Marta Bofill Roig

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Education

Universitat Politècnica de Catalunya (UPC) — Spain
PhD in Statistics and Operations Research — 2016–2020

- Thesis: "Statistical methods and software for clinical trials with binary and survival endpoints. Efficiency, sample size and two-sample comparison". DOI: 10.5281/zenodo.4273986.
  Advisor: Guadalupe Gómez Melis
  Qualification: Excellent Cum Laude, International mention

Universitat Politècnica de Catalunya – Universitat de Barcelona — Spain
Master in Statistics and Operations Research (MESIO UPC-UB) — 2014–2016

- Thesis: "Relative Efficiency between two tests".
  Advisor: Guadalupe Gómez Melis

Universitat de Barcelona (UB) — Spain
Bachelor's degree in Mathematics — 2009–2014

- Thesis: "Anàlisi de la supervivència per dades censurades".
  Advisor: Olga Julià de Ferran

Experience

Universitat Politècnica de Catalunya — Barcelona, Spain
Serra Húnter fellow (tenure-eligible lecturer) — September 2024 - Present

- at the Department of Statistics and Operations Research

Medical University of Vienna — Vienna, Austria
Postdoctoral researcher — February 2021 - August 2024

- at the Center for Medical Data Science, Section for Medical Statistics

Universitat Politècnica de Catalunya — Barcelona, Spain
Postdoctoral researcher — December 2020 - February 2021

Universitat Politècnica de Catalunya — Barcelona, Spain
Technical Research Assistant — 2016 – 2018

Research stays

- **Universität Bremen**, Kompetenzzentrum fur Klinische Studien Bremen und Institut für Statistik. Description: Short research stay with professor Werner Brannath (FB 03 Mathematik/Informatik). 2 Nov 2021 – 6 Nov 2021.

- **Medical University of Vienna**, Center for Medical Data Science. Description: Research stay with professor Martin Posch (Section for Medical Statistics). 7 Sept 2020 - 6 Nov 2020.

- **The University of Texas MD Anderson Cancer Center**. Description: Research stay with professor Yu Shen (Department of Biostatistics, Division of Basic Sciences). 10 Oct 2019 – 13 Nov 2019.

Publications

1. Balcar, L., Scheiner, B., Fulgenzi, C. A. M., D'Alessio, A., Pomej, K., **Bofill Roig, M.,** Meyer, E. L., Che, J., Nishida, N., Lee, P.-C., *et al.* A meta-analysis and real-world cohort study on the sex-related differences in efficacy and safety of immunotherapy for hepatocellular carcinoma. *JHEP reports* **6,** 100982 (2024).

2. **Bofill Roig, M.,** Glimm, E., Mielke, T. & Posch, M. Optimal allocation strategies in platform trials with continuous endpoints. *Statistical Methods in Medical Research,* (In Press). Preprint arXiv:2304.03035 [stat.ME] (2024).

3. Fischer, L., **Bofill Roig, M.** & Brannath, W. An exhaustive ADDIS principle for online FWER control. *Biometrical Journal,* (In Press). Preprint arXiv:2308.13827 [stat.ME] (2024).

4. Fischer, L., **Bofill Roig, M.** & Brannath, W. The online closure principle. *Annals of Statistics,* (In Press). Preprint arXiv:2211.11400 [stat.ME] (2024).

5. **Bofill Roig, M.,** Burgwinkel, C., Garczarek, U., Koenig, F., Posch, M., Nguyen, Q. & Hees, K. On the use of non-concurrent controls in platform trials: a scoping review. *Trials* **24,** 1–17 (2023).

6. Krotka, P., Hees, K., Jacko, P., Magirr, D., Posch, M. & **Bofill Roig, M.** NCC: An R-package for analysis and simulation of platform trials with non-concurrent controls. *SoftwareX* **23,** 101437 (2023).

7. Semmler, G., Scheiner, B., Balcar, L., Paternostro, R., Simbrunner, B., Pinter, M., Trauner, M., **Bofill Roig, M.,** Meyer, E., Hofer, B., Mandorfer, M., Pinato David; Zauner, C., Reiberger, T. & Funk, G. Disturbances in sodium and chloride homeostasis predict outcome in stable and critically-ill patients with cirrhosis. *Alimentary Pharmacology & Therapeutics* (2023).

