

JORDI MARCÉ-NOGUÉ

PERSONAL INFORMATION:

Family name, First name: MARCÉ NOGUÉ, JORDI
 Researcher unique identifier (ORCID): 0000-0001-9852-7027
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CURRENT AFFILIATION

Departament d'Enginyeria Mecànica, Universitat Rovira i Virgili
 Avinguda Països Catalans, 26 - Campus Sescelades, 43007 Tarragona (Catalonia)

ASSOCIATE AFFILIATION

Institut Català de Paleontologia M. Crusafont, Universitat Autònoma de Barcelona,
 Z Building, 08193 Cerdanyola del Vallès, (Catalonia)

EDUCATION

- 2009 PhD from Universitat Politècnica de Catalunya, Spain / Thesis: “A Three-Dimensional Fibre-Based Model Adapted for a Computational Biomechanical Simulation of the Helical Ventricular Myocardial Band” Advisor: Francesc Roure, with honours.
 2003 Degree in Engineering from the Universitat Politècnica de Catalunya, Spain / Thesis: “Guia operativa per al càlcul de corretges en zeta i la normativa eurocodi 3 (part 1-3)” Advisor: Frederic Marimón (Awarded as the best Thesis Degree of 2003 in structural analysis)

POSITIONS

- 2022-current Associate professor / Departament d'Enginyeria Mecànica / Universitat Rovira i Virgili, Tarragona, Catalonia.
 2020-2022 Serra-Hünter tenure-eligible lecturer / Departament d'Enginyeria Mecànica / Universitat Rovira i Virgili, Tarragona, Catalonia.
 2019 Research Scientist / Jacobs School of Medicine and Biomedical Sciences / University at Buffalo, the State University of New York, USA
 2015-2018 Post-doc position / University of Hamburg, Germany
 2012–2015 Post-doc position / Universitat Politècnica de Catalunya, Spain
 2010–2015 Adjunct lecturer / Universitat Politècnica de Catalunya, Spain
 2005–2010 Assistant lecturer (non-PhD position) / Universitat Politècnica de Catalunya, Spain

PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL JOURNALS

- 1) **Marcé-Nogué, J.** (2022). One step further in biomechanical models in palaeontology: A nonlinear finite element analysis review. *PeerJ*. 10:e13890. IF: 3.061; Q1.
- 2) Bucchi, C., del Fabbro, M. & **Marcé-Nogué, J.** (2022). Orthodontic Loads in Teeth after Regenerative Endodontics. A Finite Element Analysis of the Biomechanical Performance of the Periodontal Ligament. *Applied Sciences* 12(14). IF: 2.7; Q2.
- 3) Krings, W., **Marcé-Nogué, J.** & Gorb, S. N. (2021). Finite Element Analysis Relating Shape, Material Properties, and Dimensions of Taenioglossan Radular Teeth with Trophic Specialisations in Paludomidae (Gastropoda). *Scientific Reports*. 11, 22775. IF: 4.380; Q1.
- 4) Esteve, J., **Marcé-Nogué, J.**, Pérez-Peris, F. & Rayfield, E. (2021). Cephalic biomechanics underpins the evolutionary success of trilobites. *Palaeontology*. 65:519-530. IF: 3.060; Q1.
- 5) Krings, W., **Marcé-Nogué, J.**, Karabacak, H., Glaubrecht, M. & Gorb, S. N. (2020). Finite element analysis of individual taenioglossan radular teeth (Mollusca). *Acta Biomaterialia*. 115: 317–332. IF: 7.242; Q1.
- 6) **Marcé-Nogué, J.** & Liu, J. (2020). Evaluating fidelity of CT based 3D models for Zebrafish conductive hearing system. *Micron*. 135: 1028742. IF: 1.726; Q2.
- 7) **Marcé-Nogué, J.**, Püschel, T. A., Daasch, A. & Kaiser, T. M. (2020). Broad scale morpho-functional traits of the mandible suggest no hard food adaptation in the hominin lineage. *Scientific Reports*. 10:6793. IF: 4.380; Q1.
- 8) Barbeito-Andrés, J., Bonfili, N., **Marcé-Nogué, J.**, Bernal, V. & Gonzalez, P. N. (2020). Modeling the

