

## Roger Castells-Graells, PhD

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2015 – 2019    Ph.D in Biochemistry, John Innes Centre - University of East Anglia, Norwich, UK  
                  Advisor: Prof. George Lomonosoff  
                  Thesis: Viruses in motion: maturation of an insect virus-like particle – a nanomachine  
2011 - 2015    Degree in Biotechnology (BSc), Autonomous University of Barcelona (UAB), Spain  
2007 - 2015    Music Professional Degrees in Saxophone and Oboe. Music Conservatory of Terrassa, Spain

### Fields of Specialization

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Structural Biology, Biochemistry, Molecular Biology, Synthetic Biology, Protein Design, Virology

### Research experience

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Jan. 2020 – Present    **Postdoctoral Scholar, University of California, Los Angeles, USA**

- Computational **design** and characterization of novel **protein assemblies** as imaging scaffolds for **structural biology (cryo-EM)** applications in the lab of Prof. Todd **Yeates**.

Oct. 2019 – Jan. 2020    **Postdoctoral Researcher, John Innes Centre, Norwich, UK**

- Study and production of **virus-like particles** for **biotechnology** applications like vaccines and medicine. Horizon 2020 Pharma Factory project in the lab of Prof. George **Lomonosoff**.

Oct. 2015 – Sept. 2019    **PhD Student, John Innes Centre, Norwich, UK**

- Study of **virus maturation** using transient expression systems and biophysical and structural methods, including **cryo-EM**, in the lab of Prof. George **Lomonosoff** (PhD project, John Innes Centre, June 2016 – September 2019).  
Collaborations with:
  - Prof. Jack **Johnson** (The Scripps Research Institute, USA)
  - Prof. Neil **Ranson** (The Astbury Centre for Structural Molecular Biology, UK)
  - Prof. Tatiana **Domitrovic** (Universidade Federal do Rio de Janeiro, Brazil)
- Study of the alteration of **host vesicular trafficking** by an **effector** from *Phytophthora infestans* and study of the deletion of a **gene cluster** in tomato with **CRISPR/Cas9** in the lab of Prof. Sophien **Kamoun** (Rotation 3, The Sainsbury Laboratory, March – May 2016).
- Study of **starch synthesis in wheat grains** in the lab of Prof. Alison **Smith** (Rotation 2, John Innes Centre, January – March 2016).
- Production of **engineered mosaic virus-like particles** from turnip crinkle virus (TCV) **in plants** in the lab of Prof. George **Lomonosoff** (Rotation 1, John Innes Centre, October – December 2015).

Oct. 2014 - Feb. 2015    **Internship – Undergraduate Research Programme**

**Centre for Research in Agricultural Genomics (CRAG), Barcelona, Spain**

- Study of the structure of **plant genomes** looking at elements like transposons with bioinformatic tools. Mentored by Dr. Cristina **Vives**, Dr. Pere **Puigdomènech** and Dr. J. M. **Casacuberta**.

July - Sept. 2014

**Internship - Amgen Scholars Undergraduate Summer Research Programme,  
Ludwig-Maximilian University of Munich, Munich, Germany**

- Study of **chloroplast membrane proteins**, OEP21 and Tic-22, with Dr. Bettina **Bölter (Soll lab)**.

July - Aug. 2013

**Internship - International Biology Undergraduate Summer School,  
University of Zurich, Zurich, Switzerland**

- Study of the **durable disease resistance gene Lr34 from wheat** with Dr. Simon **Krattinger**, in the lab of Prof. Beat **Keller**.

