

MATTHEW B. BAKER

| m.baker@maastrichtuniversity.nl | biomattgroup.com

EDUCATION

University of Florida, Gainesville, FL	
Ph. D. in Organic Chemistry, College of Liberal Arts and Sciences	2007–2012
Thesis Title: “Molecular multifunctionalization via electronically coupled lactones”	
New Venture Certificate, Warrington School of Business	
Clemson University, Clemson, SC	
B.S. in Chemistry, minor in Physics	2002–2006

RESEARCH POSITIONS

Associate Professor	
MERLN, Maastricht University, Maastricht, NL	2024–present
Assistant Professor	
MERLN, Maastricht University, Maastricht, NL	2017–2024
Principal Investigator	
MERLN, Maastricht University, Maastricht, NL	2015–2017
Post-doctoral Researcher	
Eindhoven University of Technology, Eindhoven, NL	2012–2015
Advisor: Prof E. W. (Bert) Meijer	
Graduate Student	
University of Florida, Gainesville, FL, USA	2007–2012
Advisor: Prof. Ronald K. Castellano	
Chemist I	
Tetramer Technologies LLC, Pendelton, SC, USA	2006–2007

PUBLICATIONS

- 1 S Camarero-Espinosa, I Beeren, H Liu, DB Gomes, J Zonderland, AFH Lourenço, D van Beurden, M Peters, D Koper, P Emans, P Kessler, T Rademakers, MB Baker, N Bouvy, L Moroni, “3D Niche-Inspired Scaffolds as a Stem Cell Delivery System for the Regeneration of the Osteochondral Interface.” *Advanced Materials*, **2024**, 2310258. [DOI](#)
- 2 LBPM Stevens Brentjens, D Obukhova, B Delvoux, JE Den Hartog, BN Bui, F Mol, JP de Bruin, D Besselink, G Teklenburg, F Morgan, M Baker, FJM Broekmans, RJT van Golde, M Zamani Esteki, A Romano, “Local production of 17 β -oestradiol in the endometrium during the implantation window: a pilot study.” *Reproduction and Fertility*, **2023**, 4, e230065. [DOI](#)
- 3 A Zengin, F Castro Teixeira, T Feliciano, P Habibovic, C Domingues Mota, MB Baker, S van Rijt, “Matrix metalloproteinase degradable, in situ photocrosslinked nanocomposite biinks for bioprinting applications.” *Biomaterials Advances*, **2023**, 154, 213647. [DOI](#)