- effect of brain growth on cranial bones using finite-element analysis and geometric morphometrics. *Surgical and Radiologic Anatomy*. IF: 1.092; Q4.
- 9) Püschel, T. A., **Marcé-Nogué, J.**, Gladman, J., Patel, B., Almécija, S. & Sellers, W. I. (2020). Getting its feet on the ground: elucidating Paralouatta's semi-terrestriality using the virtual morpho-functional toolbox. *Frontiers in Earth Science*. 8:79. IF: 2.689; Q2.
 - 10) Püschel, T. A., **Marcé-Nogué, J.**, Chamberlain, A., Yoxall, A., & Sellers, W. I. (2020). The biomechanical importance of the scaphoid-centrale fusion during simulated knuckle-walking and its implications for human locomotor evolution. *Scientific Reports*. 10:3526. IF: 4.380; Q1.
 - 11) Bucchi, A., Püschel, T. A., Lorenzo, C. and **Marcé-Nogué, J.** (2020). Finite element analysis of the proximal phalanx of the thumb in Hominoidea during simulated stone tool use. *Comptes Rendus Palevol*. IF: 1.72.
 - 12) Pina, M., DeMiguel, D., Puigvert, F., **Marcé-Nogué, J.** and Moyà-Solà, S. (2020). Knee function through finite element analysis and the role of Miocene hominoids in our understanding of the origin of antipronograde behaviours: the Pierolapithecus catalaunicus patella as a case study. *Palaeontology*. IF: 2.632; Q1.
 - 13) Gruntmejer, K., Konietzko-Meier, D., **Marcé-Nogué, J.**, Bodzioch, A., and Fortuny, J. (2019). Cranial suture biomechanics in *Metoposaurus krasiejowensis* (Temnospondyli, Stereospondyli) from the Upper Triassic of Poland. *Journal of Morphology*. 45. IF: 1.588; Q2.
 - 14) Sellés, A.G. **Marcé-Nogué, J.**, Vila, B. Pérez, M.A., Gil, L. Galobart, À, Fortuny, J. (2019). A computational approach to evaluate strength in eggs: lay and crash implications for organic eggs production. *Biosystems Engineering*. 186, 146-155. IF: 2.132; Q1.
 - 15) Bucchi, C., **Marcé-Nogué, J.**, Galler, K.M., Widbiller, M. (2019). Biomechanical performance of an immature maxillary central incisor after revitalization: A finite element analysis. *Int. Endod. J.* 13159. IF: 3.015; Q1.
 - 16) Zhou, Z., Winkler, D.E., Fortuny, J., Kaiser, T.M., **Marcé-Nogué, J.** (2019). Why ruminating ungulates chew sloppily: Biomechanics discern a phylogenetic pattern. *PLoS One* 14, e0214510. IF: 2.776; Q1.
 - 17) Püschel, T. A., **Marcé-Nogué, J.**, Gladman, J.T., Bobe, R. and Sellers, W. I. (2018). Inferring locomotor behaviours in Miocene New World monkeys using Finite Element Analysis, Geometric Morphometrics and Machine-Learning classification techniques applied to talar morphology. *Journal of the Royal Society Interface* 15: 20180520. IF: 3.355; Q1.
