Scientific production

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h-index = 18

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NB: – Underlined names indicate the corresponding author(s) for each item.

1 Journal articles

→ *Section A*

A36. Crépin R., A. Aït Ouailal, P. Joanne, O. Agbulut, V. Mouly, O. Maciejak, M. Malo, J. Pelta, C. Campillo, S. Labdi, and **G. Lamour**. *Genotype-dependent morpho-mechanical profiling of patient-derived human myotubes on nanogrooved substrates.* **submitted**;

A35. S. Comunian, V. Petit, G. Velasco, V. Zakharova, C. Jebane, P. Lahure, V. Joliot, L. Del Maestro, M. Hennion, **G. Lamour**, J.-B. Manneville, E. Helfer, E. Boyarchuk, and S. Aït-Si-Ali. *Epigenetic control of nuclear mechanics and cellular migration via histone H3 lysine 9 methylation at Lamina-Associated Domains.* **submitted**;

A34. Cho Y., K. Tai, **G. Lamour**, Ty Christoff-Tempesta, Yu-J. Choi, R. Meacham, DT. Rota, S. Wu, X. Zuo, and JH. Ortony. *Harnessing rigid supramolecular aramid nanotubes as nanocatalyst support.* Adv. Mater.. **2025**; e10143-1–10; DOI: 10.1002/adma.202510143.

A33. Cho Y., CD. Fincher, **G. Lamour**, Ty Christoff-Tempesta, X. Zuo, Y.-M. Chiang, and JH. Ortony. *Reversible self-assembly of small molecules for recyclable solid-state battery electrolytes.* Nat. Chem. **2025**; DOI: 10.1038/s41557-025-01917-6.

A32. Huang L., R. Lopes Dos Santos, S. Labdi, **G. Lamour**, O. Maciejak, M. Malo, J. Fattaccioli, and C. Campillo. *A microfluidic platform for actin-based membrane remodeling reveals the stabilizing role of branched actin networks on lipid microdomains.* Small Sci.. **2025**; 2500210.1–13. DOI: 10.1002/smsc.202500210.

A31. Tran QD., M. Lenz, **G. Lamour**, L. Paty, M. Varela-Salgado, C. Campillo, H. Wioland, A. Jegou, G. Romet-Lemonne, and C. Leduc. *Continuous self-repair protects vimentin intermediate filaments from fragmentation.* Proc. Natl. Acad. Sci. U.S.A. **2025**; 122:e2417660122. DOI: 10.1073/pnas.2417660122.

A30. Bulteau R., L. Barbier, **G. Lamour**, Y. Lemseffer, M.-H. Verlhac, N. Tessandier, E. Labrune, M. Lenz, M.-E. Terret, C. Campillo. *Atomic Force Microscopy reveals differences in mechanical properties linked to cortical structure in mouse and human oocytes.* Small. **2025**; 2500221.1–13. DOI: 10.1002/smll.202500221.

A29. Allard A., M. Liboz, R. Crépin, S. Labdi, O. Maciejak, M. Malo, C. Campillo, and **G. Lamour**. *CellMAP: an open-source software tool to batch-process cell topography and stiffness maps collected with an atomic force microscope.* BMC Bioinformatics. **2025**; 26;38.1–16. DOI: 10.1186/s12859-025-06060-0.

A28. Herardot E., M. Liboz, **G. Lamour**, M. Malo, A. Plancheron, W. Habeler, C. Geiger, E. Frank, C. Campillo, C. Monville, and K. Ben M'Barek. *Biomechanical characterization of retinal pigment epitheliums derived from hPSCs using atomic force microscopy.* Stem Cell Rev. **2024**; 20;1340–52. DOI: 10.1007/s12015-024-10717-3.

A27. **Lamour G.**, M. Malo, R. Crépin, J. Pelta, S. Labdi, and C. Campillo. *Dynamically mapping the topography and stiffness of the leading edge of migrating cells using AFM in fast-QI mode.* ACS Biomater. Sci. Eng. **2024**; 10:1364–78. DOI: 10.1021/acsbiomaterials.3c01254.

