



JOANNA BABILOTTE

09/01/1994

Google Scholar: <https://scholar.google.com/citations?user=orFvlygAAAAJ&hl=fr>

LinkedIn: <https://www.linkedin.com/in/joannababilotte/>

ORCID: [0000-0003-1484-4143](https://orcid.org/0000-0003-1484-4143)

Email: joanna.babilotte@univ-nantes.fr

BACKGROUND

01/02/2025 – To date: **Post-doctoral researcher at the Regenerative Medicine and Skeleton laboratory** (RMeS – Nantes, France)

Mentor: Dr. Vianney Delplace

Topic: Development of advanced bioinks for high-resolution printing applied to cartilage tissue engineering.

15/03/2021 – 15/12/2024: **Post-doctoral researcher at Institute for Technology-Inspired Regenerative Medicine** (MERLN – Maastricht University, Netherlands)

Mentor: Pr. Lorenzo Moroni

Topic: Innovative materials and hybrid additive manufacturing for complex multi-material scaffolds in bone and cartilage tissue engineering.

→ 3 first-author papers (in preparation), 5 co-author papers (1 in preparation)

01/10/2017 – 28/02/2021: **PhD at BioTis laboratory** (INSERM U1026 – Bordeaux, France)

Mentor: Dr. Sylvain Catros

Topic: Development of a novel biofabrication approach based on a layer-by-layer cellularization method for bone tissue application.

→ 2 first-author papers (including one literature review with 140 citations), 2 co-author papers

01/09/2012 – 30/06/2017: **Master's degree in engineering (CMI) - Biomaterials for health** - Cergy-Paris University, France

- 09/01/2017 – 30/06/2017: **Internship at BioTis laboratory** (INSERM U1026 – Bordeaux, France)

Mentor: Dr. Sylvain Catros

Topic: Development and physico-chemical and biological evaluation of a new composite material for bone repair, compatible with 3D printing by Fused Deposition Modeling (FDM).

- 12/09/2016 – 09/12/2016: **Industrial project with BIOBank company** (Lieuxaint, France)

Mentors: Dr. Ana Barbeito and Pr. Emmanuel Pauthe

Topic: Study of the thermal impact on the physico-chemical properties of a new bone substitute material.

- 04/01/2016 – 26/02/2016: **Internship at University Hospital Centre of Bordeaux** (CHU de Bordeaux, France)

Mentor: Dr. Sylvain Catros

Topic: Study of the different biomaterials used in odontology and their medical indications in therapeutic implantation procedures.

→ 1 co-author publication

- 12/01/2015 – 31/07/2015: **Internship at ERRMECe laboratory** (E.A. 1391- Cergy-Pontoise, France)

Mentors: Pr. Emmanuel Pauthe et Pr. Jean Christophe Fricain

Topic: Biofunctionalization of a bone allograft with a film loaded with BMP2. The developed material was implanted subcutaneously in mice to assess ectopic bone formation.

SCIENTIFIC COMMUNITY INVOLVEMENT

- Young researcher board of the French Association for the Development of Biomaterials (BIOMAT) since January 2022
 - Communication manager 2022-2023
 - Event manager 2023-2024
 - Spokesperson 2024-2025

- Organizing committee of the 2nd BIOMAT Summer School « Biomaterials for Medical Devices and Regenerative Medicine » (Paris, France, 2025)
- Organizing committee of the 6th BIOMAT Conference (Super-Besse, France, 2024)
- Organizing committee of the 1st Swiss-French Biomaterials (SFB) Summer School (Zurich, Switzerland, 2023)
- Organizing committee of the 32nd Congress of the European Society for Biomaterials (Bordeaux, France, 2022)
- Organizing committee of the 1st BIOMAT Summer School « Biomaterials for Medical Devices and Regenerative Medicine » (Bordeaux, France, 2018)
- PhD representative at laboratory council (BioTis - Inserm U1026, Bordeaux University, France, 2018-2020)
- Animation of the bone and cartilage working group for the Complex Tissue Regeneration (CTR) department at MERLIN Institute (June 2021 – December 2024)

SCIENCE OUTREACH AND PUBLIC ENGAGEMENT

- Science Fair in Nantes (2025): Presenting RMeS activities to a large audience (from kids to adults)
- Event Manager for Pint of Science Maastricht (2022-2025): Finding speakers, arranging venues, seeking sponsorship
- Communication manager for PubhD (Bordeaux, France, 2018-2019): Preparing communication support, spreading communication through network and social media.

