GUILLERMO LORENZO GÓMEZ

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Department of Civil Engineering and Architecture
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Date of birth February 10, 1989
Place of birth A Coruña, Spain
Nationality Spain
Current residence Pavia, Italy
Civil status Single

EDUCATION

University of A Coruña, Spain November 2014 – June 2018
PhD. in Civil Engineering
International Doctoral School
Thesis title: Tissue-scale, patient-specific modeling and simulation of prostate cancer growth
Advisor: Prof. Hector Gomez
Grade: Sobresaliente cum laude (summa cum laude)

University of A Coruña, Spain October 2013 – July 2014
MSc. in Research in Civil Engineering
School of Civil Engineering
Thesis title: Isogeometrical modeling and analysis of prostate cancer growth
Advisor: Prof. Hector Gomez
Graduated with Honors

University of A Coruña, Spain September 2007 – July 2013
Coupled BSc. and MSc. in Civil Engineering (5-year degree plus final project)
School of Civil Engineering
Final project: Intermodal Station in Santiago de Compostela (Spain) – Railway Station
GPA: 9.2403/10 (Class average GPA: 6,7653/10)
Graduated with Honors. 1st of class of 2013 (96 students)

Instituto de Educación Secundaria Eusebio da Guarda, A Coruña, Spain September 2005 – May 2007
Bachillerato (High School Diploma)
Major in Natural and Life Sciences
GPA: 10/10
Graduated with Honors. 1st of class of 2007 (100+ students)

RESEARCH EXPERIENCE

The University of Texas at Austin, USA & University of Pavia, Italy September 2020 – Today
Marie Skłodowska-Curie fellow
Oden Institute for Computational Engineering and Sciences (University of Texas at Austin) and Computational Mechanics & Advanced Materials Group, Department of Civil Engineering and Architecture (University of Pavia)
Supervisors: Prof. Thomas J. R. Hughes, Prof. Thomas E. Yankeelov, and Prof. Alessandro Reali
Development of image-based, personalized computational technologies to predict the growth of untreated prostate cancer.

The University of Texas at Austin, USA September 2019 – August 2020
Peter O'Donnell Jr. postdoctoral fellow
Oden Institute for Computational Engineering and Sciences
Supervisors: Prof. Thomas E. Yankeelov and Prof. Thomas J. R. Hughes
Development of image-based, personalized computational technologies to predict the growth of breast cancer during neoadjuvant chemotherapy and untreated prostate cancer.

University of Pavia, Italy October 2017 – August 2019
Researcher
Computational Mechanics & Advanced Materials Group, Department of Civil Engineering and Architecture
Supervisor: Prof. Alessandro Reali
Development of image-based, isogeometric computational methods to predict the growth and tumor-induced deformation of prostate cancer on a tissue-scale, patient-specific basis.

University of A Coruña, Spain September 2013 – September 2017
Researcher
Group of Numerical Methods in Engineering, Department of Mathematical and Representation Methods
Supervisor: Prof. Hector Gomez
Study and development of new computational methods and techniques based on isogeometric analysis in order to model and simulate prostate cancer growth. This research is within the ERC Starting Grant project *MuSIC- Modeling and Simulation of cancer growth* (PI: Prof. Hector Gomez).

University of A Coruña, Spain April 2011 – August 2011
Assistant researcher
Group of Numerical Methods in Engineering, Department of Mathematical and Representation Methods
Supervisor: Prof. Hector Gomez
Research on experimental knowledge, theoretical foundations, and mathematical models of Fracture Mechanics.

MAIN HONORS AND AWARDS

1. Recipient of an H2020 Marie Skłodowska-Curie Action – Individual Fellowship for the project "PICModForPCa: Personalised Image-based Computational Modelling Framework to Forecast Prostate Cancer" (1/9/2020 – 31/8/2023).
   The H2020 Marie Skłodowska-Curie Actions – Individual Fellowships are a prestigious and considerable source of funding from the European Commission for young postdoctoral researchers. Due to the high number of candidate projects and the international scope of the program, obtaining one of these fellowships requires an extremely high grade during a strict assessment of the project, including scientific excellence, quality of project implementation, the researcher CV, and the impact of the project in the scientific community, society in general, and the scientific career of the postdoctoral researcher.
2. Outstanding Award in PhD studies. Universidade da Coruña. September 16, 2019.
   This award is the highest grade for PhD studies that can be obtained in the Spanish academy.
3. Peter O'Donnell Jr. Postdoctoral Fellowship. September 1, 2019 – August 31, 2020. Oden Institute for Computational Engineering and Sciences, The University of Texas at Austin.
   This postdoctoral fellowship is highly competitive and is considered one of the best postdoctoral programs in computational mechanics and applied mathematics worldwide.
4. First national graduate award in Civil Engineering studies 2012/2013. Ministerio de Educación, Cultura y Deporte (Spanish Ministry of Education, Culture and Sport). May 8, 2017.
   This award is given to graduates who finished their degree in Spain with the highest GPA and most outstanding CV.
5. Graduate grant for a research visit in Prof. Michael A. Scott's lab in Brigham Young University (Provo, UT, USA). Awarded by Fundación Barrié. July 1, 2014.
   This grant is awarded to PhD students with a connection with Galicia (Spain) and an outstanding research project also with impact in Galicia.
6. Graduate award in Civil Engineering studies 2012/2013. Xunta de Galicia (Galician Regional Government). September 19, 2014.
   This award is given to graduates who finished their degree in Galicia with the highest GPA.
7. Outstanding Award in Civil Engineering studies 2012/2013. Universidade da Coruña. December 19, 2013.
   This award is given to graduates who finished their degree in Universidade da Coruña with the highest GPA.
8. Award for best GPA in Civil Engineering 2012/2013. Fundación de la Ingeniería Civil de Galicia (Foundation for Civil Engineering

in Galicia). December 13, 2013.
This award is given to graduates from the Civil Engineering School of Universidade da Coruña with the highest GPA.

9. National Secondary Education Award 2006/2007. Ministerio de Educación, Cultura y Deporte (Spanish Ministry of Education, Culture and Sport). June 13, 2008.

   This award is given to students who finished high school in Spain with the highest GPA, obtained the corresponding regional secondary education award, and obtained top scores in a specific, high-level exam including contents of high school courses.

10. Secondary Education Award 2006/2007. Xunta de Galicia (Galician Regional Government). January 8, 2008.
    This award is given to students who finished high school in Galicia with the highest GPA and obtained top scores in a specific high-level exam including contents of high school courses.

11. Academic excellence in Secondary Education award. Universidade da Coruña. December 18, 2007.
    This award is given to students who finished high school with the highest GPA and began a degree at Universidade da Coruña.

12. Academic excellence award 2007. Xunta de Galicia (Galician Regional Government). October 10, 2007.
    This award is given to students who finished high school in Galicia with the highest GPA.

RESEARCH

FIELDS OF INTEREST

Computational oncology, predictive medicine, biomechanics, computational mechanics, isogeometric analysis, mathematical modeling in engineering and science, mathematical biology, biomedical engineering, digital twins in medicine.

PUBLICATIONS

SUMMARY AND METRICS

18 papers in peer-reviewed international journals
3 book chapters
2 manuscripts under revision
h index (Google Scholar): **12**
i10 index (Google Scholar): **13**
h index (Web of Science): **9**
Number of total citations (Google Scholar): **568**
Number of total citations (Web of Science): **301**
Number of citations of the 5 most cited papers (Google Scholar): **143, 77, 73, 66, 56**
Number of citations of the 5 most cited papers (Web of Science): **79, 48, 45, 35, 31**

MANUSCRIPTS UNDER REVISION | Corresponding author is underlined. An asterisk indicates students under my supervision.