- 4 S Hafeez, MC Decarli, A Aldana, M Ebrahimi, FAA Ruitter, H Duimel, C van Blitterswijk, LM Pitet, L Moroni, MB Baker, "In Situ Covalent Reinforcement of a Benzene-1, 3, 5-Tricarboxamide Supramolecular Polymer Enables Biomimetic, Tough, and Fibrous Hydrogels and Bioinks." *Advanced Materials*, **2023**, *35*, 2301242. [DOI](#)
- 5 J Fernández-Pérez, KA van Kampen, C Mota, MB Baker, L Moroni. "Flexible, Suturable, and Leak-free Scaffolds for Vascular Tissue Engineering Using Melt Spinning." *ACS Biomaterials Science & Engineering*, **2023**, *9*, 5006–5014. [DOI](#)
- 6 AJ Feliciano, E Soares, AW Bosman, C van Blitterswijk, L Moroni, VLS LaPointe, MB Baker. "Complementary Supramolecular Functionalization Enhances Antifouling Surfaces: A Ureidopyrimidinone-Functionalized Phosphorylcholine Polymer." *ACS Biomaterials Science & Engineering*, **2023**, *9*, 4619–4631. [DOI](#)
- 7 AJ Feliciano, R Grant, J Fernández-Pérez, S Giselbrecht, MB Baker. "Introducing Dynamicity: Engineering Stress Relaxation Into Hydrogels Via Thiol-Ene Modified Alginate for Mechanobiological in vitro Modeling of the Cornea." *Macromolecular Bioscience*, **2023**, 2300109. [DOI](#)
- 8 R Wang, F Damanik, T Kuhnt, A Jaminon, S Hafeez, H Liu, H Ippel, PJ Dijkstra, N Bouvy, L Schurgers, AT Ten Cate, A Dias, L Moroni, MB Baker. "Biodegradable poly (ester) urethane acrylate resins for digital light processing: From polymer synthesis to 3D printed tissue engineering constructs." *Advanced Healthcare Materials*, **2023**, *12*, 2202648. [DOI](#)
- 9 Decarli, M. C.; Seijas-Gamardo, A.; Morgan, F. L. C.; Wieringa, P.; Baker, M. B.; Silva, J. V. L.; Moraes, Â. M.; Moroni, L.; Mota, C. "Bioprinting of stem cell spheroids followed by post-printing chondrogenic differentiation for cartilage tissue engineering." *Advanced Healthcare Materials*, **2023**, 2203021. [DOI](#)
- 10 Hafeez, S.; Aldana, A. A.; Duimel, H.; Ruitter, F. A. A.; Decarli, M. C.; Lapointe, V.; van Blitterswijk, C.; Moroni, L.; Baker, M. B., "Molecular Tuning of a Benzene-1,3,5-Tricarboxamide Supramolecular Fibrous Hydrogel Enables Control over Viscoelasticity and Creates Tunable ECM-Mimetic Hydrogels and Bioinks." *Advanced Materials*, **2023**, *35*, 2207053. [DOI](#)
- 11 Houben, S.; Aldana, A. A.; Huysecom, A.-S.; Mpinganzima, W.; Cardinaels, R.; Baker, M. B.; Pitet, L. M., "Hybrid Hydrogels with Orthogonal Transient Cross-linking Exhibiting Highly Tunable Mechanical Properties." *ACS Applied Polymers & Materials*, **2023**, *5*, 1819-1827. [DOI](#)
- 12 Ruitter, F. A. A.; King, J.; Swapnasrita, S.; Giselbrecht, S.; Truckenmüller, R.; LaPointe, V. L. S.; Baker, M. B.; Carlier, A., "Optimization of Media Change Intervals through Hydrogels Using Mathematical Models." *Biomacromolecules*, **2023**, *24*, 604-612. [DOI](#)
- 13 Beeren, I. A. O.; Dijkstra, P. J.; Lourenço, A. F. H.; Sinha, R.; Gomes, D. B.; Liu, H.; Bouvy, N.; Baker, M. B.; Camarero-Espinosa, S.; Moroni, L., "Installation of click-type functional groups enable the creation of an additive manufactured construct for the osteochondral interface." *Biofabrication*, **2022**, *15*. [DOI](#)
- 14 Kuhnt, T.; Camarero-Espinosa, S.; Takhsha Ghahfarokhi, M.; Arreguín, M.; Cabassi, R.; Albertini, F.; Nieto, D.; Baker, M. B.; Moroni, L., "4D Printed Shape Morphing Biocompatible Materials Based on Anisotropic Ferromagnetic Nanoparticles." *Advanced Functional Materials*, **2022**, *32*, 2270289. [DOI](#)
- 15 IAO Beeren, PJ Dijkstra, P Massonnet, S Camarero-Espinosa, MB Baker, L Moroni. "Controlling tosylation versus chlorination during end group modification of PCL". *European Polymer Journal*, **2022**, 111576. [DOI](#)
- 16 S Hafeez, FR Passanha, AJ Feliciano, FAA Ruitter, A Malheiro, RPM Lafleur, NM Matsumoto, C van Blitterswijk, L Moroni, P Wieringa, VLS LaPointe, MB Baker. "Modular mixing of benzene-1,3,5-tricarboxamide supramolecular hydrogelators allows tunable biomimetic hydrogels for control of cell aggregation in 3D." *Biomaterials Science*, **2022**, *10*, 4740–4755. [DOI](#)
- 17 S Hafeez, HW Ooi, D Suylen, H Duimel, TM Hackeng, C van Blitterswijk, MB Baker. "Desymmetrization via activated esters enables rapid synthesis of multifunctional benzene-1,3,5-tricarboxamides and creation of supramolecular hydrogelators." *Journal of the American Chemical Society*, **2022**, *144*, 4057–4070. [DOI](#)
- 18 T Kuhnt, S Camarero-Espinosa, MT Ghahfarokhi, M Arreguín, R Cabassi, F Albertini, D Nieto, MB Baker, L Moroni. "4D printed shape morphing biocompatible materials based on anisotropic ferromagnetic nanoparticles." *Advanced Functional Materials*, **2022**, 2202539. [DOI](#)
- 19 KA van Kampen, J Fernández-Pérez, M Baker, C Mota, L Moroni. "Fabrication of a mimetic vascular graft using melt spinning with tailorable fiber parameters." *Biomaterials Advances*, **2022**, *139*, 212972. [DOI](#)

