

## **Montserrat Guillen**

*Curriculum Vitae*

*December 2024*

### **Address**

Dept. of Econometrics, Riskcenter-IREA  
University of Barcelona  
Av. Diagonal, 690  
08034 Barcelona, Spain

Telf: +34 934 037 039  
Fax: +34 934 021 821  
e-mail: mguillen<at>ub.edu  
<http://www.ub.edu/riskcenter/guillen>

### **Personal Background**

Birth date: January 25, 1964, female. Citizenship: Spanish, Married, one son.

### **Summary**

#Years research experience: 30+

#Citations: 3,296 (WoS), 3,710 (Scopus), 10,161 (ScholarGoogle)

h index: 33 (Web of Science), 36 (Scopus), 54 (Google, rank #11 and #9 in insurance and actuarial science, 1# woman)

ResearcherID: E-1407-2011 Scopus Author ID: 7103020782

<http://orcid.org/0000-0002-2644-6268>

Only woman in the top rank of Spanish Economists

<https://research.com/scientists-rankings/economics-and-finance/es>

### **Research interests**

Risk, insurance, actuarial statistics, data science, risk analytics, long-term care insurance, statistical methods for insurance and finance, quantitative methods for risk management, longevity, pension-saving investment, telematics, motor insurance.

### **Education**

University of Barcelona (Spain), PhD Economics, 1992

University of Essex (United Kingdom), MA Social Science Data Analysis, 1993

University of Barcelona (Spain), MSc Mathematics, 1987, esp. Mathematical Statistics

UNED (Spain) MA Risk Management and Insurance, 2006

### **Academic Positions**

ICREA Academia Distinguished Professor 2012-2016, 2019-2024.

Full Professor – Catedrática de Universidad - Departament of Econometrics, Statistics and Applied Economics, University of Barcelona, 2001-present.

Associate Professor – Profesora Titular de Universidad, UB 1993-2001.

Teaching Assistant, UB 1987-1993.

### **Visiting Academic Positions**

Honorary Visiting Professor in the Faculty of Actuarial Science and Insurance at City, University of London, 2015-2018, 2018-2021, 2021-present.

Visiting researcher at Consortium from Data Analytics in Risk, the University of California, Berkeley (August 2018).

Visiting Professor, Université Paris II Panthéon-Assas (France), since 1993 (1 month/year) to 2016.

Visiting Researcher, University of Texas at Austin (USA), 1993-1994.

## **Editorial appointments (current and past)**

Chief-editor **North American Actuarial Journal**. 2023 (co-editor 2015-2022), Senior editor **ASTIN Bulletin – The Journal of the International Actuarial Association**. 2009-2022, Associate editor **Geneva Risk and Insurance Review** 2012-, Associate editor **Insurance: Mathematics and Economics** 2017-, Associate editor **Insurance Markets and Companies: Analyses and Actuarial Computations** 2009-, Editor **SORT (Statistics and Operations Research Transactions)**. 2015-,

Member of the editorial board **Anales del Instituto de Actuarios Españoles**. 2008-, Member of the editorial board **Risks**, 2012-, Member of the editorial board **Journal of Financial Risk Management**, 2012-, Associate editor **Insurance and Risk Management Journal** 2011-, Associate editor **Journal of Risk and Insurance**. 2005-2018, Member of the editorial board **The Scientific World Journal**, 2013-2015, Associate editor **Gerencia de Riesgos y Seguros**. 2007-2016, Chief-editor **SORT (Statistics and Operations Research Transactions)**. 2006-2014

## **Other Positions**

Director of RISKcenter, Research Group on Risk in Insurance and Finance, 1998-

The research involves 20 permanent researchers working in **actuarial statistics** and quantitative finance. Based on a peer-reviewed evaluation in all areas of science, the group was awarded in January 2023 the highest category (top tier) and obtained 60,000 Euros.

Main coordinator and founder of the section on “Risk Analysis” in the **Spanish Society of Statistics and Operations Research**, 2018-

Member of the jury of the **Science National Awards on Statistics** in Spain. This is the maximum level award in recognition of contributions in Statistics by Spanish statisticians. Only statisticians with outstanding contributions, international recognition and lifelong dedication to Statistics have received it. The price is awarded by the King of Spain in an Official ceremony in October each year. I have been in the jury twice representing the Royal Academies in Spain. From 2020 to 2022.

Member of the Board of Trustees, Fundación MAPFRE, 2015-

Appointed member of the Statistical Learning in Actuarial Applications Working Party, Institute and Faculty of Actuaries, IFoA Data Science Research Section. United Kingdom, 2021-

President of the European Group of Risk and Insurance Economists, EGRIE. The Geneva Association, 2011.

Coordinator of the UB team for the AXA Research Fund project “How can private long-term care insurance supplement state systems? The UK as a case study” coordinated by Raphael Wittenberg, PSSRU, London School of Economics 2010-2012.

Coordinator of Research Network on Surveys and Quality of Statistical Information (Catalonia and France), Coordinator, 1997-2005.

PI of UB at the Network on quality and cost-effectiveness in long-term care and dependency prevention UE: VS/2015/0276 coordinated by the London School of Economics and Political Science. 2015-2021.

## **International books**

Uribe, J. and Guillen, M. (2020) **Quantile Regression for Cross-Sectional and Time Series Data: Applications in Energy Markets Using R**. SpringerBriefs in Finance. Springer. ISBN: 978-3-030-44503-4

- Belles-Sampera, J., Guillén, M., & Santolino, M. (2017) **Risk Quantification and Allocation Methods for Practitioners**. University of Chicago Press Economics Books. Atlantis Studies in Computational Finance and Financial Engineering ISBN: 9789462984059
- Frees, E.W, Derrig, R., Meyer, G. (Eds) (2014) **Predictive Modeling Applications in Actuarial Science. Volume I. Regression with Categorical Dependent Variables**. Chapter 3 by Guillen, M. Cambridge University Press.
- Bolancé, C., Guillen, M., Gustafsson, J. and Nielsen, J.P. (2012) **Quantitative operational risk models** (with examples in SAS and R), Chapman & Hall/CRC.  
<http://www.crcpress.com/product/isbn/9781439895924> ISBN: 978-1-4398-9592-4

### **Submitted Manuscripts**

Bolancé, C., Cao, R. and Guillen, M. (2023) “Conditional likelihood based inference on single index-models for motor insurance claim severity” under review in **SORT-Statistics and Operations Research Transactions**.