SCIENTIFIC COMMUNICATIONS

Publications in peer-reviewed journals

- F. Farina, M. Licciardello, L. Moroni, **J. Babilotte**, G. Ciardelli, C. Tonda-Turo. “Voronoi path generator for Extrusion-based 3D printing”, *Under revision in Material design*
- M. Caiado Decarli, **J. Babilotte**, W. Chen, J. Kappesz, T. ten Brink, L. Dechant, M. Kalogeropoulou, C. Tomasina, C. Custodio, J. F. Mano, L. Moroni. “Xanthan gum-iron system: natural, mechanically tuneable, bioactive, and magnetic-responsive hydrogels for tissue engineering applications”, *ACS Applied Materials & Interfaces* (2025). DOI: 10.1021/acsami.5c08442
- R. Sobreiro-Almeida, S. C. Santos, M. Caiado Decarli, M. Costa, T. R. Correia, **J. Babilotte**, C. A. Custódio, L. Moroni, J. F. Mano. “Leveraging blood components for 3D printing applications through programmable ink engineering approaches”, *Advanced Science* (2024). DOI: 10.1002/adv.202406569
- M. Caiado Decarli, H. Soares de Paiva Ferreira, R. Sobreiro-Almeida, T. Correia, J. Olijve, **J. Babilotte**, C. Custódio, I. C. Gonçalves, C. Mota, J. F. Mano, L. Moroni. “Embedding Bioprinting of Low Viscous, Photopolymerizable Blood-Based Bioinks in a Crystal Self-Healing Transparent Supporting Bath”, *Small Methods* (2024). DOI: 10.1002/smt.202400857
- J. Stouten, N. Sijstermans, **J. Babilotte**, A. Pich, L. Moroni, K.V. Bernaerts. “Micellar drug delivery vehicles formed from amphiphilic block copolymers bearing photo-cross-linkable cyclopentenone side groups”, *Polymer Chemistry* (2022). DOI: 10.1039/D2PY00631F
- F.R. l'Alzit, R. Cade, A. Naveau, **J. Babilotte**, M. Meglioli, S. Catros. “Accuracy of commercial 3D printers for the fabrication of surgical guides in dental implantology”, *Journal of Dentistry* (2022). DOI: 10.1016/j.jdent.2021.103909
- **J. Babilotte**, B. Martin, V. Guduric, R. Bareille, R. Agniel, S. Roques, V. Héroguez, M. Dussauze, M. Gaudon, D. Le Nihouannen, S. Catros. “Development and characterization of a PLGA-HA composite material to fabricate 3D-printed scaffolds for bone tissue engineering”, *Biomaterials Advances* (2021). DOI: 10.1016/j.msec.2020.111334

- **J. Babilotte**, V. Guduric, D. Le Nihouannen, A. Naveau, J-C Fricain, S. Catros. "3D printed polymer–mineral composite biomaterials for bone tissue engineering: Fabrication and characterization", *Journal of Biomedical Materials Research Part B: Applied Biomaterials* (2019). DOI: 10.1002/jbm.b.34348
- V. Guduric, R. Siadous, **J. Babilotte**, M. Seimbille, R. Bareille, S. Rey, N. B. Thébaud, D. Le Nihouannen, J-C. Fricain, R. Devillard, O. Luzanin, S. Catros. "Layer-by-layer bioassembly of poly (lactic) acid membranes loaded with coculture of HBMSCs and EPCs improves vascularization in vivo", *Journal of Biomedical Materials Research Part A* (2019). DOI :10.1002/jbm.a.36769
- T. Blanchy, **J. Babilotte**, M. Fénelon, J-M Marteau, J-C Fricain, S. Catros. "Intérêt des éponges de collagène pour prévenir la résorption osseuse alvéolaire post-extractionnelle: revue systématique de la littérature", *Journal of Oral Medicine and Oral Surgery* (2016). DOI: 10.1051/mbcb/2016054

