzano; C. Gutiérrez Cossío; M. Chagoyen; M. Fernández López.
- 134 Title of the work:** Grid computing in 3D Electron Microscopy Image Processing using Xmipp
Name of the conference: 18th IEEE Intl. Symposium on Computer-Based Medical Systems (CBMS)
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Dublín, Ireland
Date of event: 2005
S.H.W. Scheres; A.J. Merino; C.O.S. Sorzano; J.M. Carazo.
- 135 Title of the work:** Maximum-likelihood refinement of electron microscopy images
Name of the conference: Gordon Research Conference on Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: New London, NH, United States of America
Date of event: 2005
S.H.W. Scheres; R. Marabini; C.O.S. Sorzano; G.T. Herman; J.M. Carazo.
- 136 Title of the work:** Metodología de evaluación de modelos de predicción de glucemia en pacientes diabéticos basados en redes neuronales
Name of the conference: Congreso Anual de la Sociedad Española de Ingeniería Biomédica, CASEIB2005
Geographical area: National
Type of participation: Participatory - oral communication
City of event: Madrid, Spain
Date of event: 2005



C. Pérez Gandía; G. García Sanz; A. Rodríguez Herrero; M.E. Hernández Pérez; C.O.S. Sorzano; E.J. Gómez Aguilera; F. del Pozo Guerrero; C.O.S. Sorzano.

- 137** **Title of the work:** Note on "Wavelets, Gaussian mixtures and Wiener filtering"
Name of the conference: Congreso Anual de la Sociedad Española de Ingeniería Biomédica, CASEIB2005
Geographical area: National
Type of participation: Participatory - oral communication
City of event: Madrid, Spain
Date of event: 2005
C.O.S. Sorzano; J. Rodrigo; E. Ortiz; M. López.
- 138** **Title of the work:** Relating discrete annotation schemes in the functional space through literature analysis
Name of the conference: Intl. Conf. on Intelligent Systems for Molecular Biology (ISMB)
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Michigan, United States of America
Date of event: 2005
M. Chagoyen; C.O.S. Sorzano; P. Carmona Sáez; J.M. Carazo; A. Pascual Montano.
- 139** **Title of the work:** Skeleton-based 3D reconstruction of histological sections
Name of the conference: 9th Intl. Conf. on Information Visualization
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Londres, United Kingdom
Date of event: 2005
I. Arganda Carreras; C.O.S. Sorzano; R. Marabini; J.M. Carazo; C. Ortiz-de-Solórzano.
- 140** **Title of the work:** Spline-Based approach to orientation assignment for three-dimensional electron microscopy
Name of the conference: Imaging for medical and life sciences Symposium (Imvie2)
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Estrasburgo, France
Date of event: 2005
S. Jonic; C.O.S. Sorzano; P. Thévenaz; M. Unser; N. Boisset. 1, pp. 40 - 42.
- 141** **Title of the work:** Algorithm for spline-based elastic registration in application to confocal images of gene expression
Name of the conference: 7th Intl. Conference on Pattern Recognition and Image Analysis
Geographical area: Non EU International
City of event: San Petersburgo, Russia
Date of event: 2004
C.O.S. Sorzano; M. Blagov; P. Thévenaz; E Myasnikova; M. Samsonova; M. Unser. 3, pp. 928 - 931.
- 142** **Title of the work:** Framework for automatic generation of ontology mappings
Name of the conference: Jornadas Iberoamericanas de Ingeniería del Software e Ingeniería del Conocimiento
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Madrid, Spain
Date of event: 2004