Bagkavos, D., Nielsen, J.P and Guillen, M. (2023) “Nonparametric conditional survival function estimation with plug-in bandwidth and robust model selection” under review in **Journal of Business and Economic Statistics**.

### **Published articles**

- [1] Masello, L., Sheehan, B., Castignani, G., Guillen, M., Murphy, F. (2024) “Predictive Modeling for Driver Insurance Premium Calculation using Advanced Driver Assistance Systems and Contextual Information” **IEEE-Intelligent Transportation Systems Transactions**, accepted.
- [2] Bagkavos, D., Guillen, M. and Nielsen, J. P. (2024) “Nonparametric conditional survival function estimation and plug-in bandwidth selection with multiple covariates” **TEST**, 1-33. (**Journal of the Spanish Statistics and operations Research Society**).
- [3] Asenjo, S., Soler-Garcia, A., Palomo, A. M., Jordana, A. H., Guillen, M., Bolancé, C., & Vilarrubí, S. N. (2024) “Analysis of the Surprise Question as a tool for predicting death in neonates” **European Journal of Pediatrics**, accepted.
- [4] McDonnell, K., Sheehan, B., Murphy, F. and Guillen, M. (2024) “Are electric vehicles riskier? A comparative study of driving behaviour and insurance claims for internal combustion engine, hybrid and electric vehicles” **Accident Analysis & Prevention**, 207, 107761.
- [5] Yanez, J. S., Guillén, M. and Nielsen, J. P. (2024) “Weekly dynamic motor insurance ratemaking with a telematics signals bonus-malus score” **ASTIN Bulletin: The Journal of the IAA**, 1-28.
- [6] Toro-Pérez, D., Limonero, J. T., Bolancé, C., Guillen, M., Navarro-Vilarrubí, S. and Camprodón-Rosanas, E. (2024) “Suffering in children and adolescents in paediatric palliative care in Spain: psychometric properties of the qESNA scale” **Anales de Pediatría** (English Edition), 101(4), 238-248.
- [7] Toro-Pérez, D., Bolance, C., Camprodón-Rosanas, E., Guillen, M., Navarro-Vilarrubí, S. and Limonero, J.T. (2024), “Psychological factors and quality of life in children with palliative needs: Dataset”, **Mendeley Data**, V1, <https://doi.org/10.17632/xt585dkhgt.1>
- [8] Guillen, M., Pérez-Marín, A. M. and Nielsen, J. P. (2024) “Pricing weekly motor insurance drivers’ with behavioral and contextual telematics data” **Heliyon**, 10(16).
- [9] Santolino, M., Guillen, M., Vidal-Llana, X. (2024). Desigualdad de la incertidumbre económica subjetiva y perspectivas económicas individuales durante la pandemia. **Revista de Métodos Cuantitativos para la Economía y la Empresa**, 1-18. <https://doi.org/10.46661/rev.metodoscuant.econ.empresa.7558>

- [10] Toro-Pérez, D., Camprodon-Rosanas, E., Vilarrubí, S. N., Bolancé, C., Guillen, M. and Limonero, J. T. (2023) “Evaluating Quality of Life in Pediatric Palliative Care: A Cross-Sectional Analysis of Children’s and Parents’ Perspectives” *European Journal of Pediatrics*, 83, 3, 1305-1314. <https://link.springer.com/article/10.1007/s00431-023-05330-4>
- [11] Salas-Molina, F., Rodriguez Aguilar, J.A. and Guillen, M. (2023) “A multidimensional review of the cash management problem” *Financial Innovation*, 9(1), 67. <https://doi.org/10.1186/s40854-023-00473-7>
- [12] Masello, L., Castignani, G., Sheehan, B., Guillen, M. and Murphy, F. (2023) “Using contextual data to predict risky driving events: A novel methodology from explainable artificial intelligence” *Accident Analysis & Prevention*, 184, 106997. <https://doi.org/10.1016/j.aap.2023.106997>
- [13] Toro-Pérez, D., Limonero, J.T.; Guillen, M., Bolancé, C., Navarro-Vilarrubí, S., and Camprodon-Rosanas, E. (2023), “QoL pediatric palliative care dataset”, *Mendeley Data*, V1, <https://doi.org/10.17632/m479gs98vz.1>
- [14] Toro-Pérez, D., Camprodon-Rosanas, E., Vilarrubí, S. N., Bolancé, C., Guillen, M. and Limonero, J. T. (2023) “Assessing well-being in pediatric palliative care: A pilot study about views of children, parents and health professionals” *Palliative & Supportive Care*, 37(4), 1-9. <https://doi.org/10.1017/S1478951523000251>
- [15] Restrepo, N., Uribe, J. M. and Guillen, M. (2023) “Price bubbles in lithium markets around the world” *Frontiers in Energy Research*, 11, 1204179. <https://doi.org/10.3389/fenrg.2023.1204179>
- [16] Constantinescu, C., Guillen, M. and Steffensen, M. (2023) “Continuing Risks” *Risks*, 11, 1, 10. <https://doi.org/10.3390/risks11010010>
- [17] Vidal-Llana, X., Uribe, J. M. and Guillén, M. (2023) “European stock market volatility connectedness: The role of country and sector membership” *Journal of International Financial Markets, Institutions and Money*, 82, 101696. <https://doi.org/10.1016/j.intfin.2022.101696>
- [18] Guillen, M., Bardes Robles, I., Bordera Cabrera, E., Acebes Roldán, X., Bolancé, C., Jorba, D. and Moriña, D. (2022) “Acute respiratory infection rates in primary care anticipate ICU bed occupancy during COVID-19 waves” *Plos one*, 17(5), e0267428. <https://doi.org/10.1371/journal.pone.0267428>
- [19] Pitarque, A. and Guillen, M. (2022) “Interpolation of quantile regression to estimate driver’s risk of traffic accident based on excess speed” *Risks*, 10, 1, 19. <https://doi.org/10.3390/RISKS10010019>
- [20] Pons-Novell, J. and Guillen, M. (2022) “The Autonomous Capacity of the Elderly Population in Spain for Shopping and Preparing Meals” *International Journal of Environmental Research and Public Health*, 19 (22), 14828.
- [21] Vidal-Llana, X. and Guillén, M. (2022) “Cross-sectional quantile regression for estimating conditional VaR of returns during periods of high volatility” *The North American Journal of Economics and Finance*, 63, 101835. <https://doi.org/10.1016/j.najef.2022.101835>
- [22] Guillen, M., Bolancé C., Frees, E.W. and Valdez, E.A. (2021) “Case study data for joint modeling of insurance claims and lapsation” *Data in brief* 39, 107639 <https://doi.org/10.1016/j.dib.2021.107639>
- [23] Guillen, M and Cevolini, A. (2021) “Using risk analytics to prevent accidents before they occur – the future of insurance”. *Journal of Financial Transformation* 54, 76-83.
- [24] Santolino, M., Belles-Sampera, J., Sarabia J.M. and Guillen, M. (2021) “An examination of the tail contribution to distortion risk measures” *Journal of Risk*, 23(6), 1-25.