 - 18) Püschel, T. A., **Marcé-Nogué, J.**, Kaiser, T. M., Brocklehurst, R. J. and Sellers, W. I. (2018). Analyzing the sclerocarpy adaptations of the Pitheciidae mandible. *American Journal of Primatology* e22759. IF: 2.29; Q1.
 - 19) Konietzko-Meier, D., Gruntmejer, K., **Marcé-Nogué, J.**, Bodzioch, A. and Fortuny, J. (2018). Merging cranial histology and 3D-computational biomechanics: a review of the feeding ecology of a Late Triassic temnospondyl amphibian. *PeerJ* 6, e4426. IF: 2.18; Q2.
 - 20) **Marcé-Nogué, J.**, Püschel, T.A., and Kaiser. T.M. (2017). A Biomechanical Approach to Understand the Ecomorphological Relationship between Primate Mandibles and Diet. *Scientific Reports* 7(1):8364. IF: 4.26; Q1.
 - 21) **Marcé-Nogué, J.**, De Esteban-Trivigno, S., Püschel, T.A., and Fortuny, J. (2017). The Intervals Method: A New Approach to Analyse Finite Element Outputs Using Multivariate Statistics. *PeerJ* 5:e3793. IF: 2.18; Q2.
 - 22) Zhou, Z., Fortuny, J., **Marcé-Nogué, J.**, and Skutschas, P.P. (2017). Cranial Biomechanics in Basal Urodeles: The Siberian Salamander (*Salamandrella Keyserlingii*) and Its Evolutionary and Developmental Implications. *Scientific Reports* 7(1):10174. IF: 4.26; Q1.
 - 23) Fortuny, J., **Marcé-Nogué, J.**, and Konietzko-Meier, D. (2017). Feeding Biomechanics of Late Triassic Metoposaurids (Amphibia: Temnospondyli): A 3D Finite Element Analysis Approach. *Journal of Anatomy* 230(6):752–65. IF: 2.28; Q1.
 - 24) Fortuny, J., **Marcé-Nogué, J.**, Steyer, J.-S., de Esteban-Trivigno, S., Mujal, E., Gil, L., (2016). Comparative 3D analyses and palaeoecology of giant early amphibians (Temnospondyli: Stereospondyli). *Sci. Rep.* 6, 30387. IF: 4.26; Q1.
 - 25) **Marcé-Nogué, J.**, De Esteban-Trivigno, S., Escrig, C., Gil, L., (2016). Accounting for differences in element size and homogeneity when comparing Finite Element models: Armadillos as a case study. *Palaeontol. Electron.* 19, 1–22. IF: 1.40; Q2.
 - 26) **Marcé-Nogué J.**, Fortuny J, De Esteban-Trivigno S, Sánchez M, Gil L, Galobart À. (2015) 3D Computational Mechanics Elucidate the Evolutionary Implications of Orbit Position and Size Diversity of Early Amphibians. *PLoS One*. 10(6) : e0131320. IF: 3.06; Q1.
 - 27) **Marcé-Nogué J.**, Kłodowski A, Sánchez, Gil L. (2015) Coupling finite element analysis and multibody system dynamics for biological research. *Palaeontol Electron*:18.2.5T: 1–14. IF: 1.40; Q2.