- 20 T Yao, T van Nunen, R Rivero, C Powell, R Carrazzone, L Kessels, PA Wieringa, S Hafeez, TGAM Wolfs, L Moroni, JB Matson, MB Baker. "Electrospun scaffolds functionalized with a hydrogen sulfide donor stimulate angiogenesis." *ACS Applied Materials & Interfaces*, **2022**, *14*, 28628–28638. [DOI](#)
- 21 T Yao, H Chen, R Wang, R Rivero, F Wang, L Kessels, SM Agten, TM Hackeng, TGAM Wolfs, D Fan, MB Baker, L Moroni. "Thiol-ene conjugation of VEGF peptide to electrospun scaffolds as potential application for angiogenesis." *Bioactive Materials*, **2022**, *20*, 306–317. [DOI](#)
- 22 MB Baker, AW Bosman, MAJ Cox, PYW Dankers, A Dias, P Jonkheijm, R Kieltyka. "Supramolecular biomaterials in the Netherlands." *Tissue Engineering Part A*, **2022**, *28*, 511–524.
- 23 FR Passanha, DB Gomes, J Piotrowska, Students of PRO3011, L Moroni, MB Baker, VLS LaPointe. "A comparative study of mesenchymal stem cells cultured as cell-only aggregates and in encapsulated hydrogels." *Journal of Tissue Engineering and Regenerative Medicine*, **2022**, *16*, 14–25. [DOI](#)
- 24 FAA Ruiter, FLC Morgan, N Roumans, A Schumacher, GG Slaats, L Moroni, VLS Lapointe, MB Baker. "Soft, dynamic hydrogel confinement improves kidney organoid lumen morphology and reduces epithelial-mesenchymal transition in culture." *Advanced Science*, **2022**, 2200543. [DOI](#) (BioRxiv Preprint; [DOI](#))
- 25 FLC Morgan, J Fernandez-Perez, L Moroni, MB Baker. "Tuning hydrogels by mixing dynamic cross-linkers: enabling cell-instructive hydrogels and advanced bioinks." *Advanced Healthcare Materials*, **2022**, *11*, 2101576. [DOI](#) (Rising Stars special collection)
- 26 AA Aldana, FLC Morgan, S Houben, LM Pitet, L Moroni, MB Baker. "Biomimetic double network hydrogels: combining dynamic and static crosslinks to enable biofabrication and control cell-matrix interactions." *Journal of Polymer Science*, **2021**, *59*, 2832–2843. [DOI](#) (Young Investigator special issue)
- 27 J Bolander, C Mota, HW Ooi, H Agten, MB Baker, L Moroni, FP Luyten. "Bioinspired development of an in vitro engineered fracture callus for the treatment of critical long bone defects." *Advanced Functional Materials*, **2021**, 2104159. [DOI](#)
- 28 T Geuens, FAA Ruiter, A Schumacher, FLC Morgan, T Rademakers, LE Wiersma, CW van den Berg, TJ Rabelink, MB Baker, VLS LaPointe. "Thiol-ene cross-linked alginate hydrogel encapsulation modulates the extracellular matrix of kidney organoids by reducing abnormal type 1a1 collagen deposition." *Biomaterials*, **2021**, *275*, 120976. [DOI](#)
- 29 T Kuhnt, FLC Morgan, MB Baker, L Moroni. "An efficient and easily adjustable heating stage for digital light processing set-ups." *Additive Manufacturing.*, **2021**, *46*, 102102. [DOI](#)
- 30 AA Aldana, S Houben, L Moroni, MB Baker, LM Pitet. "Trends in double networks as bioprintable and injectable hydrogel scaffolds for tissue regeneration." *ACS Biomaterials Science & Engineering*, **2021**, *7*, 4077–4101. [DOI](#)
- 31 AJ Feliciano, C van Blitterswijk, L Moroni, MB Baker. "Realizing tissue integration with supramolecular hydrogels." *Acta Biomaterialia*, **2021**, *124*, 1–14. [DOI](#)
- 32 F Zaccarian, MB Baker, MJ Webber. "Biomedical uses of sulfobetaine-based zwitterionic materials." *Organic Materials*, **2020**, *2*, 342–357. [DOI](#)
- 33 A Malheiro, F Morgan, MB Baker, L Moroni, P Wieringa. "A three-dimensional biomimetic peripheral nerve model for drug testing and disease modelling." *Biomaterials*, **2020**, *257*, 120230. [DOI](#)
- 34 T Yao, P Wieringa, H Chen, A Chandrakar, P Samal, S Giselsbrecht, MB Baker, L Moroni. "Fabrication of a self-assembled honeycomb nanofibrous scaffold to guide endothelial morphogenesis." *Biofabrication*, **2020**, *12*. [DOI](#)
- 35 C Mota, S Camarero-Espinosa, MB Baker, P Wieringa, L Moroni. "Bioprinting: from tissue and organ development to in vitro models." *Chemical Reviews*, **2020**, *120*, 10547–10607. [DOI](#)
- 36 T Yao, MB Baker, L Moroni. "Strategies to improve nanofibrous scaffolds for vascular tissue engineering." *Nanomaterials*, **2020**, *10*, 887. [DOI](#)
- 37 HW Ooi, JMM Kocken, F Morgan, ABFB Malheiro, B Zoetebier, M Karperien, PA Wieringa, P Dijkstra, L Moroni, MB Baker. "Multivalency enables dynamic supramolecular host-guest hydrogel formation." *Biomacromolecules*, **2020**, *21*, 2208–2217. [DOI](#).
- 38 FLC Morgan, L Moroni, MB Baker. "Dynamic bioinks to advance bioprinting." *Advanced Healthcare Materials*, **2020**, *9*, 1901798. [DOI](#)