- [25] Guillen, M., Bermúdez, L. and Pitarque, A. (2021). Joint generalized quantile and conditional tail expectation regression for insurance risk analysis. *Insurance: Mathematics and Economics*, 99, 1-8. <https://doi.org/10.1016/j.insmatheco.2021.03.006>
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- [27] Guillen, M., Nielsen, J. P. and Pérez-Marín, A. M. (2021) “Near-miss telematics in motor insurance” *Journal of Risk and Insurance* 88 (3), 569-589 <https://doi.org/10.1111/jori.12340>
- [28] Frees, E. W., Bolancé, C., Guillen, M. and Valdez, E. A. (2021) “Dependence modeling of multivariate longitudinal hybrid insurance data with dropout” *Expert Systems with Applications*, 185, 115552. <https://doi.org/10.1016/j.eswa.2021.115552>
- [29] Chen, A., Guillen, M., & Rach, M. (2021) “Fees in tontines” *Insurance: Mathematics and Economics*, 100, 89-106. <https://doi.org/10.1016/j.insmatheco.2021.05.001>
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- [31] Alcañiz, M., Guillen, M., & Santolino, M. (2021) “Differences in the risk profiles of drunk and drug drivers: Evidence from a mandatory roadside survey”, *Accident Analysis & Prevention*, 151, 105947. <https://doi.org/10.1016/j.aap.2020.105947>
- [32] Guillen, M., Pérez-Marín, A.M. and Alcañiz, M. (2021) “Percentile charts for speeding based on telematics information” *Accident Analysis & Prevention*, 150 ,105865. <https://doi.org/10.1016/j.aap.2020.105865>
- [33] Piulachs, X., Andrinopoulou, E. R., Guillén, M. and Rizopoulos, D. (2021) “A Bayesian joint model for zero-inflated integers and left-truncated event times with a time-varying association: Applications to senior health care” *Statistics in Medicine*, 40(1), 147-166. <https://doi.org/10.1002/sim.8767>
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- [36] Pesantez-Narvaez, J., Guillen, M. and Alcañiz, M. (2021) “RiskLogitboost Regression for Rare Events in Binary Response: An Econometric Approach” *Mathematics* , 9, 579. <https://doi.org/10.3390/math9050579>
- [37] Bolancé, C. and Guillen, M. (2021) “Nonparametric Estimation of Extreme Quantiles with an Application to Longevity Risk” *Risks*, 9(4), 77. <https://doi.org/10.3390/risks9040077>
- [38] Golden, L.L., Brockett, P.L., Guillen. M. and Manika, D. (2020) “aPRIDIT unsupervised classification with asymmetric valuation of variable discriminatory worth” *Multivariate Behavioral Research*, 55(5), 685-703. <https://doi.org/10.1080/00273171.2019.1665979>
- [39] Bolancé, C., Guillen, M. and Pitarque, A. (2020) “A Sarmanov Distribution with Beta Marginals: An Application to Motor Insurance Pricing”, *Mathematics*, 8(11), 2020. <https://doi.org/10.3390/math8112020>
- [40] Arvelo, E., de Armas, J. and Guillen, M. (2020) “Assessing the Distribution of Elderly Requiring Care: A Case Study on the Residents in Barcelona and the Impact of COVID-19”, *International Journal of Environmental Research and Public Health*, 17(20), 7486. <https://doi.org/10.3390/ijerph17207486>

- [41] Uribe, J. M. and Guillen, M. (2020) “Generalized Market Uncertainty Measurement in European Stock Markets in Real Time” *Mathematics*, 8(12), 2148. <https://doi.org/10.3390/math8122148>
- [42] Guillen, M., Nielsen, J.P., Pérez-Marín, A.M. and Elpidorou, V. (2020) “Can automobile insurance telematics predict the risk of near-miss events?” *North American Actuarial Journal*, 24, 1, 141-152. <https://doi.org/10.1080/10920277.2019.1627221>
- [43] Pesantez-Narvaez, J. and Guillen M. (2020) “Weighted Logistic Regression to Improve Predictive Performance in Insurance” *Advances in Intelligent Systems and Computing*, 894, 22-34. [https://doi.org/10.1007/978-3-030-15413-4\\_3](https://doi.org/10.1007/978-3-030-15413-4_3)
- [44] Sun, S., Bi, J., Guillen, M. and Pérez-Marín, A. M. (2020) “Assessing driving risk using internet of vehicles data: an analysis based on generalized linear models” *Sensors*, 20(9), 2712. <https://doi.org/10.3390/s20092712>
- [45] Uribe, J., Mosquera-López, S. and Guillen, M. (2020) “Characterizing electricity market integration in Nord Pool” *Energy*, 208, 118368. <https://doi.org/10.1016/j.energy.2020.118368>
- [46] Pesantez-Narvaez J. and Guillen M. (2020) “Penalized logistic regression to improve predictive capacity of rare events in surveys” *Journal of Intelligent and Fuzzy Systems*, 38(5), 5497-5507. <https://doi.org/10.3233/JIFS-179641>
- [47] Monteverde, M., Palloni, A., Guillen, M. and Tomas, S. (2020) “Early poverty and future life expectancy with disability among the elderly in Argentina” *Revista Latinoamericana de Población*, 14(26), 5-22. <https://doi.org/10.31406/relap2020.v14.i1.n26.1>
- [48] Vida-Llana, X. and Guillen Estany, M. (2020) “Advanced analytics pricing for the calculation of post-covid19 scenarios in automobile insurance” *Anales del Instituto de Actuarios Españoles*, 26, 157-179 [https://doi.org/10.26360/2020\\_7](https://doi.org/10.26360/2020_7)
- [49] Sarabia, J.M., Guillen, M., Chuliá H. and Prieto, F. (2019) “Tail risk measures using flexible parametric distributions” *SORT-Statistics and Operations Research Transactions*, 43, 2, 223-236. <https://doi.org/10.2436/20.8080.02.86>
- [50] Guillen, M., Sarabia, J.M., Prieto, F. and Jordá, V. (2019) “Aggregation of dependent risks with heavy-tail distributions” *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, 27, Sup. 1, 77-88. <https://doi.org/10.1142/S021848851940004X>
- [51] Guillen, M., Nielsen, J.P., Ayuso, M. and Pérez-Marin, A.M. (2019) “The use of telematics devices to improve automobile insurance rates” *Risk Analysis*, 39(3), 662-672. <https://doi.org/10.1111/risa.13172>
- [52] Denuit, M., Guillen, M. and Trufin, J. (2019) “Multivariate credibility modeling for usage-based motor insurance pricing with behavioural data” *Annals of Actuarial Science*, 13(2), 378-399. <https://doi.org/10.1017/S1748499518000349>
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## PhD supervision