G. Cañadas; M. Fernández López; R. García García; M. Lama; A. Sánchez Alberca; C.O.S. Sorzano.

- 143 Title of the work:** Volumetric Spectral Signal-to-Noise Ratio
Name of the conference: 13th European Microscopy Congress
Type of participation: Participatory - oral communication
City of event: Amberes, Belgium
Date of event: 2004
C.O.S. Sorzano; P. Thévenaz; S. Jonic; C. El-Bez; S. De Carlo; J. Conway; B.L. Trus; M. Unser. I, pp. 427 - 428.
- 144 Title of the work:** Algebraic reconstruction of 2D crystals from their projections
Name of the conference: RMSE-AMS joint conference
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Sevilla, Spain
Date of event: 2003
J.M. Carazo; J.J. Fernández; G.T. Herman; S. Matej; R. Marabini; C.O.S. Sorzano.
- 145 Title of the work:** Angular assignment in 3D Electron Microscopy using PCA and wavelet decomposition
Name of the conference: RMSE-AMS joint conference
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Sevilla, Spain
Date of event: 2003
C.O.S. Sorzano.
- 146 Title of the work:** Reconstruction by Chahine's method from Projections corrupted by Electron Microscope aberrations
Name of the conference: RMSE-AMS joint conference
Geographical area: Non EU International
Type of participation: Participatory - oral communication
City of event: Sevilla, Spain
Date of event: 2003
G.T. Herman; R. Marabini; C.O.S. Sorzano; J. Zubelli.
- 147 Title of the work:** 2D ARMA models and parameter adjustment to estimate the CTF of the electron microscope
Name of the conference: 15th International Congress on Electron Microscopy
Geographical area: Non EU International
Type of participation: Participatory - poster
City of event: Durban, South African Republic
Date of event: 2002
J.A. Velázquez Muriel; C.O.S. Sorzano; J.J. Fernández; J.M. Carazo. 3, pp. 433 - 434.
- 148 Title of the work:** 3D Reconstruction of 2D crystals from projections in real space
Name of the conference: 1st. International Symposium on Biomedical Imaging
Geographical area: Non EU International
Type of participation: Participatory - poster
City of event: Washington, United States of America
Date of event: 2002
R. Marabini; C.O.S. Sorzano; J.J. Fernández; S. Matej; J.M. Carazo; G.T. Herman. pp. 689 - 692.



- 149** **Title of the work:** New reconstruction conditions greatly improve the reconstruction quality
Name of the conference: 15th International Congress on Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Durban, South African Republic
Date of event: 2002
C.O.S. Sorzano; R. Marabini; J.J. Fernández; J.A. Velázquez Muriel; G.T. Herman; J.M. Carazo. 3, pp. 431 - 432.
- 150** **Title of the work:** Structural studies of SV40 large T-antigen on the origin of replication
Name of the conference: 15th International Congress on Electron Microscopy
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Durban, South African Republic
Date of event: 2002
M.G. Gómez Lorenzo; M. Valle; L.E. Donate; C. Gruss; M. Bárcena; C.O.S. Sorzano; J. Frank; J.M. Carazo. 2,
- 151** **Title of the work:** Volumetric constraints in 3D tomography applied to electron microscopy
Name of the conference: 1st. International Symposium on Biomedical Imaging
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Washington, United States of America
Date of event: 2002
C.O.S. Sorzano; R. Marabini; G.T. Herman; J.M. Carazo. pp. 641 - 644.
- 152** **Title of the work:** Method development of combination of atomic force and electron microscopy data to obtain better 3D reconstructions
Name of the conference: Spanish, Portuguese and French Microscopy Societies meeting
Geographical area: European Union
Type of participation: 'Participatory - poster
City of event: Barcelona, Spain
Date of event: 2001
J.A. Velázquez Muriel; C.O.S. Sorzano; J.M. Carazo.
- 153** **Title of the work:** Transfer function restoration in 3D electron microscopy via iterative data refinement
Name of the conference: International meeting on fully 3D image reconstruction in Radiology and Nuclear Medicine
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Monterrey, United States of America
Date of event: 2001
C.O.S. Sorzano; J.J. Fernández; R. Marabini; G.T. Herman; Y. Censor; J.M. Carazo. pp. 133 - 136.
- 154** **Title of the work:** Towards more quantitative results from Three Dimensional Electron Microscopy of Macromolecules
Name of the conference: 12th European Congress on Electron Microscopy
Geographical area: European Union
City of event: Brno, Czech Republic
Date of event: 2000



J.M. Carazo; N. Jiménez Lozano; C.O.S. Sorzano; M. Chagoyen. III, pp. 375 - 377.

