JAUREGUI-SANCHEZ, YESSENIA

CONTACT INFORMATION

Queen's University Belfast

School of Mathematics and Physics

Address Main Physics Building
University Road
Belfast BT7 1NN
Northern Ireland

Email y.jauregui@qub.ac.uk



ACADEMIC APPOINTMENTS

Jan. 2023 - present	Fixed-term contract as a full-time research staff on the Smart Nano NI project at the School of Mathematics and Physics, Queen's University Belfast, Belfast, Northern Ireland.
Oct. 2019 - Sept. 2022	Fixed-term contract as a full-time research staff in the Looking and Listening in Complex Media project at the University of Exeter, Devon, UK. The research project was funded by the Engineering and Physical Sciences Research Council (EPSRC) and Dstl through the University Defence Research Collaboration in Signal Processing (EP/S026630/1).
Sept. 2018 - Abr. 2019	Temporary work contract as a full-time research staff in the project "Vision through scattering media using single-pixel cameras and compressing sensing techniques in low-light level conditions (FIS2015-72872-EXP)" at Universitat Jaume I, Castellón de la Plana, Spain.
Jan. 2017 - Dec. 2018	Auxiliary research staff in the project "Imaging through scattering media using structured illumination (P1•1B2015-35)" at Universitat Jaume I, Castellón de la Plana, Spain.
Sept. 2015 - Aug. 2018	Fixed-term contract as a full-time research staff in the project "Vision through turbid media (GRISOLIA/2015/037)" at Universitat Jaume I, Castellón de la Plana, Spain.

ORCID No.
0000-0002-3720-685X

https://scholar.google.com/citations?user=XqUDMvkAAAAJ&hl=es

EDUCATION

2015 — 2019	**Ph.D. in Applied Physics and Optics** Universitat Jaume I, Castellón de la Plana, Spain
Thesis title	"The nature of noise in single-pixel cameras and their application in imaging through scattering media" DOI: 10.6035/14104.2019.679915
Advisor	Dr. Enrique Tajahuerce Romera and Dr. Jesús Lancis Sáez
2013 — 2015	**Master in Optics** Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), Puebla, Mexico
Thesis title	"Resolution criterion based on Wigner distribution function for two point-objects in incoherent light" DOI: http://inaoe.repositorioinstitucional.mx/jspui/handle/1009/117
Advisor	Dr. Luis Raúl Berriel Valdos *(in memoriam)*
2007 — 2012	**Bachelor in Physics** Universidad Autónoma de Zacatecas, Zacatecas, Mexico
Thesis title	"Análisis de la Invisibilidad Óptica basada en el Sistema Visual Humano"
Advisor	Dr. Iván Moreno Hernández

PUBLICATIONS

Books (Chapter)

2018	• Y. Jauregui-Sánchez, P. Clemente, P. Latorre-Carmona, J. Lancis, and E. Tajahuerce, "Single-pixel imaging using photodiodes," in Advances in Photodetectors - Research and Applications, 1st ed., Kuan Chee, Ed. IntechOpen, China (2018).

Research articles

2022	• Y. Jauregui-Sánchez, Harry Penketh, and Jacopo Bertolotti, "Tracking moving objects through scattering media via speckle correlations," Nat. Commun. 13, 5779 (2022).
2019	• Y. Jauregui-Sánchez, et al., "Single-pixel imaging with Fourier filtering: application to vision through scattering media," Opt. Lett. 44, 679-682 (2019).
2018	• Y. Jauregui-Sánchez, et al., "Signal-to-noise ratio of single-pixel cameras based on photodiodes," Appl. Opt. 57, B67-B73 (2018).
2014	• I. Moreno, Y. Jauregui-Sánchez, M. Avendaño-Alejo, "Invisibility assessment: a visual perception approach", JOSA A (31), 2244-2248 (2014).

AWARDS AND RESEARCH RECOGNITION

2024	• **Featured Cover Artwork – *Optics in 2023* (Optica):** Artwork selected as a top cover candidate for the special issue *Optics in 2023* published by Optica (formerly OSA), highlighting research achievements in optics and photonics. Available in: https://www.optica-opn.org/home/articles/volume_35/january_2024/departments/optics_in_2023_cover_art/
2023	• **Featured Research Article – *Optics in 2023* (Optica):** A summary of the article *Tracking Moving Objects Through Scattering Media via Speckle Correlations* (Nature Communications, 2022) was selected for inclusion in Optics in 2023, a special feature published by Optics & Photonics News showcasing notable research contributions from the optics community**.** Available in: https://www.optica-opn.org/home/articles/volume_34/december_2023/extras/correlation-based_imaging_of_moving_objects_in_com/.
2019	• **PhD Awarded with Excellent Cum Laude Distinction:** Doctoral thesis *The Nature of Noise in Single-Pixel Cameras and their Application in Imaging Through Scattering Media* received the highest distinction awarded by the Doctoral School of Universitat Jaume I, Spain.
2018	• **SPIE Best Student Paper Award:** Awarded for the paper *Vision Through Turbid Media by Fourier Filtering and Single-Pixel Detection* presented at SPIE Photonics Europe 2018 (Strasbourg, France), recognising outstanding student research contributions in optical imaging. • **Featured Contribution – Imaging and Applied Optics 2018 Special Issue (Optica):** Research article *Signal-to-Noise Ratio of Single-Pixel Cameras Based on Photodiodes* selected for publication in the *Imaging and Applied Optics 2018* special issue of Optica (formerly OSA).
2014	• **Featured Article – Virtual Journal for Biomedical Optics (VJBO):** The article *Invisibility Assessment: A Visual Perception Approach* was highlighted in the Optica Virtual Journal for Biomedical Optics (VJBO), recognising its relevance to the biomedical optics community.