- Vidal-Llana, J.J. (2023) *Essays on Machine Learning for Risk Analysis in Finance, Insurance and Energy*, University of Barcelona, PhD in Business. Dir: Montserrat Guillen / Jorge M. Uribe.
- Pitarque Méndez, A. (2022) *Essays on Estimation, Prediction and Evaluation of Insurance Risk*, University of Barcelona, PhD in Business. Dir: Montserrat Guillen.
- Pesantez-Narvaez, J. (2021) *Risk Analytics in Econometrics*. PhD in Economics. Dir: M. Alcañiz / Montserrat Guillen.
- Padilla-Barreto, A. (2019) *Cuantificación del riesgo global del asegurado para mejorar la tarificación*, Universitat Politècnica de Catalunya. PhD in Statistics. Industrial PhD. Dir: C. Bolancé / Montserrat Guillen.
- Uribe, J.M. (2018) *Essays on Risk and Uncertainty in Economics and Finance*. University of Barcelona, PhD in Economics. Dir: Helena Chulià / Montserrat Guillen. **Best thesis award UB**.
- Piulachs, X. (2017) *Joint Modeling of Longitudinal and Time-to-Event Data with Applications in Health Insurance*. University of Barcelona, PhD in Statistics. Dir: Montserrat Guillen / Ramon Alemany.
- Belles-Sampera, J. (2015) Quantitative risk assessment, aggregation functions and capital allocation problems. University of Barcelona, PhD in Business. Dir: Montserrat Guillen / Miguel Santolino.
- Ornelas, A. (2015) La Mortalidad y la longevidad en la Cuantificación del Riesgo Actuarial para la Población de México Dir: Catalina Bolancé / Montserrat Guillen
- Guelman, L. (2015) *Optimal personalized treatment learning models with insurance applications*, University of Barcelona, PhD in Economics.
- Ferri, A. (2012) *Estructuras de dependencia aplicadas a la gestión de riesgos en Solvencia II*. Universitat de Barcelona, PhD in Management. (co-supervisor: Lluís Bermúdez).
- Solé-i-Auró, A. (2009) *The impact of immigration on health, longevity and dependency of the elderly in the Spanish and European population*. Universitat de Barcelona, PhD in Management. (co-supervisor: Eileen M. Crimmins).
- Blay, D. (2009) *Sistemas de cuidados de larga duración para la cobertura y la financiación de las situaciones de dependencia: seguro privado e hipoteca inversa*. Universitat de Barcelona, PhD in Management. **Best thesis award UB**. Awarded by the Catalan Society of Economics with the Insurance Prize in 2011.
- Carrillo, M. (2007) *Una metodología alternativa para la tarificación en el seguro de automóvil en España*. Universitat de Barcelona, PhD in Management.
- Pérez-Marín, A.M. (2006) *Survival methods for the analysis of customer lifetime duration in insurance*, Universitat de Barcelona, PhD in Management (co-supervisor: Jens Perch Nielsen). **Best thesis award UB**.

- Monteverde, M. (2004) *Discapacidades de las personas mayores en España: prevalencia, duraciones e impacto sobre los costes de cuidados de larga duración*, PhD in Economics, Universitat de Barcelona.
- Pujol Jover, M. (2004) *El valor y la fidelidad de los asegurados en el ramo del automóvil*, PhD in Management, Universitat de Barcelona.
- Salsas Forn, P. (1999) *Anàlisi microeconòmica de la insolvència empresarial en la presència de dades atípiques*, PhD in Economics, Universitat de Barcelona.
- Bolancé Losilla, C. (1999) *Estimación nucleo transformada en el análisis del coste de reclamaciones en el seguro del automóvil*, PhD in Management, Universitat de Barcelona.
- Ayuso Gutiérrez, M. (1998) Modelos económicos de detección del fraude en el seguro del automóvil, PhD in Economics, Universitat de Barcelona. Best thesis award UB.
- Alcañiz Zanón, M. (1996) Modelos de Poisson generalizados con una variable de exposición al riesgo, PhD in Economics, Universitat de Barcelona.

#### **External/Third party PhD advisor**

- Buch-Kromann, T. (2009) [Industrial PhD programme Denmark] *Large loss models for general insurance*. University of Copenhagen.
- Thuring, F. (2012) [Industrial PhD programme Denmark] *Profitable customer retention in insurance companies*. Cass Business School, City University, London.

#### **Master thesis advisor (since 2010)**

- Orteu, A.P. (2023) "Models dif-in-dif en dades telemàtiques d'accidents d'automòbil". Master in Statistics and Operations Research, UPC-UB.
- Pitarque Méndez, A. (2019) "La regressió quantílica per a les mesures de risc". Master in Statistics and Operations Research, UPC-UB.
- Fors Soler, A. (2019) "Modelización de la probabilidad de superar análisis bioquímicos de calidad (en la industria farmacéutica)". Master in Statistics and Operations Research, UPC-UB.
- Pérez Torre, V. (2018) Analysis of PD-LGD correlation effects on the minimum capital requirement. Master in Actuarial Science and Finance, UB.
- Toro, F. (2018) Who pollutes more? Gender differences in consumptions patterns. Master in Economics, UB (co-supervisor: Monica Serrano)
- Cartanya, A. (2017) Esdeveniments recurrents, predicción i cost-benefici de la publicitat a televisió. Master in Statistics and Operations Research, UPC-UB.
- Vicente, Z. (2014) Efectos del diseño muestral en la Encuesta de Salud de Cataluña. Master in Statistics and Operations Research, UPC-UB.
- Schulze Darup, A. (2014) Consumer Preferences for Electric Vehicles – Evidence from Germany. Master in Economics, UB.
- Vicente, Z. (2014) Efectos del diseño muestral en la Encuesta de Salud de Cataluña. Master in Statistics and Operations Research, UPC-UB.
- Urbina, J. A. (2013) Quantifying Optimal Capital Allocation Principles based on Risk Measures. Master in Statistics and Operations Research, UPC-UB.
- Casanovas, J. (2012) [Measuring Solvency in underwriting risk for credit insurance] La medición de la solvencia del riesgo de suscripción en el ramo de crédito. Master in Business, Finance and Insurance, UB.