- 39 T Yao, H Chen, MB Baker, L Moroni. "Effects of fiber alignment and co-culture with endothelial cells on osteogenic differentiation of mesenchymal stromal cells." *Tissue Engineering Part C: Methods*, **2020**, *26*, 11–22. [DOI](#)
- 40 T Kuhnt, R Marroquin Garcia, S Camarero-Espinosa, A Dias, T ten Cate, CA van Blitterswijk, L Moroni, MB Baker. "Biocompatible and bioresorbable poly(caprolactone-co-trimethylenecarbonate) urethane acrylate resins for digital light processing." *Biomaterials Science*, **2019**, *7*, 4984–4989. [DOI](#) (Emerging Investigators special issue)
- 41 T Yao, H Chen, P Samal, S Giselsbrecht, MB Baker, L Moroni. "Self-assembly of electrospun nanofibers into gradient honeycomb structures." *Materials & Design*, **2019**, 107614. [DOI](#)
- 42 S Hafeez, HW Ooi, F Morgan, CA van Blitterswijk, L Moroni, MB Baker. "Viscoelastic oxidized alginates with reversible imine type crosslinks: self-healing, injectable, and bioprintable hydrogels." *Gels*, **2018**, *4*, 85. [DOI](#) (Smart Hydrogels for (Bio)printing Applications special issue).
- 43 JA Berrocal, MB Baker, L Baldini, A Casnati, S Di Stefano. "Inherently chiral cone-calix [4] arenes via a subsequent upper rim ring closing/opening methodology." *Organic and Biomolecular Chemistry*, **2018**, *16*, 7255–7264. [DOI](#)
- 44 HW Ooi, C Mota, A Calore, T ten Cate, L Moroni, MB Baker. "Thiol-ene alginate hydrogels as versatile bioinks for bioprinting." *Biomacromolecules*, **2018**, *19*, 3390–3400. [DOI](#)
- 45 X Lou, B Li, BFM Waal, J Schill, MB Baker, RAA Bovee, JLJ Dongen, LG Milroy, EW Meijer. "Fragmentation of organic ions bearing fixed multiple charges observed in MALDI MS." *Journal of Mass Spectrometry.*, **2018**, *53*, 39–47. [DOI](#)
- 46 HW Ooi, S Hafeez, CA van Blitterswijk, L Moroni, MB Baker. "Hydrogels that listen to cells: A review of cell-responsive strategies in biomaterials design for tissue regeneration." *Materials Horizons*, **2017**, *4*, 1020–1040. [DOI](#)
- 47 H Chen, X Huang, M Zhang, F Damanik, MB Baker, A Leferink, H Yuan, R Truckenmüller, C van Blitterswijk, L Moroni. "Tailoring surface nanoroughness of electrospun scaffolds for skeletal tissue engineering." *Acta Biomaterialia*, **2017**, *59*, 82–93. [DOI](#)
- 48 X Lou, RPM Lafleur, CMA Leenders, SMC Schoenmakers, NM Matsumoto, MB Baker, JLJ van Dongen, ARA Palmans, EW Meijer. "Dynamic diversity of synthetic supramolecular polymers in water as revealed by hydrogen/deuterium exchange." *Nature Communications*, **2017**, *8*, 15420. [DOI](#)
- 49 M Garzoni, MB Baker, CMA Leenders, IK Voets, L Albertazzi, ARA Palmans, EW Meijer, GM Pavan. "Effect of H-bonding on order amplification in the growth of a supramolecular polymer in water." *Journal of the American Chemical Society*, **2016**, *138*, 13985–13995. [DOI](#)
- 50 MB Baker, RB Ferreira, J Tasseroul, AJ Lampkins, A Al Abbas, KA Abboud, RK Castellano. "Selective and sequential aminolysis of benzotriuranone: synergism of electronic effects and ring strain gradient." *Journal of Organic Chemistry*, **2016**, *81*, 9279–9288. [DOI](#)
- 51 ABFB Malheiro, PA Wieringa, C Mota, MB Baker, L Moroni. "Patterning vasculature: the role of biofabrication to achieve an integrated multicellular ecosystem." *ACS Biomaterials Science & Engineering*, **2016**, *2*, 1694–1709. [DOI](#)
- 52 CMA Leenders, MB Baker, IAB Pijpers, RPM Lafleur, L Albertazzi, ARA Palmans, EW Meijer. "Supramolecular polymerisation in water; elucidating the role of hydrophobic and hydrogen-bond interactions." *Soft Matter*, **2016**, *12*, 2887–2893. [DOI](#)
- 53 MB Baker, RPJ Gosens, L Albertazzi, NM Matsumoto, ARA Palmans, EW Meijer. "Exposing differences in monomer exchange rates of multicomponent supramolecular polymers in water." *ChemBioChem*. **2016**, *17*, 207–213. [DOI front cover](#).
- 54 N Singh, S Joshi, L Guo, MB Baker, Y Li, RK Castellano, MK Raizada, YPR Jarajapu. "ACE2/Ang-(1–7)/Mas axis stimulates vascular repair-relevant functions of CD34+ cells." *American Journal of Physiology Heart and Circulatory Physiology*, **2015**, *309*, H1697–H1707. [DOI](#)
- 55 L Albertazzi, N van der Veecken, MB Baker, ARA Palmans, EW Meijer. "Supramolecular copolymers with stimuli-responsive sequence control." *Chemical Communications*, **2015**, *51*, 16166–16168. [DOI](#)
- 56 LN Neumann, MB Baker, CMA Leenders, IK Voets, RPM Lafleur, ARA Palmans, EW Meijer. "Supramolecular polymer for organocatalysis in water." *Organic and Biomolecular Chemistry*, **2015**, *13*, 7711–7719. [DOI](#)