8. **Bofill Roig, M.** & Gómez Melis, G. A class of two-sample nonparametric statistics for binary and time-to-event outcomes. *Statistical Methods in Medical Research* **31,** 225–239 (2022).

9. **Bofill Roig, M.,** Gómez Melis, G., Posch, M. & Koenig, F. Adaptive clinical trial designs with blinded selection of binary composite endpoints and sample size reassessment. *Biostatistics.* kxac040 (2022).

10. **Bofill Roig, M.,** Koenig, F., Meyer, E. & Posch, M. Commentary: Two approaches to analyze platform trials incorporating non-concurrent controls with a common assumption. *Clinical Trials* **19,** 502–503 (2022).

11. **Bofill Roig, M.,** Krotka, P., Burman, C.-F., Glimm, E., Gold, S. M., Hees, K., Jacko, P., Koenig, F., Magirr, D., Mesenbrink, P., *et al.* On model-based time trend adjustments in platform trials with non-concurrent controls. *BMC medical research methodology* **22,** 1–16 (2022).

12. Gold, S. M., **Bofill Roig, M.,** Miranda, J. J., Pariante, C., Posch, M. & Otte, C. Platform trials and the future of evaluating therapeutic behavioural interventions. *Nature Reviews Psychology* **1,** 7–8 (2022).

13. **Bofill Roig, M.,** Shen, Y. & Gómez Melis, G. Design of phase III trials with long-term survival outcomes based on short-term binary results. *Statistics in Medicine* **40,** 4122–4135 (2021).

14. **Bofill Roig, M.** & Gómez Melis, G. A new approach for sizing trials with composite binary endpoints using anticipated marginal values and accounting for the correlation between components. *Statistics in Medicine* **38,** 1935–1956 (2019).

15. **Bofill Roig, M.** & Gómez Melis, G. Selection of composite binary endpoints in clinical trials. *Biometrical Journal* **60,** 246–261 (2018).

16. Cacheiro, P., Lorenzo-Arribas, A., Lázaro, E., Alvares, D., Barrio, I., **Bofill Roig, M.,** Branco, M., Gómez-Mateu, M., Vilor-Tejedor, N. & Haro, M. Reproducibility, visibility and diversity: Current trends in Biostatistics viewed by young researchers. *Boletin de Estadistica e Investigacion Operativa* **34,** 73–91 (2018).

17. Gómez-Mateu, M., Lorenzo-Arribas, A., **Bofill Roig, M.,** Vilor-Tejedor, N., Barrio, I., Espasandín-Domínguez, J., Guler, I., Cacheiro, P., Aguirre, U. & Perez-Alvarez, N. Big data in biomedical research. Perspectives from the biostatnet-CRM Workshop. *Boletin de Estadistica e Investigacion Operativa* **32,** 257–277 (2016).

Publications under review

1. Cortés Martínez, J., **Bofill Roig, M.**, Gómez Melis, G. (2022). Design of Trials with Composite Endpoints with the R Package CompAREdesign. arXiv:2211.02535 [stat.ME]

2. Fischer, L., **Bofill Roig, M.**, Brannath, W. An Adaptive-Discard-Graph for online error control. arXiv:2301.11711 [stat.ME]

3. Freitag, M., Zocholl, D., Meyer, E., Gold, S., **Bofill Roig, M.**, De Smedt, H., Posch, M., Koenig, F. Design Considerations for a Phase II platform trial in Major Depressive Disorder. arXiv:2310.02080 [stat.AP]

Statistical Software

1. NCC: Simulation and analysis of platform trials with non-concurrent controls.
   Authors: Krotka, P. (maintainer), **Bofill Roig, M.** (thesis advisor), Hees, K., Jacko, P., Magirr, D.
   Web-page: https://pavlakrotka.github.io/NCC/
   R-package: https://cran.r-project.org/package=NCC