- Catot, N. (2011) [Comparison and implementation of different quantitative approaches to credit risk] Comparación e implementación de diferentes aproximaciones cuantitativas al riesgo de crédito. Master in Business, Finance and Insurance, UB. Best thesis award by VidaCaixa.
- Ornelas, A. (2011) [Analysis and pricing of group insurance] Análisis y Tarificación en Seguros de Salud Grupo. Master in Statistics and Operations Research, UB/UPC.
- Malo, N. (2010) [A practical application of methods to quantify operational risk] Aplicación práctica de metodologías para la cuantificación del Riesgo Operacional. Master in Statistics and Operations Research, UB/UPC.

#### **Detail of grants received (only refereed R+D projects since 2017):**

- 2023-2025 “PROYECTO ESTRATÉGICO DE CIBERSEGURIDAD EN ESPAÑA SOBRE ANÁLISIS DE RIESGOS” C090/03. Funded EU Next Generation. INCIBE-UB. Director: Montserrat Guillen Estany & David Moriña Soler (16 members).
- 2023-2025 “Climate change: Risk management and insurance for a sustainable economy” 2023 CLIMA00012 Call for projects to finance research projects for mitigation and adaptation to climate change 2023. Director: Helena Chuliá Soler (16 members).
- 2023-2024 Ministerio de Ciencia e Innovación. Agencia Estatal de Investigación. Proyectos estratégicos orientados a la transición ecológica y a la transición digital “Analítica de datos en seguros: métodos e implicaciones para productos basados en el uso” TED2021-130187B-I00. Director: Montserrat Guillen Estany (7 members).
- 2020-2023 Ministerio de Ciencia e Innovación. Agencia Estatal de Investigación. Programas estatales de generación de conocimiento y fortalecimiento científico y tecnológico del sistema de I+D+I “Modelos Predictivos para el riesgo en Seguros y Finanzas” PID2019-105986GB-C21. Director: Montserrat Guillen Estany (16 members).
- 2019-2021 Fundación BBVA. Ayudas a la investigación en Big Data 2018. “Risk Analytics: turning extremes into core knowledge” Director: Montserrat Guillen Estany (5 members).
- 2017-2019 Ministerio de Economía y Competitividad. Programa Estatal de Investigación Científica y Técnica de Excelencia, Subprograma Estatal de Generación de Conocimiento, modalidad 1, Proyectos de I+D. “Cuantificación y análisis de riesgos” ECO2016-76203-C2-2-P Director: Montserrat Guillen Estany (10 members).

#### **Participation in meetings**

##### **a) Keynote speaker (2010-)**

- Guillen, M. (2024) “The future of long-term saving: the research perspective” Innovative Pathways: Pensions, Fintech, and the Evolving Landscape. Bayes Business School, co-organized with Universities Superannuation Scheme Limited (USS). London (November 28).
- Guillen, M. (2024) “Telematics Insights on Time vs. Distance in Motor Insurance Pricing” Plenary speaker at the JOCO-2024. Joint Conference of the Sections of the International Actuarial Association. Brussels, Belgium (September 25).
- Guillen, M. (2024) “Telematics driving scores, real-time pricing and exposure to risk” St. Gallen Actuarial Seminar, Switzerland (February 29).
- Guillen, M. (2023) “Motor insurance with telematics driving data” ARC Actuarial Research Conference, Drake University, Des Moines, USA (July 31-August 2)

- Guillen, M. (2023) "Pricing motor insurance with telematics data" Chaire PARI, Paris France (November 15).
- Guillen, M. (2022) "Motor insurance with telematics driving data" Riskday ETH Zurich, (September 16)
- Guillen, M. (2022) "The pensions of a *bon-vivant* are called tontines" Meeting of the Royal Academy of Doctors, Girona (May 13-15)
- Guillen, M. (2021) "Big data en el sector seguros: de materia prima a razón de ser" EHU Universidad del País Vasco (Octubre 28)
- Guillen, M. (2021) "Big data en el sector seguros: de materia prima a razón de ser" Universitat de Valencia (Novembre 10)
- Guillen, M. (2021) "Big data en el sector seguros: de materia prima a razón de ser" CUNEF, Madrid (MARZO, 3)
- Guillen, M. (2021) "Near-misses for telematics pricing in automobile insurance" Heriot-Watt University (Decembre 1)
- Guillen, M. (2021) "Risk analysis of driving data with near-miss ratemaking" University of Connecticut Seminar series (April 5)
- Guillen, M. (2020) "Using Telematics in Motor Insurance. Can telematics data identify risky drivers?" ARGenesis/LSE/online London School of Economics, (October 19)
- Guillen, M. (2020) "Conditional tail expectation regression models for vehicle excess speed in driving data" OICA, Lyon-online <https://oica.univ-lyon1.fr/program/> (April 28)
- Guillen, M. (2020) "Can telematics Data Identify Risky Drivers?" Data Science Seminar XEurope. (September 16). <https://www.youtube.com/watch?v=DmBEDsoT7Go>
- Guillen, M. (2020) "Modelos predictivos del riesgo y aplicaciones a los seguros" Funcas, Madrid, on-line. (October 8) <https://www.youtube.com/watch?v=PwbkUPe3hfo>
- Guillen, M. (2019) "How will telematics and driving data change ratemaking in automobile insurance?" Ulm University. Mathematics and Actuarial science Seminar (December 5)
- Guillen, M. (2019) "Driving data for automobile insurance: will telematics change ratemaking?" SAA Annual Meeting 2019. Lucerne (Switzerland) (August 30).
- Guillen, M. (2019) "Driving data for automobile insurance: will telematics change ratemaking?" EM-Lyon. Lyon (France) (March 7).
- Guillen, M. (2019) "Driving Data: telematics to improve insurance rates" SFRA 2019 Colloquium and International Workshop on Machine Learning for Risk and Insurance, Scottish Financial Risk Academy, International Centre for Mathematical Sciences, Edinburgh (United Kingdom) (February 4).
- Guillen, M. (2018) "Is motor insurance ratemaking going to change with telematics and semi-autonomous vehicles?" Consortium for Data Analytics in Risk, Center for Risk Management Research, University of California, Berkeley (USA) (August 28)
- Guillen, M. (2018) "Driving data: from Poisson to risk regression models" Workshop Data Science, Instituto de Matemáticas de la Universidad de Sevilla, Sevilla (September 13-14).
- Guillen, M. (2018) "Data Science in Insurance", Graduate School of Global Insurance and Pension's, SKKU, Seoul (Korea) (October, 13).
- Guillen, M. (2018) "Uncertainty advantage: Insurers should face technological innovations" Modern applied statistics: A seminar in the honour of Erik Bølviken at his 70'th birthday. University of Oslo, Oslo (Norway) (June 8).
- Guillen, M. (2018) "Uncertainty advantage: the insurance industry faces technological innovation" University of Tel-Aviv (Israel) in the meeting of the Spanish Real Academia de Ciencias Económicas y Financieras, under the chair of Prof. Dr. Jean Askenasyj, Tel-Aviv (Israel) (May 16).
- Guillen, M. (2017) "Big mistakes of data analytics when applied to risk and insurance" Actuarial Science Seminar, National Bank of Belgium, Brussels (Belgium) [Plenary session] (Sept. 14)