1. O.O. Davarci*, E.Y. Yang*, A. Viguerie, T.E. Yankeelov, **G. Lorenzo**. Dynamic parameterization of a modified SEIRD model to analyze and forecast the outbreak evolution of COVID-19 in the United States.
2. **G. Lorenzo**, A.M. Jarrett, D.R. Tyson, C.T. Meyer, V. Quaranta, T.E. Yankeelov. Identifying the relevant mechanisms driving the early response of triple negative breast cancer patients to neoadjuvant chemotherapy using a biomathematical model integrating in vitro and in vivo imaging data.

ARTICLES IN SCIENTIFIC JOURNALS | Corresponding author is underlined. An asterisk indicates students under my supervision.

1. **G. Lorenzo**, N. di Muzio, C.L. Deantoni, C. Cozzarini, A. Fodor, A. Briganti, F. Montorsi, V.M. Pérez-García, H. Gomez, A. Reali

(2022). Patient-specific forecasting of post-radiotherapy prostate-specific antigen kinetics enables early prediction of biochemical relapse. *iScience,* 25(11), 105430.

2. E.Y. Yang*, G.R. Howard, A. Brock, T.E. Yankeelov, **G. Lorenzo** (2022). Mathematical characterization of population dynamics in breast cancer cells treated with doxorubicin. *Frontiers in Molecular Biosciences,* 9:972146.
3. A. Viguerie, M. Grave, G. Barros, **G. Lorenzo**, A. Reali, A.L.G.A. Coutinho (2022). Data-driven simulation of Fisher-Kolmogorov tumor growth models using Dynamic Mode Decomposition. *Journal of Biomechanical Engineering,* 144(12): 121001.
4. C. Wu, **G. Lorenzo**, D.A. Hormuth II, E.A.B.F. Lima, K.P. Slavkova, J.C. DiCarlo, J. Virotsko, C.M. Phillips, D. Patt, C. Chung, T.E. Yankeelov (2022). Integrating mechanism-based modeling with biomedical imaging to build digital twins for clinical oncology. *Biophysics Reviews*, 3(2):021304.
5. C. Wu, D.A. Hormuth II, **G. Lorenzo**, A.M. Jarrett, F. Pineda, F.M. Howard, G.S. Karczmar, T.E. Yankeelov (2022). Towards patient-specific optimization of neoadjuvant treatment protocols for breast cancer based on image-guided fluid dynamics. *IEEE Transactions on Biomedical Engineering*, 69(11): 3334-3344.
6. P. Colli, H. Gomez, **G. Lorenzo**, G. Marinoschi. A. Reali, E. Rocca (2021). Optimal control of cytotoxic and antiangiogenic therapies on prostate cancer growth. *Mathematical Models and Methods in Applied Sciences*, 31(7):1419-1468.
7. D.A. Hormuth II, C.M. Phillips, C. Wu, E.A.B.F. Lima, **G. Lorenzo**, P.K. Jha, A.M. Jarrett, J.T. Oden, T.E. Yankeelov (2021). Mathematical modeling of tumor vasculature and angiogenesis via time-resolved imaging data. *Cancers*, 13(12):3008.
8. D.A. Hormuth, A.M. Jarrett, **G. Lorenzo**, E.A.B.F. Lima, C. Wu, C. Chung, D. Patt, T.E. Yankeelov (2021). Math, magnets, and medicine: enabling personalized oncology. *Expert Review of Precision Medicine and Drug Development*, 6(2): 79-81.
9. A. Viguerie, **G. Lorenzo**, F. Auricchio, D. Baroli, T.J.R. Hughes, A. Patton*, A. Reali, T.E. Yankeelov, A. Veneziani (2021). Simulating the spread of COVID-19 via a spatially-resolved susceptible–exposed–infected–recovered–deceased (SEIRD) model with heterogeneous diffusion. *Applied Mathematics Letters*, 111: 106617.
10. A.S. Kazerouni, M. Gadde, A. Gardner, D.A. Hormuth II, A.M. Jarrett, K.E. Johnson, E.A.B.F. Lima, **G. Lorenzo**, C. Phillips, A. Brock, T.E. Yankeelov (2020). Integrating quantitative assays with biologically-based mathematical modeling for predictive oncology. *iScience*, 23 (12):101807.
11. A. Viguerie, A. Veneziani, **G. Lorenzo**, D. Baroli, N. Aretz-Nellesen, A. Patton*, T. E. Yankeelov, A. Reali, T.J.R. Hughes, F. Auricchio (2020). Diffusion–reaction compartmental models formulated in a continuum mechanics framework: application to COVID-19, mathematical analysis, and numerical study. *Computational Mechanics,* 66: 1131–1152.
12. C. Wu, D.A. Hormuth, T.A. Oliver, F. Pineda, **G. Lorenzo**, G.S. Karczmar, R.D. Moser, T.E. Yankeelov (2020). Patient-specific characterization of breast cancer hemodynamics using image-guided computational fluid dynamics. *IEEE Transactions on Medical Imaging*, 39(9): 2760-2771.
13. P. Colli, H. Gomez, **G. Lorenzo**, G. Marinoschi. A. Reali, E. Rocca (2020). Mathematical analysis and simulation study of a phase-field model of prostate cancer growth with chemotherapy and antiangiogenic therapy effects. *Mathematical Models and Methods in Applied Sciences*, 30 (7): 1253-1295.
14. **G. Lorenzo**, T.J.R. Hughes, A. Reali, H. Gomez (2020). A numerical simulation study of the dual role of 5α-reductase inhibitors on tumor growth in prostates enlarged by benign prostatic hyperplasia via stress relaxation and apoptosis upregulation. *Computer Methods in Applied Mechanics and Engineering*, 362: 112843.
15. **G. Lorenzo**, V.M. Pérez-García, A. Mariño, L.A. Pérez-Romasanta, A. Reali, H. Gomez (2019). Mechanistic modelling of PSA dynamics shows potential for personalised prediction of radiation therapy outcome. *Journal of the Royal Society Interface,* **16** (157): 20190195.
16. **G. Lorenzo**, T.J.R. Hughes, P. Dominguez-Frojan, A. Reali, H. Gomez (2019). Computer simulations suggest that prostate enlargement due to benign prostatic hyperplasia mechanically impedes prostate cancer growth. *Proceedings of the National Academy of Sciences of the United States of America,* 116 (4): 1152-1161.
17. **G. Lorenzo**, M.A. Scott, K. Tew, T.J.R. Hughes, H. Gomez (2017). Hierarchically refined and coarsened splines for moving interface problems, with particular application to phase-field models of prostate tumor growth. *Computer Methods in Applied Mechanics and Engineering*, 319: 515-548.
18. **G. Lorenzo**, M.A. Scott, K. Tew, T.J.R. Hughes, Y.J. Zhang, L. Liu, G. Vilanova, H. Gomez (2016). Tissue-scale, personalized modeling and simulation of prostate cancer growth. *Proceedings of the National Academy of Sciences of the United States of America,* 113 (48): E7663-E7671.

BOOK CHAPTERS

1. S. Urcun, **G. Lorenzo**, D. Baroli, P.Y. Rohan, G. Sciumè, W. Skalli, V. Lubrano, S.P.A. Bordas (2022). *Chapter Six - Oncology and mechanics: landmark studies and promising clinical applications.* In: *Advances in Applied Mechanics.* Ed.: S.P.A. Bordas, Elsevier, 55:513-571.
2. **G. Lorenzo**, D.A. Hormuth II, A.M. Jarrett, E.A.B.F. Lima, S. Subramanian, G. Biros, J.T. Oden, T.J.R. Hughes, T.E. Yankeelov (2022). *Quantitative in vivo imaging to enable tumor forecasting and treatment optimization*. In: *Cancer, Complexity, Computation*. Eds.: I. Balaz and A. Adamatzky, Springer, pp. 55-97.
3. A.S. Kazerouni, A.N. Dula, A.M. Jarrett, **G. Lorenzo**, J.A. Weis, J.A. Bankson, E.Y. Chekmenev, F. Pineda, G.S. Karczmar, T.E. Yankeelov (2022). *Chapter 25. Emerging Techniques in breast MRI.* In: *Breast MRI: State of the Art and Future Directions*. Eds. K. Pinker, R. Mann, S. Partridge. Elsevier, Philadelphia, PA, USA, pp. 503-531.