- 28) **Marcé-Nogué, J.**, Fortuny, J., Gil, L., and Sánchez, M. (2015). Improving mesh generation in Finite Element Analysis for functional morphology approaches. *Spanish Journal of Palaeontology*, 31 (1), 117-132.
- 29) Serrano-Fochs, S., de Esteban-Trivigno, S. **Marcé-Nogué, J.**, Fortuny, J., Fariña, R. (2015) Feeding ecology of Armadillos and their relatives: Insights into the biomechanics of the mandible. *Plos One*. 10(4). e0120653. IF: 3.06; Q1.
- 30) Fortuny, J., **Marcé-Nogué, J.**, Heiss, E., Sánchez, M., Gil, L., and Galobart, À. (2015) 3D bite modeling and feeding mechanics of the largest living amphibian, the Chinese Giant Salamander *Andrias davidianus* (Amphibia:Urodela). *Plos One*. . 10(4). e0121885. IF: 3.06; Q1.
- 31) Gil, L., **Marcé-Nogué, J.**, and Sánchez, M. (2015) Insights into the controversy over materials data for the comparison of biomechanical performance in vertebrates. *Paleontologia Electronica*. 18.1.12A: 1-24. IF: 1.40; Q2.
- 32) **Marcé-Nogué, J.**, DeMiguel, D., De Esteban-Trivigno, S., Fortuny, J., and Gil, L. (2013). Quasi-homothetic transformation for comparing the mechanical performance of planar models in biological research. *Palaeontologia Electronica*, 16(3). IF: 1.40; Q2.
- 33) **Marcé-Nogué, J.**, Walter, A., Gil, L., and Puigdollers, A. (2013). Finite Element Comparison of 10 Orthodontic Microscrews with Different Cortical Bone Parameters. *The International Journal of Oral and Maxillofacial Implants*, 28(4), e177–e189. IF: 1.49; Q2.
- 34) Walter, a., Winsauer, H., **Marcé-Nogué, J.**, Mojal, S., and Puigdollers, A. (2013). Design characteristics, primary stability and risk of fracture of orthodontic mini-Implants: Pilot scan electron microscope and mechanical studies. *Medicina Oral Patología Oral Y Cirugía Bucal*, e804–e810. IF: 1.10; Q3.
- 35) **Marcé-Nogué, J.**, Gil, L., Pérez, M. A., and Sánchez, M. (2013). Self-assessment exercises in continuum mechanics with autonomous learning. *Journal of Technology and Science Education*, 3(1), 23–30.
- 36) **Marcé-Nogué, J.**, Fortuny, G., Ballester, M., Carreras, F., and Roure, F. (2013). Computational modeling of electromechanical propagation in the helical ventricular anatomy of the heart. *Computers in Biology and Medicine*, 43(11), 1698–1703. IF: 1.48; Q2.
- 37) Fortuny, J., **Marcé-Nogué, J.**, Gil, L., and Galobart, À. (2012). Skull mechanics and the evolutionary patterns of the otic notch closure in capitosaurians (Amphibia: Temnospondyli). *Anatomical Record* (Hoboken, N.J.: 2007), 295(7), 1134–46. IF: 1.34; Q3.
- 38) Bernat-Masó, E., Gil, L., and **Marcé-Nogué, J.** (2012). The structural performance of arches made of few voosoirs with dry-joints. *Structural Engineering and Mechanics*, 44(6), 775–799. IF: 0.80; Q3.
- 39) **Marcé-Nogué, J.**, Salán Ballesteros, M. N., Aragoneses, A., Bernat-maso, E., Escrig, C., Otero, B., Illescas, S. (2012). Teaching Engineering with Autonomous Learning Tools: Good Practices in GRAPAU-RIMA. *Procedia - Social and Behavioral Sciences*, 46, 629–634.
- 40) Fortuny, J., **Marcé-Nogué, J.**, De Esteban-Trivigno, S., Gil, L., and Galobart, À. (2011). Temnospondyli bite club: ecomorphological patterns of the most diverse group of early tetrapods. *Journal of Evolutionary Biology*, 24(9), 2040–54. IF: 3.28; Q1.
- 41) **Marcé-Nogué J.**, Fortuny J., Gil L., Galobart A. (2011). Using reverse engineering to reconstruct tetrapod skulls and analyse its feeding behaviour. *Proceedings of the 13th International Conference on Civil, Structural and Environmental Engineering Computing*.
- 42) **Marcé-Nogué J.**, Castillo A., Quero M., Gil L., Paredero V.M.M., Hernández E. (2011). Inclusion of the Permeability in a Stent-Graft Fluid-Structure Model as a Hole-Proportion in the Surface Creation of the solid Model. *Proceedings of the 13th International Conference on Civil, Structural and Environmental Engineering Computing*.
- 43) **Marcé-Nogué J.**, Walter A., Gil L., Puigdollers A. (2010). On the Influence of Cortical Bone and Geometric Parameters in the Maxillofacial Micro-Screws used in Orthodontics. *Proceedings of the Seventh International Conference on Engineering Computational Technology*.