- 57 R Bou Zerdan, P Cohn, E Puodziukynaite, MB Baker, M Voisin, C Sarun, RK Castellano. "Synthesis, optical properties, and electronic structures of nucleobase-containing pi-conjugated oligomers." *Journal of Organic Chemistry*, **2015**, *80*, 1828–1840. [DOI](#)
- 58 MB Baker, L Albertazzi, IK Voets, CMA Leenders, ARA Palmans, GM Pavan, EW Meijer. "Consequences of chirality on the dynamics of a water soluble supramolecular polymer." *Nature Communications*, **2015**, *6*, 6234. [DOI](#)
- 59 CMA Leenders, T Mes, MB Baker, MME Koenigs, P Besenius, ARA Palmans, EW Meijer. "From supramolecular polymers to hydrogel materials." *Materials Horizons*, **2014**, *1*, 116–120. [DOI](#)
- 60 MB Baker, I Ghiviriga, RK Castellano. "Molecular multifunctionalization via electronically coupled lactones." *Chemical Science*, **2012**, *3*, 1095–1099. [DOI](#)
- 61 MB Baker, L Yuan, CJ Marth, Y Li, RK Castellano. "Rapid access to C₃- and C₅- symmetric AAT organogelators via ring opening of a common benzotrifuranone precursor." *Supramolecular Chemistry*, **2010**, *22*, 789–802. [DOI](#)
- 62 RA Fraga-Silva, BS Sorg, M Wankhede, C deDeugd, JY Jun, MB Baker, Y Li, RK Castellano, M Katovich, MK Raizada, AJ Ferreira. "ACE2 activation promotes antithrombotic activity." *Molecular Medicine*, **2010**, *16*, 210–215. [DOI](#)
- 63 Y Li, AJ Lampkins, MB Baker, B Sumpter, J Huang, KA Abboud, RK Castellano. "Benzotrifuranone: synthesis, structure, and access to polycyclic heteroaromatics." *Organic Letters*, **2009**, *11*, 4314–4317. [DOI](#)
- Book Chapter
- 1 Aldana, A. A.; Bauer, J.; Baker, M. B., Chapter 6 – Synthetic biomaterials. In *Tissue Engineering (Third Edition)*, De Boer, J.; Blitterswijk, C. A. V.; Uquillas, J. A.; Malik, N., Eds. Academic Press: 2023; pp 173-212. [DOI](#)
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PATENTS