A26. Seffouh I., M. Bilong, C. Przybylski, N. El Omrani, S. Poyer, **G Lamour**, M-J Clément, F. Gonnet, RR. Vivès, and R. Daniel. *Structure and functional impact of glycosaminoglycan modification of HSulf-2 endosulfatase revealed by atomic force microscopy and mass spectrometry.* Sci. Rep. **2023**; 13:22263-1–14. DOI: 10.1038/s41598-023-49147-5.

A25. Liboz M., A. Allard, M. Malo, **G. Lamour**, G. Letort, B. Thiébot, S. Labdi, J. Pelta, and C. Campillo. *Using adhesive micropatterns and AFM to assess cancer cell morphology and mechanics.* ACS Appl. Mater. Interfaces. **2023**; 15:43403–13. DOI: 10.1021/acsami.3c07785.

A24. Cho Y., T. Christoff-Tempesta, DY. Kim, **G. Lamour**, and JH. Ortony. *Domain-selective thermal decomposition within supramolecular nanoribbons.* Nat. Commun. **2021**; 12:7340-1–7. DOI: 10.1038/s41467-021-27536-6.

A23. Kim, DY., T. Christoff-Tempesta, **G. Lamour**, X. Zuo, KH. Ryu, JH. Ortony. *Morphological transitions of a photoswitchable aramid amphiphile nanostructure.* Nano Letters. **2021**; 21:2912–8. DOI: 10.1021/acs.nanolett.0c05048.

A22. Christoff-Tempesta T., Y. Cho, DY. Kim, M. Geri, **G. Lamour**, AJ. Lew, X. Zuo, WR. Lindemann, JH. Ortony. *Self-assembly of aramid amphiphiles into ultra-stable nanoribbons and aligned nanoribbon threads.* Nat. Nanotechnol. **2021**; 16:447–54. DOI: 10.1038/s41565-020-00840-w.

A21. **Lamour G.**, A. Allard, J. Pelta, S. Labdi, M. Lenz, and C. Campillo. *Mapping and modeling the nanomechanics of bare and protein coated lipid nanotubes.* Phys. Rev. X. **2020**; 10:011031-1–17. DOI: 10.1103/PhysRevX.10.011031.

A20. Nassar R., E. Wong, J. Gsponer, and **G. Lamour**. *Inverse correlation between amyloid stiffness and size.* J. Am. Chem. Soc. **2019**; 141:58–61. DOI: 10.1021/jacs. 8b10142.

A19. Nassar R., E. Wong, JM. Bui, CK. Yip, HB. Li, J. Gsponer, and **G. Lamour**. *Mechanical anisotropy in GNNQQNY amyloid crystals.* J. Phys. Chem. Lett. **2018**; 9: 4901–9. DOI: 10.1021/acs.jpclett.8b02027.

A18. Silverman J., E. Gibbs, X. Peng, K. Martens, C. Balducci, J. Wang, M. Yousefi, C.M. Cowan, **G. Lamour**, S. Louadi, Y. Ban, J. Robert, S. Stukas, G. Forloni, G-YR. Hsiung, SS. Plotkin, CL. Wellington, and NR. Cashman. *A Rational Structured Epitope Defines a Distinct Subclass of Toxic Amyloid-beta Oligomers.* ACS Chem. Neurosci. **2018**; 9:1591–606. DOI: 10.1021/acschemneuro.7b00469.

A17. **Lamour G.**, R. Nassar, PHW. Chan, G. Bozkurt, J. Li, JM. Bui, C. Yip, T. Mayor, HB. Li, H. Wu, and J. Gsponer. *Mapping the broad structural and mechanical properties of amyloid fibrils.* Biophys. J. **2017**; 112:584–94. DOI: 10.1016/ j.bpj.2016.12.036.