CONGRESSES

ORAL COMUNICATIONS | Speaker name is underlined. An asterisk indicates students under my supervision.

1. G. Lorenzo, T.J.R. Hughes, H. Gomez, T.E. Yankeelov, A. Reali. Biomechanical interplay between benign prostatic hyperplasia and prostate cancer. 10th International Conference on Isogeometric Analysis (IGA2022), Banff, Canada, November 6-9, 2022. ***Invited speaker***.
2. O.O. Davarci*, A. Viguerie, E.Y. Yang, T.E. Yankeelov, G. Lorenzo. Dynamic parameterization of a modified SEIRD model to analyze and forecast the outbreak evolution of COVID-19 in the United States. 15th World Congress on Computational Mechanics (WCCM XV) and 8th Asian-Pacific Congress on Computational Mechanics (APCOM VIII), Yokohama, Japan, July 31 – August 5, 2022. *This conference was held online due to the COVID-19 pandemic.*
3. G. Lorenzo, A.M. Jarrett, C.T. Meyer, D.R. Tyson, V. Quaranta, T.E. Yankeelov. Integrating *in vitro* and *in vivo* imaging data in a mathematical model of neoadjuvant therapy for breast cancer reveals mechanisms driving tumor response to treatment. 9th World Congress of Biomechanics (WCB 2022), Taipei, Taiwan, July 10-14, 2022. ***Invited speaker***. *This conference was held in hybrid format due to the COVID-19 pandemic.*
4. G. Lorenzo, J.S. Heiselman, M.A. Liss, M.I. Miga, H. Gomez, T.E. Yankeelov, T.J.R. Hughes, A. Reali. Personalized computational forecasting of prostate cancer growth during active surveillance. 8th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2022), Oslo, Norway, June 5-9, 2022.
5. G. Lorenzo, T.J.R. Hughes, H. Gomez, T.E. Yankeelov, A. Reali. Biomechanical interactions between prostate cancer and coexisting benign prostatic hyperplasia. USACM Thematic Conference on the Role of Mathematical and Computational Modeling in Cancer Research, January 10-11, 2022. *This conference was held virtually.*
6. T.E. Yankeelov, D.A. Hormuth II, E.A.B.F. Lima, G. Lorenzo, C. Wu. Towards imaging-based digital twins for clinical oncology. USACM Thematic Conference on the Role of Mathematical and Computational Modeling in Cancer Research, January 10-11, 2022. *This conference was held virtually.*
7. G. Lorenzo, T.J.R. Hughes, A. Reali, H. Gomez, T.E. Yankeelov. Image-based computational modeling of prostate cancer growth to assist clinical decision-making. 16th US National Congress on Computational Mechanics (USNCCM16), Chicago, IL, USA, July 25-29, 2021. ***Invited keynote speaker***. *Attendance partially covered by a* ***travel grant awarded by the US Association for Computational Mechanics to outstanding PhD and postdoctoral researchers****. This conference was held online due to the COVID-19 pandemic.*
8. G. Lorenzo, T.J.R. Hughes, A. Reali, H. Gomez, T.E. Yankeelov. Personalized image-based modeling of organ-confined prostate cancer: exploring the mechanical interactions between tumor growth and coexisting benign prostatic hyperplasia. Annual Meeting of the Society for Mathematical Biology 2021 (SMB2021), UC Riverside, CA, USA, June 13-17, 2021. *This conference was held online due to the COVID-19 pandemic.*
9. C. Wu, P.K. Jha, C.M. Phillips, D.A. Hormuth II, G. Lorenzo, A.M. Jarrett, F. Pineda, G.S. Karczmar, T.E. Yankeelov. Towards patient-specific prediction and optimization of breast cancer response to neoadjuvant therapy. Annual Meeting of the Society for Mathematical Biology 2021 (SMB2021), UC Riverside, CA, USA, June 13-17, 2021. *This conference was held online due to the COVID-19 pandemic.*

10. C. Wu, D.A. Hormuth, G. Lorenzo, A.M. Jarrett, T.E. Yankeelov. Toward patient-specific prediction and optimization of breast cancer response. ISMRM & SMRT Annual Meeting & Exhibition, May 15-20, 2021. *This conference was held online due to the COVID-19 pandemic.* ***This talk was selected as 1 of the 5 finalists of the ISMRM Junior Fellow Symposium Shark Tank****. This competition assessed a 5-minute pitch of scientific projects carried out by junior researchers that are close to a technological transfer stage.*

11. A.M. Jarrett, D.A. Hormuth II, G. Lorenzo, J.C. DiCarlo, J. Virostko, A.G. Sorace, R.C. Rockne, T.E. Yankeelov. Preclinical and clinical studies of mathematical modeling for individualizing therapeutic regimens in breast cancer. Joint Mathematics Meetings, January 6-9, 2021. *This conference was held online due to the COVID-19 pandemic.*

12. D.R. Tyson, V. Quaranta, T.E. Yankeelov, G. Lorenzo. Personalized Models of Human Cancer Treatment Response from In Vitro and In Vivo Imaging. Virtual International Symposium on Fusion of Mathematics and Biology, October 26-28, 2020. *This symposium was organized by the Center for Mathematical Modeling and Data Science at Osaka University (Japan) within the Core-to-Core program "Establishing International Research Network of Mathematical Oncology" sponsored by Japan Society for the Promotion of Science.*

13. G. Lorenzo, A. Reali, H. Gomez, T.J.R. Hughes, T.E. Yankeelov. Image-based mechanistic modeling of prostate cancer for personalized forecasting of tumor growth. 12th European Conference on Mathematical and Theoretical Biology, August 31 to September 4, 2020, Heidelberg, Germany. *This conference was cancelled due to the 2020 COVID-19 pandemic and was substituted by the virtual 2020 Annual Meeting of the Society for Mathematical Biology (SMB 2020), August 17-20, 2020.*

14. G. Lorenzo, T.J.R. Hughes, A. Reali, H. Gomez, T.E. Yankeelov. Computational modeling of prostate cancer growth to assist clinical decision-making. 14th World Congress on Computational Mechanics (WCCM XIV) and 8th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2020), Paris, France, July 19-24, 2020. *Attendance partially covered by a* ***travel grant awarded by the US Association for Computational Mechanics to outstanding PhD and postdoctoral researchers****. This congress was cancelled due to the 2020 COVID-19 pandemic and rescheduled as a virtual conference on January 11-15, 2021.*

15. G. Lorenzo, T.J.R. Hughes, P. Dominguez-Frojan, A. Reali, H. Gomez. Computational model explains the mechanical obstruction of prostate cancer growth in pathologically enlarged prostates. Coupled Problems 2019, Sitges, Spain, June 2-6, 2019.

16. G. Lorenzo, P. Dominguez-Frojan, A. Reali, H. Gomez. Prostate enlargement due to benign prostatic hyperplasia provides mechanical protection against prostate cancer. 10th European Solid Mechanics Conference (ESMC 2018), Bologna, Italy, July 2-6, 2018. ***Invited speaker.***

17. G. Lorenzo, P. Dominguez-Frojan, A. Reali, H. Gomez. Benign enlargement of the prostate with age mechanically restricts the growth of prostatic tumors. 6th European Conference on Computational Mechanics (ECCM 6) and 7th European Conference on Computational Fluid Dynamics (ECFD 7), Glasgow, United Kingdom, June 11-15, 2018.