- 1 Bioinks, PCT WO2020094776A1.
 - 2 Injectable tough and viscoelastic BTA hydrogel, EP21205815, Filed 01-11-2021
 - 3 Hydrogels for organoid culture, EP21205818, Filed 01-11-2021
 - 4 Shape Memory elastomers, EP 23191318.7, Filed 14-08-2023
 - 5 Synthetic copolymers with pendent aldehydes and hydrogels thereof, EP24164400.4, Filed 19-030-2024
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SELECTED INVITED PRESENTATIONS (15/70)

Keynote/Plenary

- "Shape memory elastomers for biomedical applications – with light!" European Society for Biomaterials (ESB), Davos, Switzerland, 2023.
- "Controlling supramolecular dynamics for advanced hydrogels." International Society for Biofabrication (ISBF) Congress, Montecatini Terme, Italy, 2022.
- "Dynamic hydrogels as biomimetic bioinks." TERMIS-EU Meeting, Krakow, Poland, 2022.
- "Macromolecular design for 3D hydrogel biomaterials." 8th EUChemS Chemistry Congress, Lisbon, Portugal, 2022.
- "Leveraging dynamic interactions for advanced biomaterials." 6th European Symposium on Biomaterials and Related Areas (BioMAT 2021), Zoom, 2021.
- "Natural vs synthetic matrices." Netherlands Biomaterials and Tissue Engineering (NBTE) Society Annual Meeting, Zoom, 2020.
- "Bioinspired materials for biofabrication: towards 3D printing of living tissues." 6th International Scientific Conference on Cultured Meat (ISCCM), Zoom, 2020.
- "Designing hydrogels for 3D printing: Static and dynamic." ESB Meeting, Dresden, Germany, 2019.

Invited

- "Macromolecular engineering of polymer networks to enable tissue engineering." Biofabrication Summer School, Erlangen, DE, 2023.
- "Tuning dynamics: From tissue engineering to advanced bioinks." ACS Spring National Meeting & Expo, San Diego, CA, USA, 2022. (PMSE 2021 Young Investigator award symposium).

“Controlling supramolecular assembly and dynamics for advanced tissue engineering hydrogels.” ACS Fall National Meeting & Expo, Atlanta, GA, USA, 2021.