BOOK CHAPTERS

- 1) Winkler, D. E., **Marcé-Nogué, J.** & Kaiser, T. M. (2020). Enamel ridge alignments in ungulates: a cut above. Martin, T. and Koenigswald, W. v. [eds.]: *Mammalian Teeth – Form and Function*. Verlag Dr. Friedrich Pfeil, München.
- 2) **Marcé-Nogué, J.** (2020). Mandibular biomechanics as a key factor to understand diet in mammals. Martin, T. and Koenigswald, W. v. [eds.]: *Mammalian Teeth – Form and Function*. Verlag Dr. Friedrich Pfeil, München.

INVITED SEMINARS AND CONFERENCES

- 2021 **Speaker.** Symposium: Macroevolution of form and function in the mammalian locomotor system, Berlin, Germany.
- 2021 **Speaker.** Finite Element Modeling Mini Lecture Series and Workshop Zurich, Switzerland.
- 2020 **Speaker.** Seminar of the Master in Prehistory. Universitat Autònoma de Barcelona, Spain.
- 2018 **Speaker.** Open talks. Institut Català de Paleontologia, Barcelona, Spain.
- 2018 **Keynote Speaker.** AK vertebrate palaeontology Meeting. Magdeburg, Germany.
- 2016 **Speaker.** Open talks. Guilin University of Electronic Technology, Guilin, China
- 2013 **Speaker.** Open talks. Lappeenranta University of Technology, Lappeenranta, Finland.
- 2012 **Keynote Speaker.** V Simposio de investigación en Sistemas constructivos, computacionales y arquitectónicos. Gómez Palacio, México.
- 2011 **Keynote Speaker.** XXIII Congreso Internacional de Ingeniería, Ciencias y Arquitectura. Gómez Palacio, México.
- 2010 **Invited Speaker.** ETSEIAT, Terrassa (Catalonia), Tempus Tacis Project no 159305, Advanced M.Sc. Program in Ecology for Volgo Caspian-Basin, Barcelona Meeting Training, 2010.

More than 90 works as an author presented in national and international conferences in Europe and USA.

STAGES IN UNIVERSITIES

- 2006 Imperial college (London, UK) – 5 months
Grants for research stages outside of Catalonia during the PhD
funded by AGAUR (Catalan Governemnt)
- 2010 Universidad Autónoma de Chiapas (Tuxtla Gutiérrez, Chiapas, México) – 1 month
Invitation for teaching in a post-graduate course and giving seminars for academics
- 2013 Lappeenranta University of Technology (Lappeenranta, Finland) – 1 month
Research visit
funded by the project “The end of an era: the extinction of dinosaurs, a European perspective”. IP: Ángel Galobart. (Ministerio de Ciencia e Innovación (Spanish government)).

ORGANISATION OF SCIENTIFIC MEETINGS

- 2014 Mini-symposium “Advances in Computational Models for Vertebrate Structures in Biology and Palaeontology” in the 5th. European Conference on Computational Mechanics (ECCM V). Barcelona. Co-chair and organizer
- 2017 Symposium “Ecomorphology and functional anatomy in vertebrate palaeontology” in the 15th Annual Meeting of the Association of European Vertebrate Palaeontologists. Munich. Co-chair and organizer.

RESEARCH PROJECTS AS IP

- 2011-2012 Funded by AECID (Spanish government): “Implementation of new technologies as teaching tools for the strengthening of the postgraduate course in civil engineering of the UNACH II” / 17900 €
- 2010-2011 Funded by AECID (Spanish government): “Implementation of new technologies as teaching tools for the strengthening of the postgraduate course in civil engineering of the UNACH” / 16900 €

RESEARCH PROJECTS AS A TEAM MEMBER

- 2022-2025 Funded by the Generalitat de Catalunya (Departament de Cultura). “El final d’una Era i el sorgiment dels ecosistemes moderns” IP: Josep Fortuny.
- 2022-2025 Funded by the Generalitat de Catalunya (Departament de Cultura). “The Catalan Paleogene and the origin of the primates” IP: Judit Marigó.
- 2021-2025 Funded by Ministerio de Ciencia e Innovación (Spanish government) “How to build a giant? Life history and optimality theory are central to unravel the evolution towards ever larger insular endemics” IP: Josep Fortuny and Meike Köhler
- 2021-2025 Funded by Ministerio de Ciencia e Innovación (Spanish government) “The Cenozoic primates from the Iberian Peninsula and their contribution to the reconstruction of the evolutionary history of the group” IP: Judit Marigó and Salvador Moyà-Solà
- 2019 Funded by the Research Foundation of the State University of New York. “Building a model system for normal auditory function and conductive hearing loss using zebrafish”. IP: Juan Liu.
- 2018-2021 Funded by the Generalitat de Catalunya (Departament de Cultura). “Evolució dels ecosistemes

- durant la transició Paleozoic-Mesozoic a Catalunya”. IP: Josep Fortuny
- 2015-2018 Funded by Deutsche Forschungsgemeinschaft (DFG, German Research Foundation, KA 1525/9-2) “Function and performance enhancement in the mammalian dentition – phylogenetic and ontogenetic impact on the masticatory apparatus”. IP: Thomas. M. Kaiser
- 2011-2014 Funded by Ministerio de Ciencia e Innovación (Spanish government) “The end of an era: the extinction of dinosaurs, a European perspective”. IP: Àngel Galobart
- 2011-2012 Funded by AECID (Spanish government): “Collaborative project on sustainable concrete with vegetable fibers” IP: Carles Romeva-Rosas.
- 2010-2011 Funded by AECID (Spanish government): “Collaborative project on the experimental and numerical study of the behavior of masonry wall”. IP: Lluís Gil
- 2009-2010 Funded by ACCIÓ (Generalitat de Catalunya): “Valorisation of FRP reinforcements at different loads”. IP: Lluís Gil.
- 2005-2008 Funded by Ministerio de Ciencia e Innovación (Spanish government) “Study of composite materials for design, reinforcement and repair of civil engineering structures”. IP: Lluís Gil