18. G. Lorenzo, T.J.R. Hughes, A. Reali, H. Gomez. A mathematical model for the patient-specific prediction of prostate cancer growth at anatomic scale [Un modelo matemático para la predicción personalizada del crecimiento de cáncer de próstata a escala anatómica]. 34 Congreso Nacional de la Sociedad Española de Radiología Médica (SERAM2018), Pamplona, Spain, May 24-27, 2018. *This presentation received* ***Best Oral Communication award from the congress organization****.*

19. G. Lorenzo, M.A. Scott, K. Tew, T.J.R. Hughes, H. Gomez. A Computational Framework for Tissue-Scale, Patient-Specific Prediction of Prostate Cancer Growth. 14th U.S. National Congress on Computational Mechanics (USNCCM14), Montreal, Canada, July 17-20, 2017.

20. G. Lorenzo, M.A. Scott, K. Tew, T.J.R. Hughes, H. Gomez. Tissue-scale, patient-specific modeling and simulation of prostate cancer. Congress on Numerical Methods in Engineering (CMN2017), Valencia, Spain, July 3-5, 2017. *Attendance covered by the* ***congress scholarship for PhD students****, awarded to those candidates with most outstanding CV.*

21. G. Lorenzo, M.A. Scott, K. Tew, T.J.R. Hughes, H. Gomez. Modeling and simulation of prostate cancer: advances in the development of a new patient-specific tissue-scale diagnostic model. XII World Congress on Computational Mechanics (WCCM XII) and VI Asia-Pacific Congress on Computational Mechanics (APCOM VI), Seoul, Korea, July 24-29, 2016.

22. G. Lorenzo, M.A. Scott, K. Tew, T.J.R. Hughes, H. Gomez. Isogeometric modeling and analysis of prostate cancer growth: on the development of a new patient-specific tissue-scale diagnostic model. III International Conference on Isogeometric Analysis (IGA2015), Trondheim, Norway, June 1-3, 2015.

POSTERS | Speaker name is underlined. An asterisk indicates students under my supervision.

1. H.J.M. Minière, E.A.B.F. Lima, G. Lorenzo, G.R. Howard, A. Brock, T.E. Yankeelov. Mathematically modeling and predicting the spatio-temporal response of breast cancer cells treated with doxorubicin. Biomedical Engineering Society Annual Meeting 2022 (BMES2022), San Antonio, TX, USA, October 12-15, 2022.
2. G. Lorenzo, J.S. Heiselman, M.A. Liss, M.I. Miga, H. Gomez, T.E. Yankeelov, T.J.R. Hughes, A. Reali. Patient-specific imaging-based forecasting of prostate cancer growth during active surveillance. 12th European Conference on Mathematical and Theoretical Biology (ECMTB22), Heidelberg, Germany, September 18-24, 2022. ***This poster was one of winners of the poster competition that took place during the conference.***
3. N. di Muzio, G. Lorenzo, C.L. Deantoni, C. Cozzarini, A. Fodor, A. Briganti, F. Montorsi, V.M. Perez-Garcia, H. Gomez, A. Reali. PSA dynamics forecasts identify tumor recurrence after external radiotherapy for prostate cancer. 2022 Annual Meeting of the European Society for Radiotherapy and Oncology (ESTRO2022), Copenhagen, Denmark, May 6-10, 2022.
4. G. Lorenzo, J.S. Heiselman, M.A. Liss, M.I. Miga, H. Gomez, T.E. Yankeelov, T.J.R. Hughes, A. Reali. Patient-specific forecasting of prostate cancer growth during active surveillance using an imaging-informed mechanistic model. 2022 Annual Meeting of the American Association for Cancer Research (AACR2022), New Orleans, LA, USA, April 8-13, 2022.
5. G. Lorenzo, A.M. Jarrett, C.T. Meyer, D.R. Tyson, V. Quaranta, T.E. Yankeelov. *In silico* analysis of a novel mathematical model integrating *in vitro* and *in vivo* imaging data reveals driving mechanisms of breast cancer response to NAT for personalized tumor forecasting. San Antonio Breast Cancer Symposium 2021 (SABCS 2021), San Antonio, TX, USA, December 7-10, 2021.
6. E.Y. Yang*, G.R. Howard, A. Brock, T.E. Yankeelov, G. Lorenzo. Characterizing phenotypic dynamics of chemoresistance in breast cancer cells. Annual Meeting of the Society for Mathematical Biology 2021 (SMB2021), UC Riverside, CA, USA, June 13-17, 2021. *This conference was held online due to the COVID-19 pandemic.*
7. O. Davarci*, E.Y. Yang*, A. Viguerie, T.E. Yankeelov, G. Lorenzo. Integrating epidemiological data and mathematical models to forecast COVID-19 spread in the United States. Annual Meeting of the Society for Mathematical Biology 2021 (SMB2021), UC Riverside, CA, USA, June 13-17, 2021. *This conference was held online due to the COVID-19 pandemic.*
8. O. Davarci*, E.Y. Yang*, A. Viguerie, T.E. Yankeelov, G. Lorenzo. Integrating epidemiological data and mathematical models to forecast COVID-19 spread in the United States. Longhorn Research Symposium, The University of Texas at Austin, Austin, TX, USA, April 14, 2021. *This conference was held online due the global COVID-19 pandemic.*
9. G. Lorenzo, A.M. Jarrett, C.T. Meyer, D.R. Tyson, V. Quaranta, T.E. Yankeelov. Identifying relevant parameters that characterize the early response to NAT in breast cancer patients using a novel personalized mechanistic model integrating in vitro and in vivo imaging data. San Antonio Breast Cancer Symposium 2020 (SABCS 2020), December 8-11, 2020. *This conference was held online due the global COVID-19 pandemic.*
10. A. Viguerie, G. Lorenzo, F. Auricchio, D. Baroli, T. J. R. Hughes, A. Patton*, A. Reali, T. E. Yankeelov, A.Veneziani. Integrating theory and population data to forecast the spatiotemporal spread of COVID-19. 13th International CAE Conference, November 30 - December 4, 2020. *This conference was held online due the global COVID-19 pandemic****. This poster was one of the five winners of the poster competition that took place during the conference.***
11. G. Lorenzo, A. Viguerie, F. Auricchio, D. Baroli, T. J. R. Hughes, A. Patton*, A. Reali, T. E. Yankeelov, A.Veneziani. Integrating theory and population data to forecast the spatiotemporal spread of COVID-19. UT COVID-19 Conference, November 10-11, 2020. *This conference was held online due the global COVID-19 pandemic.*
12. G. Lorenzo, T.J.R. Hughes, A. Reali, H. Gomez, T. E. Yankeelov. An image-based mechanistic computational model for early prediction of organ-confined untreated prostate cancer growth. 2020 AACR Annual Meeting, San Diego CA, USA, April 24-29,2020. *This conference was cancelled due to the 2020 COVID-19 pandemic and the poster was scheduled for presentation as an e-poster during the 2020 AACR Virtual Annual Meeting II (June 22-24, 2020).*

PARTICIPATION IN CONFERENCE COMMITTEES

1. Scientific Committee. XVII International Conference on Computational Plasticity, Fundamentals and Applications (COMPLAS 2023), Barcelona, Spain, September 5-7, 2023.
2. Program Committee. 3rd International Symposium on Mathematical and Computational Oncology (ISMCO). Virtual conference. October 11-13, 2021. *This conference was held online due to the COVID-19 pandemic.*

3. Program Committee. 2nd International Symposium on Mathematical and Computational Oncology (ISMCO). Virtual conference. October 8-10, 2020. *This conference was held online due to the COVID-19 pandemic.*

ORGANIZATION/CHAIR OF MINISYMPOSIA AND TECHNICAL SESSIONS

1. Organizer and chairman of the minisymposium *Image-informed computational models and methods for prediction of cancer growth and treatment response* within the 8th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2022), Oslo, Norway, June 5-9, 2022.
2. Organizer of the invited session on *Isogeometric Methods* within the 16th International Conference on Computational Plasticity, Fundamentals and applications (COMPLAS 2021), Barcelona, Spain, September 7-10, 2021.
3. Chairman of the minisymposium *Industrial Applications of IGA* within the 16th US National Congress on Computational Mechanics, Chicago, IL, USA, July 25-29, 2021. *This conference was held online due to the COVID-19 pandemic.*
4. Organizer and chairman of the minisymposium *Integrating quantitative imaging and mechanistic modeling to characterize tumor growth and therapeutic response* within the virtual Annual Meeting for the Society of Mathematical Biology 2021 (SMB 2021), UC Riverside, Ca, USA, June 13-17, 2021. *This conference was held online due to the COVID-19 pandemic.*
5. Organizer and chairman of the minisymposium *Applications and challenges of using quantitative imaging data for biologically-based mathematical oncology* within the virtual Annual Meeting for the Society of Mathematical Biology 2020 (SMB 2020), August 17-20, 2020. *This conference was held online due to the COVID-19 pandemic.*
6. Chairman of the minisymposium *Geometry and Discretization* within the 10th European Solid Mechanics Conference (ESMC 2018), Bologna, Italy, July 2-6, 2018.
7. Chairman of the minisymposium *Phase-Field Modeling and Simulation in Fluids, Solids and Biomechanics* within the 14th U.S. National Congress on Computational Mechanics (USNCCM14), Montreal, Canada, July 17-20, 2017.