- 155** **Title of the work:** Quantitative comparison of 3D reconstruction algorithms under conditions of uneven angular distribution in electron microscopy
Name of the conference: International meeting on fully 3D image reconstruction in Radiology and Nuclear Medicine
Geographical area: Non EU International
Type of participation: 'Participatory - poster
City of event: Egmond aan Zee, Holland
Date of event: 1999
C.O.S. Sorzano; R. Marabini; N. Boisset; E. Rietzel; R.R. Schröder; G.T. Herman; J.M. Carazo. pp. 267 - 270. 1999.
- 156** **Title of the work:** Effects of uneven sampling in 3D reconstructions
Name of the conference: 14th International Congress on Electron Microscopy
Type of event: Conference **Geographical area:** Non EU International
Type of participation: 'Participatory - poster
City of event: Cancún, Mexico
Date of event: 1998
Publication in conference proceedings: Yes
C.O.S. Sorzano; R. Marabini; J.M. Carazo; E. Rietzel; R. Schroder; G.T. Herman; N. Boisset. I, pp. 771 - 772. 1998.
- 157** **Title of the work:** Zero-loss P-contrast in EFTEM
Name of the conference: 14th International Congress on Electron Microscopy
Type of event: Conference **Geographical area:** Non EU International
Type of participation: 'Participatory - poster
City of event: Cancún, Mexico
Date of event: 1998
Publication in conference proceedings: Yes
C.O.S. Sorzano; R. Marabini; J.M. Carazo; E. Rietzel; R. Schroder; G.T. Herman; N. Boisset. IV, pp. 421 - 422. 1998.
- 158** **Title of the work:** Scipion-Chem: a traversal tool for the development of antiviral drugs
Name of the conference: Congreso de la PTI Salud Global
Corresponding author: Yes
City of event: Valencia, Spain
del Hoyo; Ulzurrun; Campillo; Sorzano.



R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

- 1** **Committee title:** FELASA Working Group on Experimental Design in Education and Training
Affiliation entity: Federation of European Laboratory Animal Science Associations
Start date: 2020
- 2** **Committee title:** Animal Experimentation Ethical Committee
Affiliation entity: Centro Nac. Biotecnología (CSIC)
Start date: 2011

Evaluation and revision of R&D projects and articles

- 1** **Performed tasks:** Evaluador Juan de la Cierva
Entity where activity was carried out: Ministerio de Economía y Competitividad
City of entity: Spain
Start-End date: 2016 - 2016
- 2** **Name of the activity:** Panel for Medicine and Health 2023
Performed tasks: Project evaluator
Entity where activity was carried out: Swedish Research Council
City of entity: Sweden
Start date: 2022
- 3** **Performed tasks:** Evaluador de proyectos
Entity where activity was carried out: ANEP
Start date: 2006

Other achievements

Stays in public or private R&D centres

- 1** **Entity:** Laboratorio de Mineralogía y Cristalografía **Type of entity:** University
Faculty, institute or centre: Univ. Pierre et Marie Curie, Paris VI
City of entity: París, France
Start date: 2013 **Duration:** 14 days
Goals of the stay: Guest
- 2** **Entity:** Institute Computational Mathematics and Scientific Computing **Type of entity:** Public Research Body
Faculty, institute or centre: Chinese Academy Sciences
City of entity: Pekín, China
Start date: 2012 **Duration:** 14 days
Goals of the stay: Guest



- 3** **Entity:** Laboratorio de Mineralogía y Cristalografía **Type of entity:** University
Faculty, institute or centre: Univ. Pierre et Marie Curie, Paris VI
City of entity: París, France
Start date: 2010 **Duration:** 14 days
Goals of the stay: Guest
- 4** **Entity:** Scripps Institute **Type of entity:** Foundation
City of entity: San Diego, United States of America
Start date: 2009 **Duration:** 1 month
Goals of the stay: Guest
- 5** **Entity:** Institute Computational Mathematics and Scientific Computing **Type of entity:** Public Research Body
Faculty, institute or centre: Chinese Academy Sciences
City of entity: Pekín, China
Start date: 2009 **Duration:** 1 month
Goals of the stay: Guest
- 6** **Entity:** Laboratorio de Mineralogía y Cristalografía **Type of entity:** University
Faculty, institute or centre: Univ. Pierre et Marie Curie, Paris VI
City of entity: París, France
Start date: 2008 **Duration:** 14 days
Goals of the stay: Guest
- 7** **Entity:** Laboratorio de Imagen Integrativa **Type of entity:** Foundation
Faculty, institute or centre: Institute Curie
City of entity: París, France
Start date: 2008 **Duration:** 7 days
Goals of the stay: Guest
- 8** **Entity:** Laboratorio de Mineralogía y Cristalografía **Type of entity:** University
Faculty, institute or centre: Univ. Pierre et Marie Curie, Paris VI
City of entity: París, France
Start date: 2007 **Duration:** 14 days
Goals of the stay: Guest
- 9** **Entity:** Imperial College London **Type of entity:** University
City of entity: Londres, United Kingdom
Start date: 2007 **Duration:** 7 days
Goals of the stay: Guest
- 10** **Entity:** Laboratorio de Imagen Integrativa **Type of entity:** Foundation
Faculty, institute or centre: Institute Curie
City of entity: París, France
Start date: 2007 **Duration:** 14 days
Goals of the stay: Guest
- 11** **Entity:** Max-Planck Institute of Biochemistry **Type of entity:** Public Research Body
City of entity: Martinsried, Germany
Start date: 2007 **Duration:** 14 days
Goals of the stay: Guest