2. CompARE: Sample size and effect size calculation for composite endpoints.
   Authors: **Bofill Roig, M.** (maintainer), Cortés, J.
   R-package: https://cran.r-project.org/package=CompAREdesign
   Shiny-app: https://cinna.upc.edu/compare/

3. eselect: An R package for adaptive trial designs with selection of composite endpoints and sample size reassessment.
   Authors: **Bofill Roig, M.** (maintainer)
   R-package: https://cran.r-project.org/package=eselect

4. survmixer: Design of clinical trials with survival endpoints based on binary response.
   Authors: **Bofill Roig, M.** (maintainer)
   Web-page: https://martabofillroig.github.io/survmixer/
   R-package: https://cran.r-project.org/package=survmixer

5. Survbin: Two-sample statistics for binary and time-to-event outcomes.
   Authors: **Bofill Roig, M.** (maintainer)
   Web-page: https://martabofillroig.github.io/SurvBin/
   R-package: https://github.com/MartaBofillRoig/SurvBin

Grants, Fellowship, Awards and Scholarships

Project grant

- Project *Methods for complex trial designs with shared controls* within Austrian Science Fund (FWF) ESPRIT Programme ("Early Stage Programme: Research, Innovation and Training"). Reference: ESP 442. From 2023 to 2026. (Amount: 316,036.52 €). Grant DOI 10.55776/ESP442

Fellowships

- María de Maeztu Programme for Units of Excellence in R&D. Description: Predoctoral (and postdoctoral) fellowship from the Spanish Ministry of Economy and Competitiveness, through the María de Maeztu Programme for Units of Excellence in R&D (MDM-2014-0445). Reference: BES-2017-082157. From 2018 to 2021.(Amount: 92,750 €)

- INIREC fellowship: Support for the initiation of research Description: Master fellowship to work within the field of survival analysis in the research group GRBIO.

Awards

- Special Doctoral Awards 2022 – Universitat Politècnica de Catalunya. Awarded for the thesis "Statistical methods and software for clinical trials with binary and survival endpoints. Efficiency, sample size and two-sample comparison" in the field of sciences.
- Student Award. Best conference paper at 9th EMR-IBS and Italian Region Conference. Criterion for decision: submission of extended abstract "The anticipated odds ratios to decide the choice of a primary binary endpoint".
- XIV Concurs STUDENT d'Estadística Aplicada (1r Prize in the category "Idescat"). Treball premiat: "Efficient clinical trial design for the selection of a primary binary endpoint".

Travel scholarships

- **Research stay fellowship** (Borsa Ferran Sunyer i Balaguer, 2020). Research stay at the Center for Medical Statistics, Informatics, and Intelligent Systems, Medical University of Vienna. September–November 2020. Criterion for decision: submission of research proposal. "Statistical methodologies for efficient trial strategies in oncology".
- **Young researchers mobility program BIOSTATNET** (2016). Research stay with professor Antonio Martín Andrés at the Department of Statistics and Operations research of the University of Granada (Spain). 13-22 November, 2016.
- **Travel grant** (BIOSTATNET). IV Jornadas Científicas de Estudiantes de la Sociedad Española de Biometria (2019). Criterion for decision: submission of short abstract. "CompARE: a web app to study Composite Endpoints".
- **Young Statistician Showcase**: Invited talk at plenary session. XVII Spanish Biometric Conference and the VII Ibero-American Biometric Meeting (CEB-EIB 2019). Criterion for decision: submission of extended abstract. "A nonparametric two-sample class of statistics for time-to-event and binary outcomes".
- **Travel grant**. XVII Spanish Biometric Conference and the VII Ibero-American Biometric Meeting (CEB-EIB 2019). Criterion for decision: submission of extended abstract. "A nonparametric two-sample class of statistics for time-to-event and binary outcomes".
- **Young Statistician Showcase**: Invited talk at plenary session. XVI Spanish Biometric Conference (CEB 2017). Criterion for decision: submission of extended abstract. "Clinical Trial Designs with Multiple Binary Endpoints".
- **Travel grant**. XVI Spanish Biometric Conference (CEB 2017). Criterion for decision: submission of extended abstract. "Clinical Trial Designs with Multiple Binary Endpoints".