- Guillen, M. (2017) "Per què les grans empreses necessiten un Chief Data & Analytics Officer?" Estadística i Data Science: l'evolució o l'extinció dels estadístics. Societat Catalana d'Estadística, Barcelona, (June 1).
- Guillen, M. (2016) "Fundamentals of risk measurement and aggregation for insurance applications" University of Andorra. 13<sup>th</sup> International Conference on Modeling Decisions for Artificial Intelligence. (September, 19-21)- [Plenary session] (joint paper with C. Bolancé and M. Santolino).
- Guillen, M. (2016) "How much risk is too much?" Science and Society Lecture Series. University of Liverpool (March, 15)
- Guillen, M., Guelman, L.; Pérez-Marín, A.M. (2015) "Uplift predictive modeling in pricing, retention and cross selling of insurance policies" Actuarial and Financial Mathematics Conferences. Brussels (February, 5-6). [Plenary session].
- Guillen, M. (2015) "Pricing and marketing insurance in the digital era" Plenary session "The 19th International Congress on Insurance: Mathematics and Economics – IME 2015". University of Liverpool, United Kingdom, (June 24-26). [Plenary session].
- Guillen, M. and Guelman, L. (2014) "New trends in Predictive Modelling: the Success Story of Uplift Models" R in insurance conference. London. (July, 14).
- Guillen, M. (2010) "Enveliment, dependència i previsió de la despesa individual" *Jornada d'Atenció a la Dependència: qualitat dels serveis, un repte per a la sostenibilitat*, organized by La Unió at auditori de l'IDEC, Universitat Pompeu Fabra, Barcelona (May, 19).
- Guillen, M. (2010) "El cost de la dependència" Curs sobre el cost de la salut. "Els juliols" Universitat de Barcelona. (July, 16).

#### b) International Congresses and Symposia (since 2017-, local meetings omitted)

- Bagkavos, D., Nielsen, J.P and Guillen, M. (2023) "Nonparametric conditional survival function estimation with plug-in bandwidth and robust model selection" 35th Panhellenic and **1st International Statistics Conference Greek Statistical Institute** (May 25-26).
- Bagkavos, D., Nielsen, J.P and Guillen, M. (2023) "Robust and flexible model selection for multivariate local linear regression" **CFE-CMS 16th International Conference of the ERCIM WG on Computational and Methodological Statistics** HTW Berlin (December 16-18)
- Guillen, M., Pérez-Marin, A.M. & Vidal-Llana, J.J. (2023) "Non-crossing neural network quantile regression estimation for driving data with telematics" Washington, DC (August 6-9), <https://www.aria.org/>
- Vidal-Llana, J.J. & Guillen, M. (2023) "Non-Crossing Neural Network Quantile Regression Estimation for Driving Data with Telematics." European Actuarial Day (June 27). <https://www.actuarial-events.com/event/454d1d84-f301-494e-bfc1-d781b24ba1e2/summary>
- Vidal-Llana, J.J. & Guillen, M. (2023) "Non-crossing neural network regression estimation for driving data with Telematics" Insurance Data Science, City University, London (June 15-16 ) [https://insurancedatascience.org/project/2023\\_london/](https://insurancedatascience.org/project/2023_london/)
- Vidal-Llana, X., Salort, C. Coia, V. & Guillen M. (2022) "Non-Crossing Dual Neural Network: Joint Value at Risk and Conditional Tail Expectation regression with non-crossing conditions" IME, Heriot-Watt University, Edinburg (July 4-7). <https://www.icms.org.uk/events/2023/IME2023>
- Fernández-Fontelo. A., Guillen, M. & Moriña, D. (2023) "Measuring the impact of Covid-pandemic on health insurance associated services demand" SEIO 2023. Elche (November 7-10).
- Vidal-Llana, J.J. & Guillen, M. (2023) "Non-crossing neural network quantile regression estimation for driving data with telematics" SEIO 2023. Elche (November 7-10).