Selection of communications at national and international conferences

- **J. Babilotte**, C. Tomasina, M. Caiado Decarli, P. Wieringa, L. Moroni. "Wave-Inspired MEW Scaffolds for Enhanced Ligament Tissue Regeneration", *European Society for Biomaterials – Turin (Italy)*, 2025 (Oral)
- **J. Babilotte**, M. Caiado Decarli, R. Sobreiro-Almeida, S. Olhero, P. Wieringa, L. Moroni. "Bioinspired scaffolds for the regeneration of the temporomandibular joint", *World Biomaterials Congress – Daegu (Korea)*, 2024 (Oral)
- **J. Babilotte**, C. Avventi, M. Caiado Decarli, P. Wieringa, V. Vida, L. Moroni. "Wave-Inspired MEW Scaffolds for Enhanced Ligament Tissue Regeneration", *BIOMAT & MatSan conference – Superbesse (France)*, 2024 (Oral)
- **J. Babilotte**, M. Ferreira, M. Caiado Decarli, R. Sobreiro-Almeida, P. Wieringa, J. Mano, S. Olhero, L. Moroni. "Engineering Hydroxyapatite-Loaded Scaffolds with Melt Electrowriting", *European Society for Biomaterials – Davos (Switzerland)*, 2023 (Poster)
- **J. Babilotte**, M. Caiado Decarli, R. Sobreiro-Almeida, S. Olhero, P. Wieringa, L. Moroni. "Bioinspired scaffolds for the regeneration of the temporomandibular joint", *BIOMAT – Bazas (France)*, 2023 (Oral)
- **J. Babilotte**, M. Caiado Decarli, A. Chandrakar, P. Wieringa, L. Moroni. "Multi-Material Approach For The Replacement Of The Temporomandibular Joint", *European Society for Biomaterials – Bordeaux (France)* 2022 (Flash poster)
- **J. Babilotte**, A. Chandrakar, M. Caiado Decarli, P. Wieringa, and L. Moroni. "Melt Electrowriting of highly viscous polymers for tissue regeneration", *Biofabrication – Pisa (Italy)*, 2022 (Oral)
- **J. Babilotte**, B. Martin, O. Chassande, S. Rey, M. Saint-Marc, D. Le Nihouannen, S. Catros. "*In vivo* bone regeneration using a layer-by-layer assembly of PLGA-HA membrane loaded with SVF from adipose tissue", *Tissue Engineering and Regenerative Medicine International Society – Maastricht (Netherlands)*, 2021 (Flash Poster)
- **J. Babilotte**, B. Martin, O. Chassande, D. Le Nihouannen, S. Catros. "Development of a poly(lactic-co-glycolic) acid - hydroxyapatite 3D-printed scaffolds for bone tissue engineering", *European Calcified Tissue Society Congress – Marseille (France)*, 2020 (**Invited conference**)
- **J. Babilotte**, V. Guduric, R. Bareille, D. Le Nihouannen, J-C. Fricain, S. Catros. "*In vitro* characterization of a poly(lactic-co-glycolic) acid - hydroxyapatite 3D-printed scaffolds for bone tissue engineering", *BIOMAT – La Grande Motte (France)*, 2019 (Oral)
- **J. Babilotte**, V. Guduric, R. Bareille, D. Le Nihouannen, J-C. Fricain, S. Catros. "Characterization of a poly(lactic-co-glycolic) acid - hydroxyapatite 3D-printed scaffolds for bone tissue engineering", *European Society for Biomaterials – Dresde (Germany)*, 2019 (Flash Poster)
- **J. Babilotte**, V. Guduric, R. Bareille, D. Le Nihouannen, T. Cardinal, M. Gaudon, J-C. Fricain, S. Catros. "Development and characterization of a Poly(lactic-co-glycolic) acid - hydroxyapatite

composite material to fabricate 3D-printed scaffolds for bone tissue engineering”, 3rd International Conference on 3D Printing in Medicine – Mainz (Germany), 2018 (Oral)