A16. J. Feng, **G. Lamour**, R. Xue, MN. Mirvakliki, SG. Hatzikiriakos, J. Xu, HB. Li, S. Wang, and X. Lu. *Chemical, physical and morphological properties of bacterial biofilms affect survival of encased Campylobacter jejuni F38011 under aerobic stress.* Int. J. Food. Microbiol. **2016**; 238:172–82. DOI: 10.1016/j.ijfoodmi cro.2016.09.008.

A15. Panwar P., **G. Lamour**, NCW. Mackenzie, H. Yang, F. Ko, HB. Li, D. Brömme. *Changes in structural-mechanical properties and degradability of collagen during ageing-associated modifications.* J. Biol. Chem. **2015**; 290:23291–306. DOI: 10. 1074/jbc.M115.644310.

A14. **Lamour G.**, S. Souès, A. Hamraoui. *Substrate-induced PC12 cell differentiation without filopodial, lamellipodial activity or NGF stimulation.* Macromol. Biosci. **2015**; 15:364–71. DOI: 10.1002/mabi.201400323.

A13. **Lamour G.**, JB. Kirkegaard, HB. Li, TPJ. Knowles, and J. Gsponer. *Easyworm: an open-source software tool to determine the mechanical properties of worm-like chains.* Source Code Biol Med. **2014**; 9:16.1–6. DOI: 10.1186/1751-0473-9-16.

A12. Kovacic S., L. Samii, **G. Lamour**, HB. Li, H. Linke, EHC. Bromley, DN. Woolfson, PMG. Curmi, and NR. Forde. *Construction and characterization of kilobasepair densely labeled peptide-DNA.* Biomacromolecules. **2014**; 15:4065–72. DOI: 10.1021/bm501109p.

A11. He C., **G. Lamour**, A. Xiao, J. Gsponer and HB. Li. *Mechanically Tightening a Protein Slipknot into a Trefoil Knot.* J Am Chem Soc. **2014**; 136:11946–55. DOI: 10.1021/ja503997h.

A10. **Lamour G.**, C. Yip, HB. Li, and J. Gsponer. *High intrinsic mechanical flexibility of mouse prion nanofibrils revealed by measurements of axial and radial Young's moduli.* ACS Nano. **2014**; 8:3851–61. DOI: 10.1021/nn5007013.

A9. Ostapchenko VG., FH. Beraldo, AH. Mohammad, YF. Xie, P. Hirata, AC. Magalhaes, **G. Lamour**, HB. Li, A. Maciejewski, JC. Belrose, M. Fahnestock, ST. Ferreira, N. Cashman, GN. Hajj, MF. Jackson, WY Choy, JF. MacDonald, VR. Martins, VF. Prado and MAM Prado. *The prion protein ligand, stress-inducible phosphoprotein I (STI1), regulates amyloid-β; oligomer toxicity.* J. Neurosci. **2013**; 33:16552–64. DOI: 10.1523/JNEUROSCI.3214-13.2013.

A8. Cumberworth A. , **G. Lamour**, M. Babu, and J. Gsponer. *Promiscuity as a functional trait: Intrinsically disordered regions as central players of interactomes.* Biochem. J. **2013**; 454:361–9. DOI: 10.1042/BJ20130545.

A7. Panwar P., X. Du, V. Sharma, **G. Lamour**, M. Castro, HB. Li, and D. Brömme. *Effects of cysteine proteases on the structural and mechanical properties of collagen fibers.* J. Biol. Chem. **2013**; 288:5940–60. DOI: 10.1074/jbc.M112.419689.

A6. Li YD., **Lamour G.**, J. Gsponer, P. Zheng and HB. Li. *The molecular mechanism underlying mechanical anisotropy of the protein GB1.* Biophys. J. **2012**; 103:2361–8. DOI: 10.1016/j.bpj.2012.10.035.