### **Publication list**

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1. **Castells-Graells, R.**, Ribeiro, J., Domitrovic, T., Hesketh, E. L., Scarff, C. A., Johnson, J. E., Ranson, N. A., Lawson, D. M., & Lomonossoff, G. P. (2021). Plant-expressed virus-like particles reveal the intricate maturation process of a eukaryotic virus. *Communications biology*, 4(1), 619. <https://doi.org/10.1038/s42003-021-02134-w>
2. Thuenemann, E. C., Byrne, M. J., Peyret, H., Saunders, K., **Castells-Graells, R.**, Ferriol, I., Santoni, M., Steele, J., Ranson, N. A., Avesani, L., Lopez-Moya, J. J., & Lomonossoff, G. P. (2021). A replicating viral vector greatly enhances accumulation of helical virus-like particles in plants. *Viruses*, 13(5), 885. <https://doi.org/10.3390/v13050885>
3. **Castells-Graells, R.**, & Lomonossoff, G. P. (2021). Plant-based production can result in covalent cross-linking of proteins. *Plant biotechnology journal*, 19(6), 1095–1097. <https://doi.org/10.1111/pbi.13598>
4. Schreier, T. B., Fahy, B., David, L. C., Siddiqui, H., **Castells-Graells, R.**, & Smith, A. M. (2021). Introduction of glucan synthase into the cytosol in wheat endosperm causes massive maltose accumulation and represses starch synthesis. *The Plant Journal*, 106(5), 1431–1442. <https://doi.org/10.1111/tpj.15246>
5. Petre, B., Contreras, M. P., Bozkurt, T. O., Schattat, M. H., Sklenar, J., Schornack, S., Abd-El-Hallem, A., **Castells-Graells, R.**, Lozano-Durán, R., Dagdas, Y. F., Menke, F., Jones, A., Vossen, J. H., Robatzek, S., Kamoun, S., & Win, J. (2021). Host-interactor screens of *Phytophthora infestans* RXLR proteins reveal vesicle trafficking as a major effector-targeted process. *The Plant Cell*, 33(5), 1447–1471. <https://doi.org/10.1093/plcell/koab069>
6. Johnson, J. E., Domitrovic, T., Matsui, T., **Castells-Graells, R.**, & Lomonossoff, G. (2021). Dynamics and stability in the maturation of a eukaryotic virus: a paradigm for chemically programmed large-scale macromolecular reorganization. *Archives of virology*, 166(6), 1547–1563. <https://doi.org/10.1007/s00705-021-05007-z>
7. Berardi, A., **Castells-Graells, R.**, & Lomonossoff, G. P. (2020). High stability of plant-expressed virus-like particles of an insect virus in artificial gastric and intestinal fluids. *European journal of pharmaceuticals and biopharmaceutics*, 155, 103–111. <https://doi.org/10.1016/j.ejpb.2020.08.012>
8. Del Cerro, P., Ayala-García, P., Buzón, P., **Castells-Graells, R.**, López-Baena, F. J., Ollero, F. J., & Pérez-Montaña, F. (2020). OnfD, an AraC-Type Transcriptional Regulator Encoded by *Rhizobium tropici* CIAT 899 and Involved in Nod Factor Synthesis and Symbiosis. *Applied and environmental microbiology*, 86(19), e01297-20. <https://doi.org/10.1128/AEM.01297-20>

9. Wu, C. H., Adachi, H., De la Concepcion, J. C., **Castells-Graells, R.**, Nekrasov, V., & Kamoun, S. (2020). NRC4 Gene Cluster Is Not Essential for Bacterial Flagellin-Triggered Immunity. *Plant physiology*, 182(1), 455–459. <https://doi.org/10.1104/pp.19.00859>
10. **Castells-Graells R.**, Lomonosoff G.P., Saunders K. (2018) Production of mosaic turnip crinkle virus-like particles derived by coinfiltration of wild-type and modified forms of virus coat protein in plants. *Virus-Derived Nanoparticles for Advanced Technologies. Methods in Molecular Biology*, pp 3-17. [https://doi.org/10.1007/978-1-4939-7808-3\\_1](https://doi.org/10.1007/978-1-4939-7808-3_1)
11. Steele, J.F.C., Peyret, H., Saunders, K., **Castells-Graells, R.**, Marsian, J., Meshcheriakova, Y., Lomonosoff, G.P. (2017). Synthetic plant virology for nanobiotechnology and nanomedicine. *WIREs Nanomedicine & Nanobiotechnology*. <https://doi.org/10.1002/wnan.1447>
12. Contreras, B., Vives, C., **Castells, R.**, Casacuberta, J.M. (2015). The impact of transposable elements in the evolution of plant genomes: From selfish elements to key players. *Evolutionary biology: biodiversification from genotype to phenotype*. Springer International Publishing, pp 93–105. [https://doi.org/10.1007/978-3-319-19932-0\\_6](https://doi.org/10.1007/978-3-319-19932-0_6)