WORKSHOPS

ORAL COMUNICATIONS | Speaker name is underlined. An asterisk indicates students under my supervision.

1. G. Lorenzo, C. Wu, J.P. Yung, J.F. Ward, H. Gomez, A. Reali, T.E. Yankeelov, A.M. Venkatesan, T.J.R. Hughes. Patient-specific forecasting of prostate cancer growth during active surveillance using an imaging-informed biomechanistic model. XIII Reunión de Jóvenes Investigador@s en el Extranjero (IYImeeting 2022), Vigo, Spain, December 27, 2022.
2. G. Lorenzo, C. Wu, J.P. Yung, J.F. Ward, H. Gomez, A. Reali, T.E. Yankeelov, A.M. Venkatesan, T.J.R. Hughes. Patient-specific computational models to forecast prostate cancer growth. 3rd Annual Research Retreat in Oncological Data and Computational Sciences, Austin, TX, USA, November 9, 2022. ***Invited speaker.***
3. F. Paiva, J. Carvalho, G. Lorenzo, R. Travasso. Influence of the underlining duct structure in prostate adenocarcinoma progression. Second Edition of the Research School and Workshop on Mathematical Modeling of Self Organization in medicine, biology and ecology (MMSEOR2022), Palermo, Italy, May 30 – June 3, 2022.
4. G. Lorenzo. Mathematical modeling and optimization of cytotoxic and antiangiogenic therapies for advanced prostate cancer. INDAM workshop on Phase Field Methods in Applied Sciences (PHAME 2022), Rome, Italy, May 23-27, 2022. ***Invited speaker.***
5. G. Lorenzo. Imaging-informed, organ-scale computational modeling of prostate cancer growth. 8th Workshop on Mathematical and Computational Modeling of Tumor Growth (VIII EM2C2T), National Laboratory for Scientific Computation (Laboratório Nacional de Computação Científica, LNCC), Brasil, February 14-16, 2022. ***Invited plenary speaker.***
6. G. Lorenzo. Patient-specific computational models to forecast prostate cancer growth. 2nd Annual Research Retreat in Oncological Data and Computational Sciences. Oden Institute for Computational Engineering and Sciences, MD Anderson Cancer Center, and Texas Advanced Computing Center, Austin, TX, USA, November 10, 2021. ***Invited speaker.***
7. G. Lorenzo. Phase-field modeling of prostate cancer growth and treatments. Workshop Recent advances in Phase-Field modeling: from Engineering to Biology (PHASE 2019), Università degli Studi di Pavia, Italy, May 8-10, 2019. ***Invited speaker.***
8. G. Lorenzo, T.J.R. Hughes, A. Reali, H. Gomez. Organ-scale, patient-specific computational modeling of prostate cancer. Workshop Advanced Computational Modeling for Tumor Growth Prediction, Institute for Advanced Study, Technische Universität München, Munich, Germany, September 24-25, 2018. ***Invited speaker.***

POSTERS | Speaker name is underlined. An asterisk indicates students under my supervision.

1. G. Lorenzo, T.J.R. Hughes, A. Reali, H.Gomez. An in silico study of mechanical obstruction of prostate cancer growth by benign prostatic hyperplasia with clinical implications. High-Order Finite Element and Isogeometric Methods Workshop 2019 (HOFEIM 2019), Università degli Studi di Pavia, Italy, May 28-31, 2019. ***Invited speaker***. *The poster presented at this workshop was awarded the* ***"Best poster award by a postdoctoral researcher" by the workshop organization.***

PARTICIPATION IN WORKSHOP COMMITTEES

1. Local Organizing Committee. High-Order Finite Element and Isogeometric Methods Workshop 2019 (HOFEIM 2019), Università degli Studi di Pavia, Italy, May 28-31, 2019.

INVITED SEMINARS

1. G. Lorenzo. Patient-specific computational forecasting of prostate cancer growth. Invited seminar at the Oden Institute for Computational Engineering and Sciences, The University of Texas at Austin, April 19, 2022.
2. G. Lorenzo. Patient-specific forecasting of prostate cancer growth during active surveillance. Invited seminar at UT Center for Computational Oncology, The University of Texas at Austin, Austin, TX, USA, March 9, 2022.
3. G. Lorenzo. Image-based, organ-scale computational modeling of prostate cancer growth. Invited seminar at the Quantitative Biology Colloquium of the Program in Applied Mathematics at The University of Arizona and Arizona State University, Tucson, AZ, USA, April 16, 2021.
4. G. Lorenzo. Forecasting organ-confined prostate cancer growth by integrating routine clinical and imaging data in a personalized mechanistic model. Invited seminar at the Department of Integrated Mathematical Oncology at Moffitt Cancer Center, Tampa, FL, USA, January 20, 2021.
5. G. Lorenzo. Image-based patient-specific computational modeling of organ-confined prostate cancer. Invited seminar at Hector Gomez Lab at Purdue University, West Lafayette, IN, USA, November 20, 2020.
6. G. Lorenzo. Integrating *in vitro* and *in vivo* imaging data in a novel personalized mechanistic model to characterize the early response to neoadjuvant therapy in breast cancer patients. Invited seminar at Vito Quaranta's Lab at Vanderbilt University, Nashville, TN, USA, October 27, 2020.
7. G. Lorenzo. Mechanistic modeling of prostate cancer for personalized forecasting of tumor growth. Invited seminar at UT Center for Computational Oncology, The University of Texas at Austin, Austin, TX, USA, September 20, 2020.
8. G. Lorenzo. Patient-specific computational modeling of prostate cancer. Invited seminar at Yale Interdisciplinary Prostate Program, Yale University, New Haven, CT, USA, June 8, 2020.
9. G. Lorenzo. Patient-specific, organ-scale computational modeling of prostate cancer. Invited seminar at Developmental Therapeutics Lab at Livestrong Cancer Institutes, Austin, TX, USA, November 12, 2019.
10. G. Lorenzo. Phase-field modeling of prostate cancer growth and treatments. Invited seminar at the "Gheorghe Mihoc-Caius Iacob" Institute of Mathematical Statistics and Applied Mathematics of the Romanian Academy, Bucharest, Romania, July 9, 2019.
11. G. Lorenzo. Tissue-scale, patient-specific computational modeling and simulation of prostate cancer growth. Invited seminar at Mathematical Oncology Laboratory (MOLAB), University of Castilla – La Mancha, Ciudad Real, Spain, November 28, 2018.
12. G. Lorenzo. A computational framework for tissue-scale, patient-specific prediction of prostate cancer growth. Invited seminar at Computational Mechanics & Advanced Materials Group, Dipartimento di Ingegneria Civile e Architettura, Università degli Studi di Pavia, Pavia, Italy, September 27, 2017.
13. G. Lorenzo. Fracture mechanics: introduction to models of dynamic crack propagation [Mecánica de la fractura: introducción a los modelos de propagación dinámica de grietas]. Invited seminar at Departamento de Métodos Matemáticos y de Representación, Universidade da Coruña, A Coruña, Spain, April 14, 2011.