- Fernández-Fontelo. A., Puig, P., Guillen, M. & Moriña, D. (2022) "Modelling the impact of Covid-19 pandemics on health insurance associated services demand" RISK2022 8th Workshop on Risk Management and Insurance Research. Barcelona (October 20-21).
- Sarabia, J.M. & Guillen, M. (2022) "Aggregation of Dependent Risks: A Survey" RISK2022 8th Workshop on Risk Management and Insurance Research. Barcelona (October 20-21).
- Vidal-Llana, X., Coia, V. & Guillen M. (2022) "Alternative scoring function specifications for estimating Value at Risk and Conditional Tail Expectation" RISK2022 8th Workshop on Risk Management and Insurance Research. Barcelona (October 20-21).
- Vidal-Llana, X., Coia, V. & Guillen M. (2022) "Cross-Sectional Quantile Regression for Estimating Conditional VaR During Periods of High Volatility" 25<sup>th</sup> International Congress on Insurance, Mathematics and Economics Sydney (Australia) (July 12-15).
- Vidal-Llana, X.. & Guillen, M. (2022) "Estimation of conditional value at risk of returns during high volatility periods using cross-sectional quantile regression" EFMA 2022. Rome (Italy) (June 29-July 2).
- Vidal-Llana, X., Uribe, J.M. & Guillen, M. (2022) "External Spillover Index and Its Relation with GDP per Capita on European Countries" MAF 2022: Mathematical and Statistical Methods for Actuarial Sciences and Finance. Salerno (Italy) (April 20-22).
- Pesantez-Narvaez, J., Guillen, M., & Alcañiz, M. (2022) "A hybrid boosting-based machine for rare events in cross-sectional studies" Congreso de Investigación Aplicada a Ciencia de Datos – II Congreso Nacional de R Users Group. Quito (January, 24-28).
- Guillen, M., Nielsen, J.P. & Pérez-Marin; A.M. (2021) "Number of claims and number of near-misses for telematics pricing in automobile insurance" American Risk and Insurance Association Annual Meeting (August 4).
- Guillen, M. (2021) "Will telematics change ratemaking models in automobile insurance?" Insurance, Mathematics and Economics. invited session on Insurance Technology: Telematics Data Analysis (July 8)
- Guillen, M. (2021) "Number of claims and number of near-misses for telematics pricing in automobile insurance" 3<sup>rd</sup> Insurance Data Science Conference. London/online, (June, 18)
- Pesantez-Narvaez, J., Arroyo-Cañada, F.J., Argila-Irurita, A.M., Solé-Moro, M.L., & Guillen, M. (2020) "Monitoring web-based evaluation of online reputation in Barcelona" Congress on Intelligent Systems. India, September 5-6.
- Pesantez-Narvaez, J., Guillen, M., & Alcañiz, M. (2020) "Modelling Subjective Happiness with a Survey Poisson Model and XGBoost using an Economic Security Approach" Congress on Intelligent Systems. India, September 5-6.
- Pesantez-Narvaez, J., Guillen, M., & Alcañiz, A. (2020) "Modelling Subjective Happiness with a Survey Poisson Model and XGBoost using an Economic Security Approach" 4th International Scientific Conference on IT, Tourism, Economics, Management and Agriculture (ITEMA). Belgrade, October 8.
- Pesantez-Narvaez, J., Guillen, M., & Alcañiz, M. (2020) "A Synthetic Penalized Logitboost to Model Mortgage Lending with Imbalanced Data" The Third International Conference on Data Science & Social Research. Bari, December 10-11.
- Pitarque, A. Guillen, M. (2020) "An algorithm to fit conditional tail expectation regression models for vehicle excess speed in driving data" 3rd International Conference on Advanced Research Methods and Analytics (CARMA 2020), Valencia, July 8-9.
- Pitarque, A., Guillen, M. (2020) "Joint Generalized Quantile and Conditional Tail Expectation Regression for Insurance Risk Analysis" 55th Actuarial Research Conference (ARC 2020), Nebraksa, August 10-12.
- Sun, S.; Bi, J.; Guillen, M.; Pérez-Marín, AM. (2020). "Regression scores to identify risky drivers from braking pulses". CARMA 2020 - 3rd International Conference on Advanced Research Methods and Analytics. Valencia, Spain. July 8-9.
- Pesáñez-Narváez, J., Alcañiz, M. and Guillén, M. (2019) "Is XGBoost better than logistic regression to predict claiming in motor insurance with telematics data?" XXVIII

- Congreso Nacional de Estadística e Investigación Operativa SEIO) y XII Jornadas de Estadística Pública. Alcoy, September 3-6.
- Pesantez-Narvaez, J. and Guillen, M. (2019) "Penalized logistic regression to improve predictive capacity in survey" V Conferencia de Matemáticos Ecuatorianos en Paris V-Conmate-P. Paris, April 18-19.
- Pesantez-Narvaez, J., Guillen., M. (2019) "Migration vs Cooperatives: Two paths towards economic security in Ecuador?" 34th National Conference for Labour Economics. Novara, September 12-13.
- Sarabia, J.M., Guillen, M., Gómez-Deniz, E., Prieto, F. and Jorda, V. (2019) "On three background risk models with semiheavy tailed marginals" 23rd International Congress on Insurance: Mathematics and Economics (IME), Munich, July 10-12.
- Denuit, M., Guillen, M., Truffin, J. (2019) "Multivariate credibility modeling for usage-based motor insurance pricing with behavioral data" 23rd International Congress on Insurance: Mathematics and Economics (IME), Munich, July 10-12.
- Guillen, M. (2018) "The transition towards semi-autonomous vehicle insurance: the contribution of usage-based data" International Congress of Actuaries, Berlin (Germany), June 4-8, 2018. (co-author A.M. Pérez-Marín) **Best paper award in Non-Life Section**.
- Pesantez, J. and Guillen, M. (2018) "Weighted logistic regression to improve predictive performance in insurance" MS'18 AMSE Girona, Girona, June 28-29, 2018.
- Bolancé, C., Guillen, M., Frees, E. and Valdez, E. (2018) "Modelización conjunta basada en cópula gaussiana para calcular el precio de varios ramos de seguros" Congreso Internacional de la SEIO, Oviedo, May 29-June 1, 2018.
- Guillen, M and Pérez-Marín, A.M. (2018) "The Contribution of Usage-based Data Analytics to benchmark Semi-autonomous Vehicle Insurance" MAF, eighth international conference on mathematical and statistical methods for actuarial sciences and finance. Madrid, April 4-6, 2018.
- Bolancé, C, Cao, R. and Guillen, M. (2018) "Estimación maximo-verosímil condicionada del modelo lineal generalizado con función de ligadura no paramétrica" RISK 2018, 7th Workshop on Risk Management and Insurance, Santander, April 25-27, 2018.
- Sarabia J.M., Guillen, M., Prieto, F. and Jorda, V. (2018) "Modelling dependent risks with heavy-tail marginals" RISK 2018, 7th Workshop on Risk Management and Insurance, Santander, April 25-27, 2018.
- Guillen, M. (2017) "Data Science and the Natural Evolution of Automobile Insurance" Big Data in Applied Economics, UAB, Bellaterra (Barcelona), October, 20, 2017.
- Guillen, M. (2017) "Solvency Requirement in a Unisex Stochastic Mortality Model" (joint with Elena Vigna and An Chen) International Actuarial Association Life Section Colloquium "Long-Term Saving in an Ageing World", Barcelona, October 22-24, 2017.
- Guillen, M. (2017) ("A Non-Homogeneous Semi-Markov Approach for the Calculation of the Balance Sheet of a Health Fund"( joint with Guglielmo D'Amico, Fulvio Gismondi, Jacques Janssen, Raimondo Manca and Ernesto Volpe di Prignano) International Actuarial Association Life Section Colloquium "Long-Term Saving in an Ageing World", Barcelona, October 22-24, 2017.
- Arroyo-Cañada, F.J., Pesantez, J., Argila A.M., Solé, M . and Guillen, M. (2017) "Visualizing web-based evaluation of hotel reputation in Barcelona" 2nd On/Off International Conference in Marketing Decision Making. Barcelona, Octubre 5, 2017.
- Piulachs, X., Rizopoulos, D., Andrinopoulou, E.R. and Guillen M. (2017) "Simultaneous modeling of counts with excess zeroes and left-truncated survival data with time-varying effects " XVI Spanish Biometrics Conference – CEB2017, Sevilla, Septeber 14-16, 2017.
- Guillen ,M. (2017) "Telematics and the natural evolution of pricing in motor insurance" Workshop on « Data science in Finance and Insurance » Louvain-la-Neuve (Belgium), September 15, 2017.