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#### Preprints and unpublished work (Submitted/in preparation)

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13. **Castells-Graells, R.**, Meador, K., Arbing, M.A., Sawaya, M.R., Gee, M., Cascio, D., Gleave, E., Debreczeni, J.É., Breed, J., Phillips, C., Yeates, T.O. (2022). Rigidified Scaffolds for 3 Angstrom Resolution Cryo-EM of Small Therapeutic Protein Targets. *BioRxiv*. <https://doi.org/10.1101/2022.09.18.508009>
14. **Castells-Graells, R.**, Hesketh, E.L., Matsui, T., Johnson, J.E., Ranson, N.A., Lawson, D., Lomonosoff, G.P. Decoding maturation of a eukaryotic, T=4, RNA virus with cryo-EM structures of five intermediates.
15. **Castells-Graells, R.**, G.P. Lomonosoff. 3D printing in virology: tools for the lab and the classroom.
16. **Castells-Graells, R.**, Sawaya, M., Yeates, T.O. Deviations in overall length scale and model strain in structures by X-ray Crystallography and Cryo-Electron Microscopy.

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#### Patent applications

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- UC-2023-035-1-LA - DARPin Backbones and Rigidified Electron Microscopy Imaging Scaffolds.

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#### Awards and recognitions

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| 2022 | <b>1st Prize Short Oral Presentation</b> - American Crystallographic Association Annual Meeting   |
| 2021 | <b>2nd Prize from the Public</b> - "Tu investigación en 3 minutos" ("Your research in 3 minutes") |
| 2021 | <b>People's Choice award</b> - UCLA PDA 3-Minute Research Pitch Competition.                      |
| 2020 | <b>1st Prize Oral Presentation</b> - SCB Virology Meeting 2020.                                   |
| 2019 | <b>Best Oral Presentation Award</b> - Early Career Researchers Conference (ECRC) 2019.            |
| 2019 | <b>Best Talk Award</b> at the 2019 Student Annual Science Meeting in Norwich.                     |
| 2018 | <b>John Innes Foundation Prize for Excellence in Science Communication.</b>                       |
| 2017 | <b>GENius of the Month Team Award.</b> Awarded to our BiotecYES team.                             |
| 2017 | <b>Best Poster Award</b> - V International Symposium SRUK/CERU.                                   |
| 2017 | <b>Best Talk Award</b> - V International Symposium SRUK/CERU.                                     |
| 2017 | <b>Poster Prize</b> - NanoBioMater Conference 2017.   |
| 2017 | <b>University of East Anglia Engagement Award 2016/17.</b>  |

- 2017 **Poster Prize** - Decoding and Recoding Biological Systems Meeting.
- 2016 **Awarded an Open Plant Fund** for the “Accessible 3D Models of Molecules” project to develop 3D printed models and tools for scientific and outreach purposes.
- 2016 **Bryan Harrison Prize** winner for the best student presentation at the Association of Applied Biologists International Advances in Plant Virology conference.