- **J. Babilotte**, V. Guduric, R. Bareille, D. Le Nihouannen, T. Cardinal, M. Gaudon, L. Teule Gay, J-C. Fricain, S. Catros. “Development of a PLGA-HA composite material to fabricate 3D-printed scaffolds for bone tissue engineering”, European Society for Biomaterials – Maastricht (Netherlands), 2018 (Poster)
- **J. Babilotte**, V. Guduric, R. Bareille, D. Le Nihouannen, T. Cardinal, M. Gaudon, L. Teule Gay, J-C. Fricain, S. Catros. “Development of a PLGA-HA composite material to fabricate 3D-printed scaffolds for bone tissue engineering”, Journées Françaises des Tissus Minéralisés – Monaco, 2018 (Poster)
- **J. Babilotte**, V. Guduric, R. Bareille, D. Le Nihouannen, T. Cardinal, M. Gaudon, J-C. Fricain, S. Catros. “Development and characterization of a Poly(lactic-co-glycolic) acid - hydroxyapatite composite material to fabricate 3D-printed scaffolds for bone tissue engineering”, Biofabrication – Beijing (China), 2017 (Oral)

PRIZES AND AWARDS

- Seal of Excellence for CHITOBONE project - MSCA Postdoctoral Fellowships 2023 (86.80%) & 2024 (91.20%)
- IOP Outstanding Reviewer Awards 2023
- ISBF Travel Grant for Biofabrication conference in Columbus, United States (2019).
- Top downloaded paper of 2018-2019 of Journal of Biomedical Materials Research Part B: Applied Biomaterials for Babilotte et al. “3D printed polymer–mineral composite biomaterials for bone tissue engineering: Fabrication and characterization” (2019)
- Best communication at Journées Françaises des Tissus Minéralisés, Monaco (2018).
- Best communication at Bioceramics, Toulouse, France (2017)

TEACHING ACTIVITIES

- Tutor at Maastricht University in:
 - Regenerative Medicine: Bachelor students (2022-2024): 90h in total
 - Biomedical Approaches including animal course: Master students (2021-2023): 102h in total
 - Neurology, Anatomy and Physiology: 1st-year medicine (2022): 45h in total
- Lab skills trainer in Regenerative Medicine and Technology for Bachelor students (Maastricht University 2023-2024): 20h in total
- Trainer for 3D printing technologies workshops dedicated to PhD students, post-docs and researchers (BioTis, 2018-2019)

CO-CHAIRING AT INTERNATIONAL CONFERENCES

- Co-chairperson in “Stay flexible: dynamic materials for printing responsive systems” session, 34th Congress of the European Society for Biomaterials (Turin, Italy, 2025)
- Co-chairperson in “Sensing cells and their microenvironments” and “Emerging Biofabrication Strategies for Engineering Bioactive Tissue Constructs” sessions, 33rd Congress of the European Society for Biomaterials (Davos, Switzerland, 2023)
- Co-chairperson in “Polymer II” session, 32nd Congress of the European Society for Biomaterials (Bordeaux, France, 2022)

PEER REVIEW

- For international journals: Biomedical Materials (IOP Science), PLOS ONE, Biomaterial Advances (Elsevier), Material Today Bio (Elsevier), Journal of Materials Science (Springer)
- For grant applications: IFRO (The French Institute for Dental Research), NOW Open Competition Domain Science – XS grants