RESEARCH VISITS

1. "Gheorghe Mihoc-Caius Iacob" Institute of Mathematical Statistics and Applied Mathematics of the Romanian Academy

(Bucharest, Romania). Sponsor: Prof. Gabriela Marinoschi. July 2019.

2. Prof. Massimiliano Fraldi's group at the University of Naples Federico II (Naples, Italy). Sponsor: Prof. Massimiliano Fraldi. May 2019.
3. Mathematical Oncology Laboratory (MOLAB) at University of Castilla – La Mancha (Ciudad Real, Spain). Sponsor: Prof. Víctor Pérez-García. November 2018.
4. Computational Geometry and Mechanics Group at Brigham Young University (Provo, UT, USA). Sponsor: Prof. Michael A. Scott. Funded by Fundación Barrié. October 2014 – January 2015.

PARTICIPATION IN RESEARCH PROJECTS

INTERNATIONAL PROJECTS

1. PICModForPCa – Personalised Image-based Computational Modelling Framework to Forecast Prostate Cancer (Ref.: 838786). Funded by the European Commission, H2020 Marie Skłodowska-Curie Action – Global Fellowship (09/01/2020 – 08/31/2023). **PI: Dr. Guillermo Lorenzo** (University of Pavia, The University of Texas at Austin). Total amount: 251,002.56 EUR.
2. Control and stabilization problems for phase field and biological systems (Ref.: N/A). Collaboration agreement between the Italian CNR and the Romanian Academy (01/01/2017 – 12/31/2019). IP: Prof. Pierluigi Colli (University of Pavia, IMATI-CNR) and Prof. Gabriela Marinoschi (Romanian Academy). Total amount: 22,800 EUR. **Dr. GL's Role: Researcher.**
3. MuSIC – Modeling and Simulation of Cancer Growth (Ref.: 307201). European Research Council Starting Grant (10/1/2012-09/30/2017). PI: Prof. Hector Gomez (University of A Coruña). Total amount: 1,405,420 EUR. **Dr. GL's Role: Researcher.**

NATIONAL PROJECTS – UNITED STATES OF AMERICA

1. Patient-specific computational models to forecast prostate cancer growth (Ref.: N/A). Funded by the Oden Institute, MD Anderson Cancer Center & TACC Pilot Project Program in Oncological Data and Computational Sciences (09/01/2021-08/31/2022). PI: Prof. Thomas J. R. Hughes (The University of Texas at Austin) and Prof. Aradhana M. Venkatesan (MD Anderson Cancer Center). Total amount: 50,000 USD. **Dr. GL's Role: Researcher.**
2. Integrating Omics and Quantitative Imaging Data in Co-Clinical Trials to Predict Treatment Response in Triple Negative Breast Cancer (Ref.: U24CA226110). Funded by US National Institutes of Health, National Cancer Institute (09/19/2019-08/31/2024). PIs: Prof. Thomas E. Yankeelov (The University of Texas at Austin), Prof. Michael Lewis (Baylor College of Medicine), and Prof. Daniel Rubin (Stanford University). Total amount: 3,190,550 USD. **Dr. GL's Role: Researcher.**
3. Systems Approaches to Understanding Subpopulation Heterogeneity in Therapeutic Resistance (Ref.: U01CA253540). Funded by US National Institutes of Health, National Cancer Institute (09/01/2020 – 08/31/2025). PIs: Prof. Amy Brock (The University of Texas at Austin), Prof. Thomas E. Yankeelov (The University of Texas at Austin). Total amount: 997,211 USD. **Dr. GL's Role: Researcher.**
4. PFI-RP: Noninvasive Technology to Determine an Individual's Risk of Having a Heart Attack (Ref.: 1918988). Funded by US National Science Foundation (09/01/2019-08/31/2022). PI: Prof. Thomas J. R. Hughes (The University of Texas at Austin), Dr. Charles A. Taylor (Heartflow, Inc.), Dr. Shaolie S. Hossain (The University of Texas at Austin). Total amount: 550,000 USD. **Dr. GL's Role: Researcher.**
5. Uncovering the Secrets of the Glymphatic System and Implications for Neurodegenerative Disease: A Computational Medicine Approach (Ref.: N/A). Funded by a Moncrief Grand Challenge Award at the Oden Institute for Computational Engineering and Sciences at The University of Texas at Austin (09/01/2020-08/31/2021). PI: Prof. Thomas J. R. Hughes (The University of Texas at Austin). Total amount: 75,000 USD. **Dr. GL's Role: Researcher.**
6. Image-based, personalized, organ-scale computational modeling of prostate cancer growth (Ref.: N/A). Funded by a Peter O'Donnell Jr. Postdoctoral Fellowship from the Oden Institute for Computational Engineering and Sciences at The University of Texas at Austin (09/01/2019-08/31/2020). **PI: Dr. Guillermo Lorenzo** (The University of Texas at Austin). Total amount: 66,000 USD.

7. Quantitative MRI for Predicting Response of Breast Cancer to Neoadjuvant Therapy (Ref.: U01CA142565). Funded by National Institutes of Health, National Cancer Institute (09/01/2017-02/28/2022). PIs: Prof. Thomas E. Yankeelov (The University of Texas at Austin), Prof. Richard G. Abramson (Vanderbilt University), Prof. Vandana Abramson (Vanderbilt University), Prof. Gregory S. Karczmar (University of Chicago), Prof. Rita Nanda (University of Chicago). Total amount: 2,300,000 USD. **Dr. GL's Role: Researcher.**

8. Quantitative Multiscale Imaging to Optimize Cancer Treatment Strategies (Ref.: R01CA186193). Funded by National Institutes of Health, National Cancer Institute (01/01/2016-07/31/2020). PIs: Prof. Thomas E. Yankeelov (The University of Texas at Austin), Prof. Vito Quaranta (Vanderbilt University), Prof. Erin C. Rericha (Vanderbilt University). Total amount: 2,500,000 USD. **Dr. GL's Role: Researcher.**

9. Predictive Oncology through Advanced in vivo Imaging (Ref.: RR160005). Funded by Cancer Prevention and Research Institute of Texas (12/01/2015-05/31/2022). PI: Prof. Thomas E. Yankeelov (The University of Texas at Austin). Total amount: 6,000,000 USD. **Dr. GL's Role: Researcher.**

10. Image Driven Multi-Scale Modeling to Predict Treatment Response in Breast Cancer (Ref.: U01CA174706). Funded by National Institutes of Health, National Cancer Institute (06/01/2013-08/31/2021). PIs: Prof. Thomas E. Yankeelov (The University of Texas at Austin), Prof. Vito Quaranta (Vanderbilt University). Total amount: 2,500,000 USD. **Dr. GL's Role: Researcher.**

NATIONAL PROJECTS – ITALY

1. XFAST-SIMS – Extra fast and accurate simulation of complex structural systems (Ref.: 20173C478N). Funded by Ministero dell'Istruzione, dell'Università e della Ricerca della Repubblica Italiana (Ministry of Education, Universities, and Research of the Italian Republic, 09/15/2019 – 03/15/2023). PI: Prof. Alessandro Reali (University of Pavia). Total amount: 877,560 EUR. **Dr. GL's Role: Researcher.**

2. Towards new super-fast and accurate simulation tools based on isogeometric analysis [Verso nuovi strumenti di simulazione super veloci ed accurati basati sull'analisi isogeometrica], within the program RST-rafforzamento (Ref.: 2016-1015). Funded by Fondazione Cariplo – Regione Lombardia and University of Pavia (10/03/2016-10/02/2018). PI: Prof. Alessandro Reali (University of Pavia). Total amount: 125,000 EUR. **Dr. GL's Role: Researcher.**

NATIONAL PROJECTS – SPAIN

1. Isogeometric modeling and simulation of prostate cancer: development of a new tissue-scale, personalized computational model to simulate diagnosis, prognosis, and radiotherapy (Ref.: N/A). Funded by Deputación da Coruña (Provincial Government of A Coruña, 09/05/2016-09/05/2017). **PI: Guillermo Lorenzo** (University of A Coruña). Total amount: 8,000 EUR.