- 12** **Entity:** National Center for X-ray Tomography **Type of entity:** Public Research Body
Faculty, institute or centre: Lawrence Berkeley Nacional Laboratory
City of entity: Berkeley, United States of America
Start date: 2006 **Duration:** 1 month
Goals of the stay: Post-doctoral
- 13** **Entity:** Laboratorio de Mineralogía y Cristalografía **Type of entity:** University
Faculty, institute or centre: Univ. Pierre et Marie Curie, Paris VI
City of entity: París, France
Start date: 2005 **Duration:** 2 months
Goals of the stay: Guest
- 14** **Entity:** Laboratorio de Imagen Integrativa **Type of entity:** Foundation
Faculty, institute or centre: Institute Curie
City of entity: París, France
Start date: 2005 **Duration:** 2 months
Goals of the stay: Guest
- 15** **Entity:** Biomedical Imaging Group
City of entity: Lausanne, Switzerland
Start date: 2003 **Duration:** 11 months
Goals of the stay: Post-doctoral
- 16** **Entity:** Discrete Imaging Group **Type of entity:** University
Faculty, institute or centre: City University of New York
City of entity: New York, United States of America
Start date: 2002 **Duration:** 2 months
Goals of the stay: Post-doctoral
- 17** **Entity:** Center of Computer Science and Applied Mathematics **Type of entity:** University
Faculty, institute or centre: Univ. Temple
City of entity: Philadelphia, United States of America
Start date: 2000 **Duration:** 2 months
Goals of the stay: Doctorate
- 18** **Entity:** Medical Imaging Processing Group (MIPG) **Type of entity:** University
Faculty, institute or centre: Univ. Pennsylvania
City of entity: Philadelphia, United States of America
Start date: 1999 **Duration:** 1 month
Goals of the stay: Doctorate
- 19** **Entity:** Max-Planck Institute of Biophysics **Type of entity:** Public Research Body
City of entity: Frankfurt, Germany
Start date: 1998 **Duration:** 21 days
Goals of the stay: Doctorate



Scientific societies and professional associations

- 1 Name of the society:** European Microscopy Society
Start date: 2004
- 2 Name of the society:** Sociedad Española de Microscopía
Start date: 2004
- 3 Name of the society:** Institute of Electrical and Electronics Engineers
Start date: 2002

Editorial councils

- 1 Name of the editorial council:** Biological Imaging
Affiliation entity: Cambridge Press Journal
Start date: 2021
- 2 Name of the editorial council:** IEEE Bio Imaging and Signal Processing Technical Committee
Affiliation entity: IEEE
Start date: 2019
Type of entity: Associations and Groups
Duration: 2 years
- 3 Name of the editorial council:** IEEE Bio Imaging and Signal Processing Technical Committee
Affiliation entity: IEEE
Start date: 2013
Type of entity: Associations and Groups
Duration: 2 years
- 4 Name of the editorial council:** BMC Structural Biology
Affiliation entity: BMC
Start date: 2011
Type of entity: Editorial
Duration: 7 years
- 5 Name of the editorial council:** IEEE Signal Processing Magazine
Affiliation entity: IEEE
Start date: 2011
Type of entity: Associations and Groups
Duration: 2 years

Prizes, mentions and distinctions

Description: Premio Ángel Herrera de Investigación
Awarding entity: Universidad San Pablo CEU
Conferral date: 2005



Obtained accreditations/recognitions

- 1** **Description:** Investigador Científico
Accrediting entity: Consejo Superior de Investigaciones Científicas
Date of recognition: 2022
Type of entity: State agency
- 2** **Description:** Acreditación Catedrático de Universidad
Accrediting entity: ANECA
Date of recognition: 2013
- 3** **Description:** Acreditación Profesor Titular Universidad
Accrediting entity: ANECA
Date of recognition: 2008