SCHOLARSHIPS AND GRANTS

2023	• Leibniz-IPHT Travel Award, Women in Photonics 2023 workshop, Jena, Germany.
2015 — 2018	• Santiago Grisolía Doctoral Scholarship (GRISOLIA/2015/037) by Generalitat Valenciana, Spain.
2013 — 2015	• CONAHCYT Scholarship No. 365941 for MSc in Optics at INAOE, Puebla, Mexico.

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https://
scholar.google.com/
citations?
user=XqUDMvkAAAAJ
&hl=es

CONFERENCE AND RESEARCH PRESENTATIONS

2025	• Photonics Ireland 2025, Cork, Ireland **(Poster presentation)**. • IEEE Education and Training in Optics and Photonics (ETOP), Glasgow, Scotland **(Oral presentation)**.
2024	• 1st Mexico-UK Interdisciplinary Congress: 200 Years of Collaboration for Academic Excellence, London, United Kingdom **(Oral presentation)**.
2023	• Workshop "Women in Photonics 2023", Leibniz-IPHT, Jena, Germany **(Oral and Poster Presentation)**. • International Thematic School "Waves in Complex Media from Theory to Practice" by la Société Française d'Optique, Les Houches, France **(Poster presentation)**.
2019	• Workshop "Light in Complex Materials", University of Exeter, Devon, UK.
2018	• "XII Reunión Nacional de Óptica 2018," Image section, Castellón de la Plana, Spain **(Oral presentation).** • SPIE Photonics Europe 2018, Unconventional Optical Imaging section, 1067715, Strasbourg, France **(Oral presentation).** • SPIE Photonics West BiOS 2018, Adaptive Optics and Wavefront Control for Biological Systems IV section, 105020W, San Francisco, USA **(Oral presentation).**
2017	• 2017 European Conference on Biomedical Optics (ECBO), Munich, Germany **(Oral presentation).** • 6th EPS Young Minds Leadership Meeting, Naples, Italy **(Oral and Poster Presentation)**.
2016	• European Optical Society Annual Meeting (EOSAM) 2016, Adaptative Optics and Advanced Illumination Imaging section, Berlin, Germany **(Poster presentation)**.

INVITED TALKS

2025	• **Invited Outreach Lecture –** *Expectations and Realities of a Scientific Career:* Women in Optics Programme, organised by the SPIE Student Chapter OASIS UG, University of Guanajuato, Mexico. • **Invited Talk –** *Computational Imaging: New Horizons of Optics* Conexión con la Comunidad Mexicana de Óptica (CCMO 2025), organised by the IEEE Mexico Optics and Photonics Group.

2022

- **Invited Talk –** Winter Workshop in Optics 2022, organised by the OPTICA Student Chapter at the Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), Puebla, Mexico.

TEACHING EXPERIENCE

Jan. 2025 — Present

Tutor, PHY1001 Foundation Physics
School of Mathematics and Physics, Queen's University Belfast

- Deliver tutorial sessions for PHY1001, a 40 CAT point introductory physics module taught across the full academic year to Level 1 undergraduate students.
- Support student learning through guided problem-solving exercises and discussion of core physics principles.
- Facilitate tutorials covering topics including mechanics, oscillations and waves, thermodynamics, electricity and magnetism, optics, and introductory modern physics.
- Assist students in developing the analytical, mathematical, and problem-solving skills required for progression within undergraduate physics programmes.

PUBLIC ENGAGEMENT AND OUTREACH

Oct. 2023 - present

Outreach Impact: 21 activities • 45 volunteer hours • 2,601 participants reached

Actively engaged in science communication and public outreach through initiatives in the United Kingdom and Mexico. As a STEM Ambassador in Northern Ireland, has delivered 21 outreach activities, contributing 45 volunteer hours and reaching more than 2,600 participants since 2023. Activities have included science festivals, school engagement programmes, university outreach events, mentoring initiatives, and public talks promoting physics, optics, photonics, and STEM careers.