A5. **Lamour G.**, S. Souès, and A. Hamraoui. *Interplay between long- and short-range interactions drives neuritogenesis on stiff surfaces.* J. Biomed. Mater. Res. A. **2011**; 99A: 598–606. DOI: 10.1002/jbm.a.33213.

A4. Khorvash M., **G. Lamour**, and J. Gsponer. *Long-time scale fluctuations of human prion protein determined by restrained MD simulations.* Biochemistry. **2011**; 50: 10191–4. DOI: 10.1021/bi2012756.

A3. **Lamour G.**, A. Eftekhari-Bafrooei, E. Borguet, S. Souès, and A. Hamraoui. *Neuronal adhesion and differentiation driven by nanoscale surface free-energy gradients.* Biomaterials. **2010**; 31:3762–71. DOI: 10.1016/j.biomaterials.2010.01.099.

A2. **Lamour G.**, A. Hamraoui, A. Buvailo, Y. Xing, S. Keuleyan, V. Prakash, A. Eftekhari-Bafrooei, and E. Borguet. *Contact angle measurements using a simplified experimental set-up.* J. Chem. Educ. 2010; 87:1403–7. DOI: 10.1021/ed100468u.

A1. **Lamour G.**, N. Journiac, S. Souès, S. Bonneau, P. Nassoy, and A. Hamraoui. *Influence of surface energy distribution on neuritogenesis.* Colloids Surf. B. 2009; 72:208–18. DOI: 10.1016/j.colsurfb.2009.04.006

2 Book Chapter

→ *Section B*

B1. Bulteau R., L. Barbier, **G. Lamour**, T. Piolot, E. Labrune, C. Campillo, M-E. Terret. *Mechanical characterization of murine oocytes by Atomic Force Microscopy.* In: Castro, A., Lacroix, B. (eds) Cell Cycle Control. Methods in Molecular Biology, vol 2740. Humana, New York, NY. DOI: 10.1007/978-1-0716-3557-5_7.

3 Refereed conference proceedings

→ *Section C*

C2. **Lamour G.**, S. Souès, E. Collard, S. Collin, N. Bardou, and A. Hamraoui. *Tuning surface energy at the nanometer scale: a new step towards controlling neuronal differentiation?* J. Nanosci. Lett. 2013; 3: 7.1–7.4.

C1. **Lamour G.**, S. Souès, and A. Hamraoui. *Neuritogenesis on antagonist surfaces.* Global J. Phys. Chem. 2011; 2: 140–4.

4 Software

→ *Section S*

S2. Allard A., **G. Lamour**, *et al.* 2014. *CellMAP*. LAMBE – Université d'Evry Paris-Saclay, Evry-Courcouronnes. Available: https://sourceforge.net/projects/cellmap-afm/files/ [Accessed May 28, 2025].

S1. **Lamour G.**. 2014. *Easyworm*. Gsponer lab – Michael Smith Laboratories, University of British Columbia, Vancouver. Available: https://gsponerlab.msl. ubc.ca/software/easyworm [Accessed June 13, 2024].

5 Conference Talks

→ *Section T*

T14. "Nanomechanical properties of living cells."
AFM BioMed Conference, Barcelona, **Spain**. May 2025.

T13. "Probing cell nanomechanics."
Forum des microscopies à sondes locales, Spa, **Belgium**. April 2025.

T12. "Probing cell nanomechanics using the fast-QI mode of the AFM."
Forum des microscopies à sondes locales, Lyon, **France**. April 2024.

T11. "Using the fast-QI mode to dynamically map the nanoscale topography and stiffness of lamellipodia and lamella."
9TH multifrequency AFM conference, Madrid, **Spain**. June 2023.

T10. "Mapping the topography and stiffness of lipid nanotubes."
Bruker workshop–AFM users days, Nancy, **France**. Nov. 2022.

T9. "Measuring the nanoscale mechanical properties of membrane nanotubes using AFM."
Forum des microscopies à sondes locales, Saint-Valéry, **France**. Feb. 2022.