PARTICIPATION IN RESEARCH PROJECTS

- eWHORM: Enabling the WHO-Roadmap 2030 (101103053). European Commission. Research and Innovation actions supporting the global health EDCTP3 Joint Undertaking (HORIZON-JU-GH-EDCTP3-2022-01).
- EU-PEARL: EU Patient- cEntric clinicAl tRial pLatform (853966). European Commission. H2020-EU.3.1. Societal Challenges: Health, demographic change and well-being. Innovative Medicines Initiative 2 (IMI2) Joint Undertaking (JU).
- Barcelona Graduate School of Mathematics (BGSMaths) (MDM-2014-0445). Ministerio de Economía y Competitividad (Spain). PI: M. Noy
- Statistical methodologies for clinical and omics data and their applications in health sciences (PID2019-104830RB-I00). Ministerio de Ciencia e Innovación (Spain). PI: G. Gómez Melis
- Statistical methods for clinical trials, complex censoring schemes and integrative omics data analysis (MTM2015-64465-C2-1-R). Ministerio de Economía y Competitividad (Spain). PI: G. Gómez Melis
- Grup de recerca en bioestadística i bioinformàtica (GRBIO) (2017 SGR 622). Generalitat de Catalunya (Spain). PI: G. Gómez Melis
- Grup de recerca en bioestadística i bioinformàtica (GRBIO) (2014 SGR 464). Generalitat de Catalunya (Spain). PI: G. Gómez Melis

- BIOSTATNET (MTM2017-90568-REDT). Ministerio de Economía y Competitividad (Spain). PI: C. M. Cadarso Suárez
- STAT WARS: "El Imperio de los Datos" (FCT-18-12946). Ministerio de Economía y Competitividad (Spain). PI: C. M. Cadarso Suárez
- STAT WARS: el Despertar de los Datos (FCT-16-11015). Ministerio de Economía y Competitividad (Spain). PI: C. M. Cadarso Suárez

Teaching and supervision

Teaching in the courses

- **Lifetime Data Analysis**, Master's degree in Statistics and Operations Research (MESIO UPC-UB). 2017-2018 (10 hours taught) and 2019-2020 (10h)
- **Advanced Topics in Survival Analysis**, MESIO UPC-UB. 2016-2017 (15h) and 2017-2018 (22.5h).
- **Introducción a la Inferencia Estadística**, Bachelor in Statistics (Grado Interuniversitario de Estadística UB-UPC). 2017-2018 (12h)
- **Probabilitat i Estadística**, Bachelor's degree in Informatics Engineering (FIB UPC). 2016-2017 (32h)
- **Basic Statistics for Biomedical Research**. Short course (September 2019) at Vall d'Hebron Institut de Recerca
- **Platform Trials**. Short course at International Conference on Multiple Comparison Procedures (MCP 2022)

Supervision

- Co-supervision together with Prof. Martin Posch (Medical University of Vienna) in the Master's thesis: **Model-based adjustments for non-concurrent comparisons in platform trials** by Pavla Krotka, Master's programme in Data Science at the University of Vienna. (June 2023)
- Co-supervision together with Prof. Werner Brannath (University of Bremen) in the Master's thesis: **Online multiple testing with FWER control** by Lasse Fischer, Master Medical Biometry at the University of Bremen. (September 2022)
- Co-supervision together with Prof. Marta Fairén (UPC) in the Bachelor's thesis **Construcció d'un paquet R per l'estudi de variables binaries compostes** by Raquel Rovira, Bachelor in Statistics (UB-UPC). (2020)