“Lessons in designing dynamic synthetic extracellular matrices...” CHAINS (NL national chemistry conference), Veldhoeven, NL, 2019.

“Controlling properties in dynamic hydrogels” ACS Fall National Meeting & Expo, San Diego, CA, USA, 2019.

“Designing dynamic networks for tissue engineering.” TERMIS EU Meeting, Rhodes, Greece, 2019.

“From 3D bioprinting to dynamic hydrogel networks and back.” MRS Spring Meeting, Phoenix, AZ, USA, 2019.

TEACHING/MENTORING

Teaching

Maastricht University

- Design planning group Bachelor’s in Regenerative Medicine 2022–present
- Education coordinator for MERLN Institute (Faculty of Science and Engineering) 2016–present
- Block coordination team Regenerative Medicine Master’s track 2017–present
- Course coordinator
 - Organic Chemistry (course including lab) 2016–present
 - Case studies in Biomedical Sciences 2016–2020
 - Bespoke Science Project 2016–2020
- Lecturer
 - Organic Chemistry 2015–present
 - Case studies in Biomedical Sciences 2016–2019
 - Regenerative Medicine 2018–present
- PBL Tutor (Organic and General Chemistry) 2015–2020
- Academic Advisor for Maastricht Science Programme 2017–present

Eindhoven University of Technology

- OGO student led investigation Spring 2013/2015
- Scientific Debate instructor Fall 2013/Spring 2014

University of Florida

- General Chemistry under Prof. Willard Harrison (TA for discussion) Fall 2007
- General Chemistry Lab under Dr. Jim Horvath (TA) Spring 2008
- Organic Lab under Dr. Tammy Davidson (TA) Fall 2011

Advisor

MERLN, Maastricht University (11 PhD, 7 PD)

- *David Dimech* – PhD (expected) 2028
“Hydrogel dynamics to influence therapeutic cell delivery”
- *Valentino Atalla* – PhD (co-advisor) (expected) 2026
“Tough dynamic networks from metal-ligand interactions”
- *Arthur Helsen* – PhD (double degree/Hasselt) (expected) 2026
“Double network supramolecular hydrogels”
- *Mahsa Ebrahimi* – PhD (co-advisor/Hasselt) (expected) 2025
“Tough double network hydrogels for tissue engineering–thiol ene”
- *Mariana Arreguin-Campos* – PhD (co-advisor/Hasselt) (expected) 2025
“Tough double network hydrogels for tissue engineering–thiol-yne”
- *Huixing Cao* – PhD (co-advisor) (expected) 2024
“Bio-based dynamic covalent aspartic alternatives”
- *Ivo Beeren* – PhD (co-advisor) (submitted) 2023
“Biofunctionalization of polymers for osteochondral applications”
- *Antonio Feliciano* – PhD (expected) 2023
“Supramolecular hydrogels for corneal regeneration”

- *Francis Morgan* – PhD (submitted) 2023
“Bond. Dynamic Bond: Rational design of dynamic covalent soft matter and applications in tissue engineering”
- *Shazad Hafeez* – PhD *cum laude* 2023
“Chemically tuning dynamic networks and supramolecular assemblies to enable synthetic extracellular matrices for tissue engineering”
- *Tian-yu Yao* – PhD (co-advisor) 2020
“MSC co-cultures on ordered electrospun scaffolds”
- *Julia Fernandez-Perez* – Post-doc (co-advisor) 2022
“Bioengineering of a tri-layer blood vessel”
- *Agustina Aldana* – Post-doc 2024
“Dynamic networks for additive manufacturing”
- *Rebeca Rivero* – Post-doc 2021
“Hydrogels for ocular regeneration”
- *Floor Ruiter* – Post-doc (co-advisor) 2021
“Artificial matrices for kidney organoid maintenance”
- *Tobias Khunt* – Post-doc (co-advisor) 2020
“Mechanically active polymers for DLP printing”
- *Rong Wang* – Post-doc (co-advisor) 2018
“Novel polymers for DLP printing”
- *Huey Wen Ooi* – Post-doc 2018
“Host-guest hydrogels for bioprinting”
- Mentored 13 Master’s theses and 8 Bachelor projects, including a Menno Knetsch Thesis Awardee (top thesis in graduate school), a Fullbright Scholar, and a Pfizer Life Sciences Awardee (top thesis in Netherlands). 9 have continued on to a PhD program.