2. Collaboration agreement between Consellería de Cultura, Educación e Ordenación Universitaria (Department of Education, Culture, and Universities of the Galician government) and Universidade da Coruña to support the principal investigator of the Starting Grant-ERC (Ref.: N/A). Funded by Xunta de Galicia (Galician Regional Government, 01/01/2014-12/31/2017). PI: Prof. Hector Gomez (University of A Coruña). Total amount: 150,000 EUR. **Dr. GL's Role: Researcher.**

3. Computational modeling of cancer microvasculature: unraveling the topology and transport functionality of tumor-induced capillary networks (Ref.: DPI2013-44406-R). Funded by Ministerio de Economía y Competitividad (Spanish Ministry of Economy and Competitivity, 01/01/2014-12/31/2016). PI: Prof. Hector Gomez (University of A Coruña). Total amount: 23,000 EUR. **Dr. GL's Role: Researcher.**

4. Collaboration agreement between Consellería de Cultura, Educación e Ordenación Universitaria (Department of Education, Culture, and Universities of the Galician government) and Universidade da Coruña to support the principal investigator of the Starting Grant-ERC (Ref.: N/A). Funded by Xunta de Galicia (Galician Regional Government, 01/01/2012-12/31/2015). PI: Prof. Hector Gomez (University of A Coruña). Total amount: 150,000 EUR. **Dr. GL's Role: Researcher.**

5. Evaluation of the environmental impact of spills in rias, estuaries, and coastal zones with numerical models (Ref.: PGDIT09MDS00718PR). Funded by Xunta de Galicia (Galician Regional Government, 12/03/2009-12/02/2012). PI: Prof. Fermín Luis Navarrina Martínez (University of A Coruña). Total amount: 70,598.50 EUR. **Dr. GL's Role: Researcher.**

PATENTS

INTERNATIONAL PATENTS

1. T.J.R. Hughes, H. Gomez, **G. Lorenzo**. Tissue-Scale, Patient-Specific Modeling and Simulation of Prostate Cancer Growth. International Patent Application Number PCT/ES2016/070609 and publication number WO/2018/037137. Filed August 24, 2016 and published on March 1, 2018. Related to US Patent Application Number 16327875, with publication number US20190198177, and published on June 27, 2019. *This patent is currently under the second round of revision.*

REVIEWER FOR SCIENTIFIC JOURNALS

PLoS ONE, Mathematical Problems in Engineering, Computer Methods in Applied Mechanics and Engineering, Journal of Engineering in Medicine, Advances in Computational Mathematics, Applied Mathematical Modelling, Physics Letters A, Scientific Reports, Biomechanics and Modeling in Mechanobiology, International Journal of Molecular Sciences, Cancers, Journal of the Royal Society Interface, Mathematical Biosciences, Journal of Theoretical Biology, Computer Methods and Programs in Biomedicine, International Journal of Applied Mathematics and Computer Science.

AFFILIATIONS

1. Investigal. June 2020 – currently.
2. Society for Mathematical Biology (SMB). February 2020 – currently.
3. American Association for Cancer Research (AACR). September 2019 – currently.
4. Center for Computational Oncology, The University of Texas at Austin. September 2019 – currently.
5. Institute for Applied Mathematics and Computer Technologies "Enrico Magenes" (Istituto di Matematica Applicata e Tecnologie informatiche "Enrico Magenes", IMATI), Consiglio Nazionale delle Ricerche (CNR). January 2019 – currently.
6. European Society of Biomechanics (ESB). January 2019 – January 2020.
7. European Mechanics Society (EMS). July 2018 – July 2019.
8. Spanish Society for Applied Mathematics (Sociedad Española de Matemática Aplicada, SEMA). March 2018 – currently.
9. Computational Mechanics & Advanced Materials Group at University of Pavia. October 2017 – currently.
10. The invisible faculty (La Facultad Invisible; association of recipients of the national graduate awards of the Spanish Ministry of Education, Culture, and Sport). June 2017 – currently.
11. Spanish Society for Numerical Methods in Engineering (Sociedad Española de Métodos Numéricos en Ingeniería, SEMNI). September 2015 – currently.
12. Group of Numerical Methods in Engineering at University of A Coruña (Grupo de Métodos Numéricos en Ingeniería de la Universidade da Coruña, GMNI). November 2014 – December 2018.
13. Fundación Barrié Fellows Association. June 2014 – currently.

SCIENTIFIC OUTREACH

ARTICLES

1. G. Lorenzo, G. Vilanova, H. Gomez. *The cancer equations [Las ecuaciones del cáncer]*. *Investigación y Ciencia*, **487**, 54-62 (2017). *Investigación y Ciencia is the Spanish edition of Scientific American.*

ORAL COMMUNICATIONS | Speaker name is underlined

1. G. Lorenzo, M. Camiña. The medical research that physicians don't do [La investigación médica que no hacen los médicos]. Diálogos 04: Jornada de Innovación Sanitaria en Galicia, A Coruña, Spain, December 2, 2016.

2. G. Lorenzo. The cancer equations [Las ecuaciones del cáncer]. Pint of Science 2016, A Coruña, Spain, May 23-25, 2016. Invited speaker.

WORKSHOPS AND OTHER ACTIVITIES

1. Collaborator in the scientific and engineering activities organized by the Computational Mechanics and Advanced Materials Group (Department of Civil Engineering and Architecture, University of Pavia) during the European Researchers' Night 2022, Pavia, Italy, September 30, 2022.
2. Collaborator in the scientific and engineering activities organized by the School of Civil Engineering at University of A Coruña during the XXIII Science on the Street Day [Día de la Ciencia en la Calle], A Coruña, Spain, May 5, 2018.
3. Collaborator in the scientific and engineering activities organized by the School of Civil Engineering at University of A Coruña during the XXII Science on the Street Day [Día de la Ciencia en la Calle], A Coruña, Spain, May 6, 2017.
4. Collaborator in the scientific and engineering activities organized by the School of Civil Engineering at University of A Coruña during the Compostela Maker Faire, Santiago de Compostela, Spain, October 1-2, 2016.
5. Collaborator in the scientific and engineering activities organized by the School of Civil Engineering at University of A Coruña during the XXI Science on the Street Day [Día de la Ciencia en la Calle], A Coruña, Spain, May 7, 2016.
6. Collaborator in the scientific and engineering activities organized by the School of Civil Engineering at University of A Coruña during the Compostela Mini Maker Faire, Santiago de Compostela, Spain, October 17, 2015.
7. Collaborator in the scientific and engineering activities organized by the School of Civil Engineering at University of A Coruña during the workshop Peque-Ingeniería within Encontros da Enxeñaría de Camiños, Canais e Portos, A Coruña, Spain, May 13-17, 2015.
8. Collaborator in the scientific and engineering activities organized by the School of Civil Engineering at University of A Coruña during the XX Science on the Street Day [Día de la Ciencia en la Calle], A Coruña, Spain, May 9, 2015.
9. Collaborator in the scientific and engineering activities organized by the School of Civil Engineering at University of A Coruña during the XIX Science on the Street Day [Día de la Ciencia en la Calle], A Coruña, Spain, May 10, 2014.
10. Collaborator in the activities of promotion of the degrees imparted at the School of Civil Engineering at University of A Coruña in visits to Galician high schools, Galicia, Spain, 2012-2015.