### **Fellowships and grants**

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- 2022 Pacific Northwest Center for Cryo-EM (PNCC) - Research proposal awarded for microscope access
- 2022 Stanford SLAC Cryo-EM Center (S2C2) - Research proposal awarded for microscope access
- 2022 ACA 2022 Meeting Travel Grant
- 2020 EMBL Fee Waiver Fellowship - EMBO Workshop
- 2018 Biochemical Society General Travel Grant
- 2017 Open Plant Follow-up Funding - Accessible 3D Models of Molecules Project
- 2017 EMBL Fee Waiver Fellowship – Conference
- 2016 Open Plant Fund Grant - Accessible 3D Models of Molecules Project
- 2015 John Innes Foundation PhD Fellowship (2015-2019)
- 2014 Amgen Scholars European Programme Fellowship - LMU
- 2013 Biology Undergraduate Summer School Fellowship - University of Zurich
- 2009 Youth and Science Programme Fellowship (2009-2011)

### **Teaching and Mentoring Experience**

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| 2020 – Present | Mentored undergraduate and graduate students - University of California Los Angeles                                      |
| 2019           | Mentored Youth and Science Programme Students  |
| Summer 2019    | Teacher at the Youth and Science Summer Programme<br>Course: Molecular biology: from genetic engineering to nanomachines |
| 2018           | Mentored Youth and Science Programme Students  |
| Summer 2018    | Teacher at the Youth and Science Summer Programme<br>Course: Molecular biology: from genetic engineering to nanomachines |
| 2018           | Teaching assistant at University of East Anglia<br>BIO-4002B - Evolution Behaviour and Ecology                           |
| 2017           | Teaching assistant at University of East Anglia<br>BIO-4002B - Evolution Behaviour and Ecology                           |

## Structural biology courses

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- M230B and M230D Structural Molecular Biology Courses. University of California Los Angeles, January - February 2022.
- EMBO Workshop: In situ Structural Biology. Virtual, 6<sup>th</sup>-8<sup>th</sup> December 2020.
- Instruct Course on Model Building and Refinement for High Resolution EM Maps (4th Icknield Workshop). Harwell, Oxford, UK, 1<sup>st</sup>-4<sup>th</sup> May 2018.
- EMBO Practical Course: Image processing for cryo-electron microscopy. London, UK, Sept. 2017.

## Participation in conferences and meetings (highlights)

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### Selected oral presentations

- **Castells-Graells R.** (2022). A designed imaging scaffold breaks the barrier to high-resolution structure determination of small proteins by cryo-EM. *MBI meeting, 7<sup>th</sup> September 2022, Los Angeles, USA.*
- **Castells-Graells R.** (2022). Novel designed rigidified imaging scaffolds for high-resolution structure determination of small proteins with cryo-EM. *ACA annual meeting, 30<sup>th</sup> August 2022, Portland, USA.*
- **Castells-Graells R.** (2022). Designing novel imaging scaffolds for cryo-EM structure determination in vitro and in situ: modular tools for structural biology. *DOE-MBI meeting, 7<sup>th</sup> April 2022, University of California Los Angeles, USA.*
- **Castells-Graells R.** (2021). Studying virus maturation with cryo-electron microscopy. *CNB - XXIX Workshop Advances in Molecular Biology by Young Researchers Abroad, 22<sup>nd</sup> December 2021, virtual.*
- **Castells-Graells R.,** Lomonosoff G. P. (2021). Studying viral dynamics: the trouble with plants. *4<sup>th</sup> ISPMF Conference, 28<sup>th</sup> September 2021, virtual.*
- **Castells-Graells R.,** Yeates T.O. (2021). Designing novel imaging scaffolds for cryo-EM structure determination in vitro and in situ. *UCLA-DOE Science Mixer, 29<sup>th</sup> July 2021, University of California Los Angeles, USA.*
- **Castells-Graells R.** (2021). Designing molecular Legos: imaging scaffolds for small proteins. *DOE-MBI meeting, 3<sup>rd</sup> June 2021, University of California Los Angeles, USA.*
- **Castells-Graells R.,** Domitrovic T., Matsui T., Scarff C.A., Hesketh E.L., Ranson N.A., Lawson, D.M., Johnson J. E., Lomonosoff G. P. (2020). Viruses in motion: a close look at virus maturation through cryo-electron microscopy. *SCB Virology meeting 2020, 29<sup>th</sup> October 2020, virtual.*
- **Castells-Graells R.** (2020). Viruses in motion: exploring virus maturation stages with an insect virus, plants, and cryo-electron microscopy. *Invited external seminar, 7<sup>th</sup> January 2020, CRAG, Spain.*
- **Castells-Graells R.** (2019). Viruses in motion: a close look at virus maturation through cryo-electron microscopy. *Early Career Researchers Conference, 11<sup>th</sup>-13<sup>th</sup> November 2019, Spain.*
- **Castells-Graells R.** (2019). Movie premiere of “Viruses in Motion”: Virus maturation revealed by cryo-electron microscopy. *Annual Science Meeting, 9<sup>th</sup>-11<sup>th</sup> October 2019, Norwich, United Kingdom.*
- **Castells-Graells R.** (2019). Viruses in motion: a close look at virus maturation through cryo-electron microscopy. *OpenPlant Forum, 29<sup>th</sup>-31<sup>st</sup> July 2019, Cambridge, United Kingdom.*
- **Castells-Graells R.,** Domitrovic T., Matsui T., Scarff C.A., Hesketh E.L., Ranson N.A., Johnson J. E., Lomonosoff G.P. (2019). Viruses in Motion: Studying the Maturation Stages of an Animal Virus. *Gordon Research Seminar in Physical Virology, 19<sup>th</sup>-20<sup>th</sup> January 2019, Ventura, USA.*
- **Castells-Graells R.,** Domitrovic T., Matsui T., Scarff C.A., Hesketh E.L., Ranson N.A., Johnson J. E., Lomonosoff G.P. (2018). Studying virus maturation stages with an insect virus. *Ninth International Virus Assembly Symposium, 6<sup>th</sup>-10<sup>th</sup> May 2018, Madeira, Portugal.*