Eindhoven University of Technology (TU/e)

- Mentored 4 Master’s students for their thesis. 3 have continued on to a PhD program.

University of Florida

- Mentored 2 undergraduate students and 2 visiting international Master’s students in their research projects, including one successful Goldwater Scholar.

Chemistry Tutor

University Athletic Association, University of Florida

2010–2012

- Tutored student athletes for general and organic chemistry

FUNDING, AWARDS, & HONORS

Maastricht University

NWO Perspectief FAB4FUTURE (consortium, co-lead) 1.2M EUR (2.9M total)	2023
ERC Consolidator Grant (international grant/award) 2M EUR	2023
NWO Venture Challenge (national grant/startup bootcamp)	2023
Cellular Agriculture Nederland (national consortium) 4M EUR	2023
Maastricht/Hasselt collaborative research (local grant) 400k EUR	2022
NWO Materials Driven Regeneration (national consortium) 300k EUR	2022
NWO XS Grant (national grant) 50k EUR	2022
ACS PMSE Young Investigator (international award)	2021
NWO “Take-off” (national grant to found start-up) 40k EUR	2021
SWOL “OChem app” (local grant) 5k EUR	2019
NWO “Open Mind” (national grant) 50k EUR	2019
FWO “Young Investigator” (international grant) 44k EUR	2019

TKI "Advanced SPR" (national grant) 110k EUR	2019
RegMedXB "Cardio Moonshot" (international consortium) 200k EUR	2019
RegMedXB "Kidney Moonshot" (international consortium) 200k EUR	2017
NWO TA grant "DynAM" (national grant) 1.5M EUR (3.3M total)	2016
InSciTe grant "EyeSciTe" (regional grant) 800k EUR (6M total)	2015
Eindhoven University of Technology	
EuroTech Postdoc Workshop (EU funded)	2015
ACS P2F Training Workshop (ACS funded)	2015
University of Florida	
Crow Writing Award (departmental award)	2011
Eastman Fellow (external funding)	2011
Graduate Research Symposium (ACS funded)	2011
University of Florida Alumni Fellow (university scholarship)	2007–2011
W. M. Jones Award for Originality and Creativity (departmental award)	2010

SERVICE

Founding member of Maastricht Chemistry Chem@UM	2022–present
Chair of programme committee for 1 st Dutch Materials conference	2022–2023
World TERMIS track leader, host committee, and symposium organizer	2020/2021
CHAINS Symposium Organizer (National Chemistry Conference)	2021/2022
Chair of Platform Research Integrity (Faculty Advisory Platform)	2021–present
Platform MaterialenNL (National Advisory Platform)	2019–present
NextGenChem@NL Organization	2019
ACS POLY Symposium Organizer (national US meeting)	2018
MERLN Colloquium and Symposium Faculty Advisor	2015–present
NBTE Thesis Committee	2015
UF Graduate Student Council Representative	2010–2012
UF Department of Chemistry Recruitment Committee	2007–2012
Chemical Demonstrations for Youth	2007–2012

REVIEWING ACTIVITIES

Early Career Editorial Board Chemical Reviews	2023–present
Early Career Editorial Board Journal of Biomedical Materials Part A	2022–present
Manuscript reviewer (e.g. Nature Chemical Biology, Advanced Materials, Journal of the American Chemical Society, Biomacromolecules, Biomaterials Science)	
Grant Reviewer panel: French National Research Agency, Irish National Research Council, Flemish National Research Council, Humboldt Fellowships	
PhD Committees: 14 defenses including 5 external to Maastricht University	

SCIENTIFIC SOCIETIES

Royal Netherlands Chemical Society (KNCV)	2023–present
European Society of Biomaterials	2015–present
Tissue Engineering and Regenerative Medicine Society	2015–present
European Society of Biomaterials	2015–present
American Chemical Society	2008–present

LANGUAGES

English (native); Dutch (B2)