Conference oral presentations

Invited sessions at conferences

- 70th Biometric Colloquium
  M. Bofill Roig. Presentation: Modeling strategies for analysing platform trials with non-concurrent controls. Lübeck (Germany), February 28 – March 01, 2024.
- Australian Trials Methodology Conference 2023
  M. Bofill Roig. Presentation: Analysis approaches for platform trials utilising non-concurrent controls. Hybrid format: Melbourne (Australia) and online, 17-18 October, 2023.
- VII Spanish Biometric Conference and the VII Ibero-American Biometric Meeting (CEB-EIB 2023)
  M. Bofill Roig. Presentation: Maximizing Efficiency in Platform Trials with Shared Controls: Optimal allocation strategies. Vigo (Spain), 27-30 June, 2023.
- Workshop Adaptive Designs and Multiple Testing Procedures 2023
  M. Bofill Roig. Presentation: Optimal allocation strategies for platform trials. Basel, April, 2023.
- The ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop 2021
  M. Bofill Roig. Presentation: Statistical Inference in Platform Trials with Non-Concurrent Controls. Washington (USA) - Online, September, 2021.

- XXXIInd Conference of the Austro-Swiss Region (ROeS) of the International Biometric Society
  M. Bofill Roig. Presentation: Treatment-control Comparisons in Platform Trials with Non-concurrent Controls. Salzburg (Austria), September, 2021.

Invited talks at seminars

- Heidelberger Kolloquim Medizinische Biometrie
  M. Bofill Roig. Presentation: Statistical modelling for utilising non-concurrent controls in platform trials. Heidelberg, 17 July, 2023.
- Australian Trials Methodology (AusTriM) Research Network - Adaptive designs series
  M. Bofill Roig. Presentation: Non-Concurrent Controls in platform trials. Australia - Online, April, 2022.

Contributed sessions at conferences

- 5th Conference of the Central European Network (CEN2023)
  M. Bofill Roig, M. Posch. Presentation: Adaptive selection of binary composite endpoints and sample size reassessment based on blinded data. Basel (Switzerland), 3-7 September, 2023.
- International Conference on Multiple Comparison Procedures (MCP 2022)
  M. Bofill Roig, M. Posch. Presentation: Methods for utilising non-concurrent controls in platform trials. Bremen (Germany), 30 August - 2 September, 2022.
- 31st International Biometric Conference (IBC2022)
  M. Bofill Roig, M. Posch. Presentation: Utilizing non-concurrent controls in platform trials in the presence of time trends. Riga (Latvia), 10-15 July, 2022.
- Adaptive Designs and Multiple Testing Procedures Workshop 2022
  M. Bofill Roig, M. Posch. Presentation: Model-based approaches for utilising non- concurrent controls in platform trials. Heidelberg (Germany), 29 June -1 July, 2022.
- XVIII Spanish Biometric Conference (CEB 2022)
  M. Bofill Roig, M. Posch. Presentation: Current statistical issues in platform trials for the evaluation of multiple treatments. Madrid (Spain), 25-27 May, 2022.
- Australian Trials Methodology Conference 2021
  M. Bofill Roig. Presentation: Valid inference when using non-concurrent controls in platform trials. Australia - Online, December, 2021.
- 42nd Annual Conference of the International Society for Clinical Biostatistics (ISCB 2021)
  M. Bofill Roig, G. Gómez Melis, M. Posch, F. Koenig. Presentation: Adaptive clinical trials with selection of composite endpoints and sample size reassessment. Lyon (France) - Online, July, 2021.
- IV Jornadas Científicas de Estudiantes de la Sociedad Española de Biometría (SEB) (IV-JJSEB)
  M. Bofill Roig, G. Gómez Melis. Presentation: CompARE: A web app to study Composite Endpoints. Albacete (Spain), 5-6 September, 2019.
- 40th Annual Conference of the International Society for Clinical Biostatistics (ISCB 2019)
  M. Bofill Roig, G. Gómez Melis. Presentation: A general class of statistics for binary and survival outcomes. Leuven (Belgium), 14-18 July, 2019.
- XVII Spanish Biometric Conference and the VII Ibero-American Biometric Meeting (CEB-EIB 2019)
  M. Bofill Roig, G. Gómez Melis. Presentation: A nonparametric two-sample class of statistics for time-to-event and binary outcomes. Valencia (Spain), 19-21 June, 2019.
- 8th Annual Survival Analysis for Junior Researchers Conference (SAfJR 2019)
  M. Bofill Roig, G. Gómez Melis. Presentation: Binary and survival joint test. Copenhagen (Denmark), 24-26 April, 2019.
- 4a Reunión General de BIOSTATNET
  M. Bofill Roig, G. Gómez Melis. Presentation: Binary and survival joint test. Santiago de Compostela (Spain), 25-26 January, 2019.
- XXIXth International Biometric Conference (IBC 2018)
  M. Bofill Roig, G. Gómez Melis. Presentation: Sample Size Derivation for Composite Binary Endpoints Accounting for Departures of the Anticipated Values. Barcelona (Spain), 8-13 July, 2018.