- **Castells-Graells R.** (2018). The private "life" of viruses - Using plants to crack virus secret codes and build nanomachines. *Accessible Science Seminar, 25<sup>th</sup> April 2018, John Innes Centre, United Kingdom.*
- **Castells-Graells R.** (2018). Viruses in motion: Studying viral dynamics using an insect virus and cryo- electron microscopy. *Biological Chemistry Departmental Seminar, 6<sup>th</sup> March 2018, John Innes Centre, United Kingdom.*
- **Castells-Graells R.** (2018). Building nanostructures with plant factories: From viruses to nanomachines. *Bitesize PhD seminar, 14<sup>th</sup> February 2018, University of East Anglia, United Kingdom.*
- **Castells-Graells R.** (2017). Studying the dynamics of a virus-like particle and developing potential biotechnological applications. *Invited seminar at the Instituto de Microbiologia, 31<sup>st</sup> October 2017, Universidade Federal do Rio de Janeiro, Brazil.*
- **Castells-Graells R.,** Johnson J. E., Lomonossoff G. P. (2017). Studying viral dynamics with an insect virus. *Student talk at the EMBO Practical Course: Image Processing for Cryo-EM, 5<sup>th</sup>-15<sup>th</sup> September 2017, Birkbeck, University of London, United Kingdom.*
- **Castells-Graells R.** (2017). Generating virus-like particles for bionanotechnological applications. *OpenPlant Forum Flashtalk, 24<sup>th</sup>-26<sup>th</sup> July 2017, Cambridge, United Kingdom.*
- **Castells-Graells R.,** Lomonossoff G. P. (2017). Generating virus-like particles for potential bionanotechnological applications. *V International Symposium SRUK/CERU, 7<sup>th</sup>-9<sup>th</sup> July 2017, London, United Kingdom.*
- **Castells-Graells R.,** Johnson J. E., Lomonossoff G. P. (2017). Studying dynamic virus-like particles for potential bionanotechnological applications. Student talk at *NanoBioMater 2017 International Conference - University of Stuttgart, 28<sup>th</sup>-30<sup>th</sup> June 2017, Bad Herrenalb, Germany.*
- **Castells-Graells R.,** Saunders K., Lomonossoff G. P. (2016). The generation of modified plant virus-like particles for potential bionanotechnological applications. *Taming Plant Viruses - Fundamental Biology to Bionanotechnology, 8<sup>th</sup>-10<sup>th</sup> November 2016, Pitlochry, United Kingdom.*
- **Castells-Graells R.,** Saunders K., Lomonossoff G. P. (2016). The generation of modified plant virus-like particles by transient expression for potential bionanotechnological applications. *International Advances in Plant Virology conference, 7<sup>th</sup>-9<sup>th</sup> September 2016, Association of Applied Biologists, University of Greenwich, United Kingdom.*
- **Castells-Graells R.,** Saunders K., Lomonossoff G. P. (2016). The production of mosaic virus-like particles in plants. *8th European Plant Science Retreat, 20<sup>th</sup>-23<sup>rd</sup> June 2016, Barcelona, Spain.*