PRIZES AND AWARDS

- 2009 Jaume Vicens Vives Award for the University Teaching Quality / Generalitat de Catalunya. Departament d'Innovació, Universitats i Empresa (DIUE)
- 2009 12è Award for the University Teaching Quality / Consell Social. Universitat Politècnica de Catalunya
- 2003 Best Final Bachelor Thesis in Structural Analysis “Operational guide for the calculation of Z-purlins and Eurocode 3” / ETSEIB-UPC

GRANTS

- 2006 Grants for research stages outside of Catalonia / AGAUR
- 2014 Erasmus STA grant for Staff Mobility for Teaching
- 2022 Erasmus STA grant for Staff Mobility for Teaching

REVIEWING ACTIVITIES

Reviewer for scientific journals: Biosystems Engineering, American Journal of Physical Anthropology, Communications Biology, Frontiers in Cell and Developmental Biology, Frontiers in Earth Sciences, Interface Focus, iScience, Journal of Archaeological Science, Medical Engineering & Physics, Palaeontology, PeerJ, Plos One, Proceedings of the Royal Society B, Scientific Reports, Zoomorphology.

SUPERVISION OF POSTDOC RESEARCHERS

- 2022-2024 Alessio Veneziano / Maria Zambrano Grant / **Supervisor**

SUPERVISION OF PHD STUDENTS

- 2022-2025 Matheo López-Pachón / Modelling of computational biomechanics in evolution / Universitat Rovira i Virgili / **Co-supervisor**
- 2023-2027 Bruno Maggia / A morpho-functional approach to understand the paleoecology and evolution of theropod dinosaurs / Universidade de Lisboa / **Co-supervisor**

SUPERVISION OF GRADUATE STUDENTS

- 2023 Master Thesis “Comparison of the biomechanical behavior of a healthy molar tooth, one with ankylosis and a dental implant”, Fernando Muñoz Rico, Universitat Rovira i Virgili / Master in industrial engineering / **Supervisor**
- 2023 Master Thesis “Computational Biomechanics of Premian-Triassic archosauromorpha dentition”, Bastien Salvez, Interuniversity Master in Palaeontology / Universitat Autònoma de Barcelona / Spain / **Co-supervisor**
- 2022 Master Thesis “Analysis of the mechanical behaviour of carpal bones in two different locomotion modes”, Lukasz Priachin, Universitat Rovira i Virgili / Master in industrial engineering / **Supervisor**
- 2021 Master Thesis “Determining the weight of a dinosaur from its footprints using a FEA model”, Xuyi Chen, Universitat Rovira i Virgili / Master in industrial engineering / **Supervisor**
- 2021 Master Thesis “Analysis of the modes of vibration of the inner ear in humans and Zebrafish”, Adrià Moreno Dalmau, Universitat Rovira i Virgili / Master in industrial engineering / **Supervisor**
- 2020 Master thesis “The Inner Crocodile: computational methods applied to cranial sutures biomechanics” Laia García Escolà, Interuniversity Master in Palaeontology / Universitat Autònoma de Barcelona / Spain / **Co-supervisor**

- 2017 “Mandible biomechanics in the Hominini. An approach to detect evolutionary changes in our ancestors’ masticatory apparatus”, Alexander Daasch, Master of Science in Biology / Universität Hamburg / Germany / **Co-supervisor**
- 2014 “The feeding ecology of an Early Triassic capitosaur (Amphibia: Temnospondyli)”, Natàlia Arnalda Muñoz, Interuniversity Master in Paleontology / Universitat Autònoma de Barcelona / Spain / **Co-supervisor**
- 2012 “Feeding ecology of Armadillos and their relatives: Insights into the biomechanics of the mandible”, Sílvia Serrano Fochs. Interuniversity Master in Paleontology / Universitat Autònoma de Barcelona / Spain / **Co-supervisor**
- 2011 “Finite Element Analysis in Periodontally Compromised Patients”, Alejandra Bachor Mezquida. Master in Odontology / Universitat Internacional de Catalunya / Spain / **Co-supervisor**
- 2011 “Simulation of orthodontic movement using the finite element method when varying the mechanical properties of periodontal ligament”, Katherine Landeta Morales. Master in Odontology / Universitat Internacional de Catalunya / Spain / **Co-supervisor**