- III Jornadas Científicas de Estudiantes de la SEB (III-JJSEB).
  M. Bofill Roig, JL Jiménez. Presentation: Facing the challenges in clinical trials. Bilbao (Spain), January, 2018.
- XVI Spanish Biometric Conference (CEB 2017).
  M. Bofill Roig, G. Gómez Melis. Presentation: Clinical Trial Designs with Multiple Binary Endpoints. Sevilla (Spain), 13-15 September, 2017.
- IV Congreso de Jóvenes Investigadores Real Sociedad Matemática Española.
  M. Bofill Roig, G. Gómez Melis. Presentation: Clinical Trial Designs with Multiple Binary Endpoints. Valencia (Spain), 4-8 September, 2017.
- International Society for Clinical Biostatistics Conference 2017 (ISCB 2017).
  M. Bofill Roig, G. Gómez Melis. Presentation: Sample size derivation for Binary Composite Endpoints. Vigo (Spain), 9-13 July, 2017.
- 9th EMR-IBS and Italian Region Conference (EMR-IBS 2017).
  M. Bofill Roig, G. Gómez Melis. Presentation: The anticipated odds ratios to decide the choice of a primary binary endpoint. Thessaloniki (Greece), 8-12 May, 2017.
- 3a Reunión General BIOSTATNET 2017.
  M. Bofill Roig, G. Gómez Melis. Presentation: Sample size determination using composite binary endpoints. Santiago de Compostela (Spain), 20-21 January, 2017.
- II Jornadas Científicas de Estudiantes de la SEB (II-JJSEB).
  M. Bofill Roig, G. Gómez Melis. Presentation: The efficient choice of a primary binary endpoint for sample size assessment. Barcelona (Spain), 8-9 September, 2016.
- International Society for Clinical Biostatistics Conference 2016 (ISCB 2016).
  M. Bofill Roig, G. Gómez Melis. Presentation: The efficient choice of a primary binary endpoint for sample size assessment. Birmingham (UK), 21-25 August, 2016.

PROFESSIONAL SOCIETY INVOLVEMENT

- Co-Chair of the *Adaptive Designs and Multiple Testing Procedures Joint Working Group*
  Section of the ROeS and the German Region of the IBS   2022–Present
- Member of the board of the Societat Catalana d'Estadística   2019–2022
- Member of the International Biometric Society (Spanish and ROeS regions)
- Member of the SEB-BIOSTATNET Mentoring Committee   2018–2022
- Member of the BIOSTATNET Spanish network

PARTICIPATION IN RESEARCH EVENTS

- Chair Local Organising Committee and Scientific Program Committee. Workshop Adaptive Designs and Multiple Testing Procedures, April 2024.
- Volunteer in the Local Organising Committee. XXIXth International Biometric Conference.
  Barcelona (Spain), 8-13 July 2018.
- Local Organising Committee and Scientific Program Committee. III Jornadas Científicas de Estudiantes de la SEB. Bilbao (Spain), 18-19 Jan. 2018.
- Local Organising Committee and Scientific Program Committee. II Jornadas Científicas de Estudiantes de la SEB. Barcelona (Spain), 8-9 Sept. 2016.

SKILLS

- **Computer Languages:** fluent in R, LaTeX; some C, SAS, MINITAB, HTML

LANGUAGES

- **Spanish** and **Catalan**: Mothertongue
- **English:** Advanced Level (C1)