T8. "The broad nanomechanics of amyloids."
The Protein Aggregation Conference (FASEB),**USA** (Online). June 2021.

T7. "Nanomechanics of lipid nanotubes."
8TH multifrequency AFM conference, Madrid, **Spain** (Online). Oct. 2020.

T6. "Studying membrane tubes by AFM force mapping."
French Microscopy Society (Sfμ), Poitiers, **France**. Jul. 2019.

T5. "Nanomechanical properties of amyloid fibrils."
GDR 3070, Physics from the Cell to the Tissue, Arcachon, **France**. Nov. 2016.

T4. "Nanomechanics of amyloid-like polymers made of self-assembled prion proteins."
Biophysical Society Meeting, Polymers and Self-Assembly: From Biology to Nanomaterials, Rio de Janeiro, **Brazil**. Oct. 2015.

T3. "Nanomechanics of mouse prion amyloids."
Molecular Origins of Protein Misfolding and Neurodegenerative Diseases, Vancouver (BC), **Canada**. July 2014.

T2. "Imaging prion fibrils by AFM to determine their bending rigidities and moduli."
Frontiers in Biophysics 2013, UBC, Vancouver (BC), **Canada**. Mar. 2013.

T1. "Impact of surface energy gradients on neuronal adhesion and differentiation."
Gordon-Kenan Research Seminar – Understanding and Controlling Adhesion through Interdisciplinary Research, Lewiston (ME), **USA**. July 2011.

6 Conference Posters

(Presenter underlined)
→ *Section P*

P20. "Characterizing the biomechanical alterations of human muscle cells with desmin mutations using atomic force microscopy". R. Crépin, P. Joanne, V. Mouly, S. Labdi, O. Agbulut, and **G. Lamour**. European Meeting on Intermediate Filaments, Lyon, **France**, September 2025.

P19. "Probing cell nanomechanics with the AFM." **G. Lamour**, C. Campillo, S. Labdi, O. Maciejak, M. Malo, J. Pelta. Gordon Conference on intermediate filaments, Barcelona, **Spain**, June 2024.

P18. "Characterizing the biomechanical alterations of human myotubes with desmin mutations using atomic force microscopy." R. Crépin, P. Joanne, V. Mouly, M. Malo, C. Campillo, S. Labdi, O. Agbulut, **G. Lamour**. European Meeting on Intermediate Filaments 2023, Noordwijkerhout, **Netherlands**, June 2023.

P17. "Mechanical characterization of oocytes using AFM to predict their quality." R. Bulteau, **G. Lamour**,T. Piolot, L. Barbier, M. Lenz, E. Labrune, C. Campillo, M-E. Terret. Physics and Biological Systems 2022, Université Paris-Saclay, **France**, June 2022.

P16. "Mechanics and morphology of phase-separated membranenanotubes probed by AFM and STED." R. Lopes dos Santos, **G. Lamour**, M. Malo, O. Maciejak, J. Pelta, S. Labdi, C. Campillo. 4TH Jacques Monod Conference on "Molecular basis for membrane remodelling and organization", Roscoff, **France**, May 2022.

P15. "Mechanical characterization with AFM of murine oocytes to predict their fitness." R. Bulteau, L. Barbier, M. Lenz, **G. Lamour**, T. Piolot, C. Campillo, M-E. Terret. MiFoBio, Presqu'île de Giens, **France**, Nov. 2021.

P14. "Atomic Force Microscopy-probing of phase-separated membrane nanotubes." R. Lopes dos Santos, **G. Lamour**, M. Malo, O. Maciejak, J. Pelta, S. Labdi, C. Campillo. Physics and Biological Systems 2021, Online, **France**, June 2021.

P13. "Nanomechanical properties of membrane nanotubes." G. Lamour, A. Allard, S. Labdi, C. Campillo. Physics and Biological Systems 2018, CNRS Gif-sur-Yvette, **France**, October 2018.