- Padilla-Barreto, A., Bolancé, M. and Guillen, M. (2017) "Joint modelling for customer lapses in the insurance sector" 21<sup>st</sup> Annual APRIA conference, Poznan (Poland), July 31, August 2, 2017.
- Bermúdez, L., Guillen, M. and Karlis, D. (2017) "A bivariate INAR(1) regression model for insurance claim counts" 21st International Congress on Insurance: Mathematics and Economics – IME 2017 Vienna (Austria), July 3–5, 2017.
- Frees, E.W., Valdez, E., Bolancé, C. and Guillen, M. (2017) "Joint Modeling of Customer Loyalty and Risk in Personal Insurance" 21st International Congress on Insurance: Mathematics and Economics – IME 2017 Vienna (Austria), July 3–5, 2017.
- Alemany, R.; Ayuso, M.; Guillen, M. (2017) "Impact of road traffic injuries on disability rates and long-term care costs in Spain". IV Workshop on the evaluation of public policies for sustainability long-term care in Spain. Albacete (Spain), June 29-30.
- Ayuso, M.; Guillen, M.; Valero, D. (2017) "What can determine the decisions in the management of savings after retirement?". VI Congreso Internacional Dependencia y Calidad de Vida. Madrid (Spain), May 23-24.
- Bermúdez, L., Guillen, M. and Karlis, D. (2017) "A bivariate INAR(1) regression model for insurance claim counts" Recent Developments in Dependence Modelling with Applications in Finance and Insurance - Fourth Edition, Aegina (Greece), 22-23 May.
- Guillen, M. (2017) "Aggregating and disaggregating risks and the role of the tail" [Plenary session] (joint paper with C. Bolancé and M. Santolino). Recent Developments in Dependence Modelling with Applications in Finance and Insurance - Fourth Edition, Aegina (Greece), May, 21-23.

## Awards

- 2022 Best Teacher's award in Statistics.** University of Barcelona & Technical University of Catalonia.
- 2023 Best group in statistical teaching innovation** in Catalonia ANDES (Data Analysis in Economics and Social Sciences).
- 2023 Distinction for excellence in teaching statistics,** Group ANDES (Data Analysis in Economics and Social Sciences).
- Bob Alting von Geusau Prize sponsored by the AFIR-ERM Section of the IAA for "Implementing Individual Savings Decisions for Retirement with Bounds on Wealth" published in the ASTIN Bulletin (Volume 48, Issue 1). AFIR-ERM colloquium in Paris from 10 to 14 May 2020
- International Congress of Actuaries, best paper award, 2018.
- SCOR prize to best research, 2016.
- Edad&Vida prize to managing savings after retirement, 2016
- ICREA Academia distinction 2011 and 2019
- Prize Fundación Edad&Vida Higinio Ranventós to "Strategies for Managing Savings after Retirement" 2016.
- Prize to the best Master Thesis supervision. VidaCaixa, 2011.
- Prize to the Best Paper in Insurance presented at RISK, 2011.
- Premio Internacional de Seguros Julio Castelo Matrán. Fundación MAPFRE, 2004.
- Best paper published by the American Risk and Insurance Association. Casualty Actuarial Society, 2003.
- Premi Ferran Armengol i Tubau de la Societat Catalana d'Economia. Institut d'Estudis Catalans, 2002.
- Premi memorial Àngels Jiménez de Seguretat Viària. Ajuntament de Barcelona, 1996.

## **Other activities**

Member of PhD thesis committees (LSE., UQàM- Québec, U. Barcelona, U. Autónoma de Madrid, City University, U. Catholique de Louvain, U. Extremadura, U. Las Palmas de Gran Canaria, U. Paris-Nanterre, Heriot-Watt University, Universidad Complutense de Madrid, University of Texas at Austin, Universidad Politécnica de Catalunya, Universidad Autónoma de Barcelona, U. Valencia, U. Cantabria, U Deusto).

General coordinator of AGAUR – Social Sciences 2019-2024.

Coordinator of evaluations in Agencia Española de Investigación. Strategic Lines, Risk, 2021. Member of ANECA-Academia accreditation committee. 2024-

General Coordinator of Doctoral Programmes, Faculty of Economics (University of Barcelona) 2001-2004.

Chief of Studies of Statistics, University of Barcelona, 1996-2002.

Member of **American Statistical Association** (live member 55+, started in 1987), American Risk and Insurance Association, Societat Catalana d'Estadística, Societat Catalana de Matemàtiques and International Actuarial Association (sections ASTIN and LIFE), Econometric Society (1987-1995).

Honorary Member of the Catalan College of Actuaries.

Member of the Royal European Academy of Doctors and Numerary Academician of the Spanish Royal Academy of Economics and Finance (Real Academia de Ciencias Económicas y Financieras). Vice.secretary general of RACEF.

Appointed member of the **Statistical Learning in Actuarial Applications** Working Party, **Institute and Faculty of Actuaries**, IFoA Data Science Research Section. United Kingdom, 2021-

## **Languages**

Spanish (native), Catalan (native), English (proficiency), French (proficiency), Russian (intermediate level) and German (basic level).