#### Panel presentations and posters

- **Castells-Graells R.,** Meador K., Gee, M., Yeates T.O. (2022). Novel designed rigidified imaging scaffolds for high-resolution structure determination of small proteins with cryo-EM. *Gordon Research Conference - 3DEM, June 2022, Castelldefels, Spain.*
- **Castells-Graells R.,** Richards L., Saha A., Agdanowski M., Meador K., Eisenberg D., Rodriguez J.A., Yeates T.O. (2022). Enabling structure determination of challenging samples with new cryo-electron microscopy methods. *DOE Bioimaging Science Program Meeting, 1<sup>st</sup> March 2022, virtual.*
- Meador K., Agdanowski M., **Castells-Graells R.,** Arbing M., Yeates T.O. (2021). Designing Protein Scaffolds for Frontier Cryo-EM Problems. *UCLA-DOE IGP meeting, 21<sup>st</sup> September 2021, virtual.*
- **Castells-Graells R.,** Johnson J. E., Lomonossoff G. P. (2019). Viruses in Motion: Studying the Maturation Stages of an Animal Virus. *Gordon Research Conference in Physical Virology, 20th-25th January 2019, Ventura, USA.*
- **Castells-Graells R.,** Johnson J.E, Lomonossoff G. P. (2018). Exploring virus maturation stages with an insect virus, plants and cryo-electron microscopy. *JIC/TSL Annual Science Meeting, 10<sup>th</sup>-12<sup>th</sup> October 2018, Norwich, United Kingdom.*