SUPERVISION OF UNDERGRADUATE STUDENTS

- 2021 Supervisor of 2 Biomedical Engineering Bachelor Thesis
- 2015 Co-supervisor of 2 Industrial Engineering Bachelor Thesis
- 2014 Supervisor of 9 Industrial Engineering Bachelor Thesis
Supervisor of 2 Aeronautical Engineering Bachelor Thesis
- 2011 Supervisor of 2 Industrial Engineering Bachelor Thesis
Supervisor of 3 Aeronautical Engineering Bachelor Thesis
- 2010 Co-supervisor of 2 Industrial Engineering Bachelor Thesis

TEACHING ACTIVITIES

- 2020– Serra-Hunter Lecturer / Universitat Rovira i Virgili / Spain / Subjects: “Elasticity and Strength of Materials”, “Laboratory of Elasticity and Strength of Materials” and “Laboratory of Machines and mechanisms” / Attendants: undergraduates studying Mechanical engineering / 8 hours/week each semester.
- 2012–2017 Invited Lecturer / Transmitting Science / Spain / Course: “Introduction to Functional Morphology and Biomechanics” / Attendants: Post-doc and Pre-doc researchers / 40 hours of course. Two courses during this period
- 2013– Invited Lecturer / Transmitting Science / Spain and Argentina / Course: “Finite Element Analysis applied to life sciences” / Attendants: Post-doc and Pre-doc researchers / 40 hours of course. 5 courses during this period
- 2010–2015 Adjunct Lecturer / Universitat Politècnica de Catalunya / Spain / Subjects: “Learning Mechanics from Engineering Failure” and “Strength of Materials” / Attendants: undergraduates studying Structural and aeronautical engineering / 4 hours/week each semester.
- 2014 Invited Lecturer – Lappeenranta University of Technology / Finland / Course: “Introduction to computational biomechanics” / Attendants: master students and PhD students / 20 hours for course.
- 2011–2012 Invited Lecturer / Universidad Juárez del Estado de Durango / México / Two times of the Master course “Mathematics II” / Attendants: master students / 20 hours for course/time
- 2010–2011 Invited Lecturer / Universidad Autónoma de Chiapas / México / Two times of a Postgraduate course “Computational analysis of stress” / 25 hours for course/time
- 2005–2010 Assistant Lecturer / Universitat Politècnica de Catalunya / Spain / Subjects: “Theory of structures”, “Calculus of structures using FEA” and “Continuum Mechanics” / Attendants: undergraduates studying Structural and aeronautical engineering / 4 hours/week each semester.
- 2002–2010 Invited lecturer / Fundació Politècnica de Catalunya / Spain / Postgraduate course / “Advanced structural design and analysis” / Attendants: graduates / Between 2 and 10 hours depending on the year.

SPECIALIZED COURSES’ ATTENDANCE

- 2020 Python Machine Learning in Biology
36 h. Online course – Transmitting Science (Barcelona, Sapin)
- 2019 Journal of Morphology Reviewer Training Workshop