TEACHING AND SUPERVISION

TEACHING

GRADUATE COURSES

1. Introduction to imaging-based computational forecasting of tumor growth and treatment response. PhD course. Università degli Studi di Pavia (Italy). Main lecturer (English). November 28-30 and December 5-7, 2022.
2. Nonlinear Static and Dynamic Finite Element Analysis (with Particular Emphasis on Solids, and an Introduction to Isogeometric Analysis). PhD course. The University of Texas at Austin (USA). Teacher assistant and lecturer (English). January 19-May 6, 2021.
3. Isogeometric Analysis: A practical introduction with applications. PhD course. Università degli Studi di Pavia (Italy). Main lecturer (English). June 10-12, 2019.
4. Advanced Numerical Methods. PhD Course within the European Joint Doctorate Program SEED at the University of Pavia (Italy). Main lecturer (English) in lab sessions for code implementation of Galerkin-based isogeometric methods. September 19-21, 2018.
5. Computational mechanics for scientific problems. PhD course. Università degli Studi di Pavia (Italy). Main lecturer (English) in lab sessions for code implementation of finite element methods. December 12-15, 2017.

INVITED COURSES

1. Introduction to clinically-oriented, image-based computational modeling and simulation of cancer growth. CIMPA Summer

Research School on Mathematical Epidemiology and Biology at the University of Dhaka (Bangladesh). Main lecturer (English). May 9-20, 2022.

PHD THESES

SUPERVISION

1. Alessia Patton. *Advanced isogeometric methods with a focus on composite laminated structures.* Università degli Studi di Pavia, Italy. Supervisors: Prof. Alessandro Reali and Dr. Guillermo Lorenzo. April 2021. *This PhD thesis received the 2021 Best PhD thesis in Solid Mechanics award from the Italian Group of Computational Mechanics (Gruppo Italiano di Meccanica Computazionale, GIMC).*

EXTERNAL REVIEWER

1. Jesús Bosque Martínez. *Metabolism, temperature, and hypoxia in cancer: Insights from mathematical models*. Universidad de Castilla-La Mancha, Spain. Supervisors: Prof. Gabriel Fernández Calvo and Prof. María Cruz Navarro Lérida. December 2022.

THESIS COMMITTEE

1. Juan Jiménez Sánchez. *Stochastic discrete simulation methods for biomarker discovery and therapy optimization in cancer*. Universidad de Castilla-La Mancha, Spain. Supervisor: Prof. Víctor M. Pérez-García. December 2022. Role: Committee member.
2. Jesús Bosque Martínez. *Metabolism, temperature, and hypoxia in cancer: Insights from mathematical models*. Universidad de Castilla-La Mancha, Spain. Supervisors: Prof. Gabriel Fernández Calvo and Prof. María Cruz Navarro Lérida. December 2022. Role: Reserve committee member.

MASTER THESES

SUPERVISION

1. Rita Pereira Ângelo. *The role of prostate ducts in prostate cancer progression*. Universidade de Coimbra, Portugal. Supervisors: Prof. Rui D.M. Travasso, Dr. Guillermo Lorenzo. Expected May 2023.
2. Orhun O. Davarci. *Dynamic parameterization of a modified SEIRD model to analyze and forecast the outbreak evolution of COVID-19 in the United States.* The University of Texas at Austin, USA. Supervisors: Prof. Thomas E. Yankeelov and Dr. Guillermo Lorenzo. May 2022.
3. Federico Cotta Ramusino. *Mathematical analysis and simulation study of a diffusion-reaction model of tumor growth.* Università degli Studi di Pavia, Italy. Supervisors: Prof. Elisabetta Rocca and Dr. Guillermo Lorenzo. June 2021.

RESEARCH STAFF SUPERVISION

1. The University of Texas at Austin, 1 undergraduate and 1 graduate students at the Center for Computational Oncology of the Oden Institute for Computational Engineering and Sciences: Mr. Orhun O. Davarci (undergraduate, 4/4/2020-5/5/2022; and graduate, 5/6/2022-today), Ms. Emily Y. Yang (graduate, 8/3/2020-7/16/2021).
2. Universidade da Coruña. 2 undergraduate and 3 graduate research assistants within the MuSIC project: Mr. Adrián López Fouz (undergraduate, 9/1/2017-9/30/2017), Mr. Esteban Sañudo Costoya (graduate, 9/1/2017-9/30/2017), Mr. Manuel Tasende Vilariño (undergraduate, 8/1/2017-9/30/2017), Ms. Sandra Fernández Turnes (graduate, 7/1/2017-9/30/2017), and Mr. Pablo Orosa Iglesias (graduate, 2/16/2017-9/30/2017).

PERSONAL SKILLS

LANGUAGES | Levels according to the Common European Framework of Reference for Languages
Mother tongues: Spanish and Galician.
English: Level **C2** (Certificate of Proficiency in English, Cambridge English Language Assessment, University of Cambridge, UK)
French: Level **B2**
Italian: Level **B2**

SOCIAL SKILLS
Ability to work cooperatively and communicating within a team to achieve shared goals
Good listener and always open to dialogue and constructive criticism
Leadership and team building skills

COMMUNICATION SKILLS
Good at both oral and written communication, with a nice grade of clarity and effectiveness
Ability to elaborate visual material to accompany lectures or spoken presentations
Good at the elaboration of written reports, scientific articles, and projects
Ability to clearly express opinions and provide advice
Ability to coordinate a fluid and effective communication within interdisciplinary teams

ORGANIZATIONAL SKILLS
Ability to prioritize goals
Ability to organize work and teams of coworkers
Good at planning and scheduling in order to meet deadlines efficiently

TECHNICAL SKILLS
Ability to precisely and efficiently analyze problems and propose alternative solutions
Excellent at mathematical, physical, and structural modeling and simulation
Expertise in the finite element method and isogeometric analysis
Expertise in computational modeling of tumor growth and medical interpretation of simulation results
Ability to identify and develop creative and innovative ideas and develop them into a research project
Good spatial vision and visual composition skills

COMPUTER SKILLS
Good command of LATEX and Microsoft Office package or similar
Programming languages: MATLAB, FORTRAN, C/C++, R, PYTHON, BASH, PBS, SLURM, Open MPI
Excellent at technical design with AutoCAD
Civil Engineering software: SAP2000, COSMOS, EPANET, HEC-RAS, ISTRAM/ISPOL, PRESTO, CYPE, GeoStudio
Software for medical images: RadiAnt, Slicer, ITK-SNAP
Visualization with ParaView and visual edition with GIMP and Inkscape

OTHER HONORS

1. Chair of the Directive Board of the Fundación Barrié Fellows Association. January 2017 – December 2018.
2. Student representative at the Popular Science Committee at University of A Coruña. September 2016 – May 2017.
3. Student representative in the area of Engineering and Architecture at the Management Committee of the International Doctoral School at University of A Coruña. May 2016 – June 2018.
4. Student representative at the Teaching and Academic Affairs Committee at University of A Coruña. April 2015 – May 2017.
5. Student representative at the Research Committee at University of A Coruña. April 2015 – May 2017.
6. Student representative at the Governing Council at University of A Coruña. April 2015 – May 2017.
7. Student representative at the Senate of University of A Coruña. December 2014 – February 2017.
8. Student representative at the Academic Committee of the School of Civil Engineering at University of A Coruña. April 2011 – December 2014.
9. Student representative at the Compensation Evaluation Committee of the School of Civil Engineering at University of A Coruña. April 2011 – July 2013.

10. Student representative at the School Board of the School of Civil Engineering at University of A Coruña. January 2011 – July 2013.

REFERENCES

Prof. Hector Gomez
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Prof. Alessandro Reali
Professor, Department of Civil Engineering and Architecture, University of Pavia
Address: Via Ferrata 3, 27100 Pavia, Italy
Phone: +39 0382 985704; e-mail: alereali@unipv.it

Prof. Thomas J. R. Hughes
Peter O'Donnell Jr. Chair in Computational and Applied Mathematics, Professor of Aerospace Engineering and Engineering Mechanics, Oden Institute for Computational Engineering and Sciences, The University of Texas at Austin
Address: 201 East 24th Street, C0200, Austin, TX 78712-1229, USA
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