- **Castells-Graells R.**, Johnson J. E., Lomonossoff G. P. (2017). Viruses in motion: Studying viral dynamics using an insect virus and cryo-electron microscopy. *Virus-like particle & nano-particle vaccines conference*, 29<sup>th</sup>-30<sup>th</sup> **November - 1<sup>st</sup> December 2017**, Biopolis, **Singapore**.
- **Castells-Graells R.**, Johnson J. E., Lomonossoff G. P. (2017). Viruses in slow motion: studying viral dynamics with an insect virus and cryo-EM. *EMBL Conference on Revolutions in Structural Biology*, 16<sup>th</sup>- 17<sup>th</sup> **November 2017**, Heidelberg, **Germany**.
- **Castells-Graells R.**, Johnson J. E., Lomonossoff G. P. (2017). Studying viral dynamics with an insect virus. Student poster at *EMBO Practical Course: Image Processing for Cryo-EM*, 5<sup>th</sup>-15<sup>th</sup> **September 2017**, Birkbeck, University of London, **United Kingdom**.
- **Castells-Graells R.**, Lomonossoff G. P. (2017). Generating virus-like particles for potential bionanotechnological applications. *V International Symposium SRUK/CERU*, 7<sup>th</sup>-9<sup>th</sup> **July 2017**, London, **United Kingdom**.
- **Castells-Graells R.**, Johnson J. E., Lomonossoff G. P. (2017). Studying dynamic virus-like particles for potential bionanotechnological applications. Student poster at *NanoBioMater 2017 International Conference - University of Stuttgart*, 28-30 **June 2017**, Bad Herrenalb, **Germany**.
- **Castells-Graells R.**, Johnson J. E., Lomonossoff G. P. (2017). Studying viral dynamics with an insect virus. *Physical Virology Gordon Research Conference*, 29<sup>th</sup> **January 2017 – 2<sup>nd</sup> February 2017**, Lucca, **Italy**.
- **Castells-Graells R.**, Johnson J. E., Lomonossoff G. P. (2017). Studying viral dynamics with an insect virus. *Physical Virology Gordon Research Seminar*, 28<sup>th</sup>-29<sup>th</sup> **January 2017**, Lucca, **Italy**.
- **Castells-Graells R.**, Saunders K., Lomonossoff G. P. (2016). Generating virus-like particles for bionanotechnological applications. *JIC/TSL Annual Science Meeting*, 12<sup>th</sup>-14<sup>th</sup> **October 2016**, Norwich, **United Kingdom**.
- Saunders K., **Castells-Graells R.**, Lomonossoff G. (2016). The generation of modified plants virus-like particles by transient expression for potential bionanotechnological applications. *International Society for Plant Molecular farming Conference*. 25<sup>th</sup>-27<sup>th</sup> **May 2016**, VIB, University of Ghent, **Belgium**.

## Outreach and academic citizenship (highlights)

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- **Exploring Your Universe**. Booth leader at the UCLA science fair. November **2022**, US.
- **“Your research in 3 minutes”** outreach video contest (in Spanish). August **2021**, virtual.
- **UCLA PDA Research Pitch Competition** – communicating science to the public. June **2021**, virtual.
- **Science Km0**: [Educational video](#) about research for students (in Catalan). November **2020**, virtual.
- Presented a **science communication workshop** for graduate students and staff at the Centre for Research in Agricultural Genomics (CRAG). January **2020**, Spain.
- **Science mentor for 3 research projects** from high school students. September **2019** - January **2020**.
- Presented four **science communication workshops** for high school students at the Barcelona International Youth Science Challenge (BIYSC). July **2019**, Spain.
- **Science teacher** at the **Youth and Science Summer Programme**, June-July **2019**, Spain.
- Invited speaker at the **Pint of Science Festival** in Norwich. May **2017** and May **2019**, UK.
- **Science mentor for 4 research projects** from high school students. September **2018** - January **2019**.
- **Science teacher** at the **Youth and Science Summer Programme**, June-July **2018**, Spain.
- [Science educational video](#) about the production of virus-like particles in plants, June **2018**, virtual.
- Invited speaker for **Accessible Science Seminars**, John Innes Centre. April and October **2018**, UK.
- **Amgen Biotech Experience School Talk** (Ormiston Victory Academy Norwich). February **2018**, UK.
- Presented five **science communication workshops** for high school students at the Barcelona International Youth Science Challenge (BIYSC). July **2017**, Spain.
- Organizer of outreach activities for the **John Innes Centre Open Day**. September **2017**, UK.



- **Amgen Scholars Programme Students Mentor.** Summer **2017, UK.**
- Public engagement for Pint of Science with **Future Radio Norwich** (107.8 FM). April **2017, UK.**
- **STEM** (Science, technology, engineering and mathematics) **Ambassador.** March **2017, UK.**
- Volunteer and co-organizer of an **outreach activity** at the **Norwich Science Festival.** Oct. **2016, UK.**
- Founder of “**WhatIf**” ([www.whatifnet.science](http://www.whatifnet.science)), educational project that aims to bring science to students. **October 2014 – Present, virtual.**

## **Society memberships**

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- American Crystallographic Association (ACA)
- Association of Spanish Scientists in USA (ECUSA)
- Catalan Society of Biology (SCB)
- Catalan Association for Science Communication (ACCC)