- 3 h. face-to-face workshop – Prague (Czech Republic)
- 2018 Capture, processing, and backup of 3D surface data of collection objects
24 h. face-to-face course – University of Hamburg (Hamburg, Germany)
- 2018 Introduction to Machine Learning (4th edition)
20 h. MOOC – Telefonica Universitas
- 2018 First Steps Into Geometric Morphometrics
4 h. face-to-face course – Transmitting Science (Caparica, Portugal)
- 2016 Evolution Today
36 h. MOOC - Universitet Leiden
- 2016 Introduction to ecological Data Analysis - 2nd edition
36 h. face-to-face course – Transmitting Science (Barcelona, Sapin)
- 2016 AprendeR: Introduction to data processing with R and RStudio
24 h. MOOC – Universitat de les Illes Balears
- 2014 Introduction to Programming for Science and Engineering (2nd edition)
22 h. MOOC – Universidad Politécnica de Madrid
- 2013 Statistics for researchers: Everything you always wanted to know
35 h. MOOC – Universidad de Salamanca
- 2013 Scientific research 2.0.1: key processes in a digital society
18 h. MOOC – Universitat de Girona
- 2012 Fatigue analysis: How to estimate the duration of life?
8 h. face-to-face course – ANSYS Iberia (Madrid, Spain)
- 2010 Specialization course on Biomechanics
40 h. face-to-face course – Fundació Politècnica de Catalunya (Barcelona, Spain)
- 2010 How to write a competitive proposal for Framework Programme 7
16 h. face-to-face course - Hyperion Ltd. (Barcelona, Spain)
- 2009 ANSYS CFD: Introductory to ANSYS CFX with fluid interaction Structure (FSI) - Processes Resolution - Design Modeler for CFD and Meshing with ANSYS Meshing
96 h. face-to-face course – Ingeciber (Madrid, Spain)
- 2008 How to create a poster
15 h. online course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2008 How to write a scientific paper
15 h. online course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2007 Dynamic analysis with ANSYS
40 h. face-to-face course - Ingeciber (Madrid, Spain)
- 2007 High performance Computations for engineering
40 h. face-to-face course – University of Pecs (Pecs, Hungary)

TEACHING COURSES' ATTENDANCE

- 2021 Dades de recerca. Principis FAIR. Elaboració del pla de gestió de dades
1.5 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2021 Llibre de qualificacions a l'aula virtual
1 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2021 Doctoral Thesis by compendium of publications
2 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2021 Seguiment de bones practiques en la supervisió doctoral
4 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Retransmissió de la classe presencial: ús de la càmera i microfonia de l'aula i novetats MSTeams
1 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 El vídeo com a recurs docent
1 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Tot a punt a l'aula virtual? Comencem el nou curs
1 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Bones pràctiques en la supervisió doctoral
18 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Per què i com introduir la perspectiva de gènere a les enginyeries
2.5 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Webinar: Estratègies per optimitzar la producció en accés obert
1 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Recursos d'informació en línia en l'àmbit de la ciència i la tecnologia

- 2.5 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Perspectiva de gènere i violències masclistes
8 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Moodle 101. Introducció al Campus Virtual de la URV
5 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Estratègies per optimitzar la producció en accés obert –
1 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2020 Moodle 2. Curs avançat del Campus Virtual URV
5 h. Online course - ICE (Education Institute) of the Universitat Rovira i Virgili.
- 2019 Public Speaking
1 h. face-to-face course - KL2 Mentored Career Development Award Program and Community of Scholars (Buffalo, NY, USA)
- 2019 Effective Teaching: Evidence - Based Principles in Practice
1 h. face-to-face course - KL2 Mentored Career Development Award Program and Community of Scholars (Buffalo, NY, USA)
- 2014 Introduction to the MOOC and initiation to the Canvas platform
2 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2013 Methods and techniques of interest and motivation for students to learn in higher education
4 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2013 Continuous assessment of the learning in numerous groups
4 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2012 Skills and Strategies for Teaching Content Subjects through English at University
20 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2012 Utilització de personatges virtuals per a la realització de tutories
12 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2011 Theatrical resources for teachers
10 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2010 Learning itinerary to do teaching in English
20 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2010 Teaching tool based on web applications to assess competencies
18 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2009 The evaluation process by competencies
4 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2008 Practical introduction to the realization and dissemination of educational videos at low cost
30 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2008 Development of the Teaching Portfolio
15 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2007 Teaching and teaching organization with the support of digital technologies in the EEES
25 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2007 Use of surveys for continuous improvement (SEEQ)
15 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2007 Elaboration and analysis of the evaluation tools
15 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2006 Essay of an active learning experience
15 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2006 Classmates Observation (PROPICE)
15 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2006 Definition of the objectives of a subject
8 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2006 The evaluation of the learning
12 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2006 How our students learn
8 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2006 Expositive classes and their alternatives
8 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)
- 2006 How to speak better in public
7 h. face-to-face course - Institut de ciències de l'Educació (Barcelona, Spain)