P12. "Nanomechanics of amyloids." G. Lamour, R. Nassar, PHW. Chan, G. Bozkurt, J. Li, JM. Bui, C. Yip, T. Mayor, HB. Li, H. Wu, and J. Gsponer, Physics and Biological Systems 2016, Ecole Polytechnique, Palaiseau, **France**, October 2016.

P11. "Low intrinsic stiffness of prion amyloid fibers uncovered by AFM imaging." G. Lamour, CK. Yip, HB. Li, J. Gsponer, Scanning Probe Microscopy on Soft Polymeric Materials, Toronto, ON, **Canada**, September 2014.

P10. "Understanding prion aggregation in amyloids by analyzing their mechanical properties using AFM." G. Lamour, HB. Li, J. Gsponer, Biophysical Society 57th annual meeting, Philadelphia, PA, **USA**, February 2013.

P9. "Linking prion stability with prion toxicity and infectivity." G. Lamour, M. Khorvash, HB. Li, N. Cashman, B. Suriyamongkol, D. Wishart, J. Gsponer, Prion 2012, VU University, Amsterdam, **Netherlands**, May 2012.

P8. "Surface energy and its spatial variation: A new criterion to study nanoscale surface effects on cell adhesion and differentiation." G. Lamour, A. Eftekhari-Bafrooei, E. Borguet, S. Souès, and A. Hamraoui, Gordon Research Conference: Science of Adhesion, Bates College, Lewiston (ME), **USA**, July 2011.

P7. "Unveiling the core structure of prion amyloid fibers using computation and AFM." G. Lamour, M. Khorvash, HB. Li, J. Gsponer, Prion New World, Montreal, QC, **Canada**, May 2011.

P6. "Differentiation of PC12 neuronal cells on chemically modified surfaces and in a NGF-free medium." **G. Lamour**, N. Journiac, S. Souès, S. Bonneau, P. Nassoy, and A. Hamraoui, 23rd Conference of the Colloid and Interface Society, Antalya, **Turkey**, September 2009

P5. "Influence of surface chemistry and nanoscale morphology on neuronal adhesion and differentiation." **G. Lamour**, A. Eftekhari-Bafrooei, E. Borguet, S. Souès, and Ahmed Hamraoui, Philadelphia Section ACS 10th Annual Graduate Student and 5th Annual Undergraduate Poster Sessions, Temple University, Philadelphia, PA, **USA**, January 2010

P4. "Paths of the neuritogenesis on heterogeneous surfaces." **G. Lamour**, A. Eftekhari-Bafrooei, E. Borguet, S. Souès, and A. Hamraoui, 5th International Conference on Surfaces, Coatings and Nanostructured Materials (nanomat-5), Reims, **France**, October 2010

P3. "Neuritogenesis induced by nanoscale surface-energy gradients." G. Lamour, N. Journiac, S. Souès, S. Bonneau, P. Nassoy, and A. Hamraoui, Physics of Cells: From the Edge to the Heart (embo), Primošten, **Croatia**, September 2009.

P2. "Influence of substratum physical and chemical cues on neuronal differentiation and on the propagation of the growing neurites." G. Lamour, S. Souès, N. Journiac, and A. Hamraoui, Forum of European Neurosciences Societies, Geneva, **Switzerland**, July 2008.

P1. "Differentiation of PC12 neuronal cells on chemically modified surfaces in nerve-growth-factor free medium." G. Lamour, N. Journiac, O. Friaa, and A. Hamraoui, European Biophysics Congress London, Imperial College, London, **UK**, July 2007.

7 Invited Talks

(Seminars)
→ *Section I*

I14. University of California San Diego, Department of Chemistry, San Diego, **USA**. 2024
Invited by: Pr. Julia Ortony.

I13. Université Paris Cité, Epigenetics and Cell Fate Centre, Paris, **France**. 2023
Invited by: Dr. Slimane Aït-Si-Ali.

I12. AMOLF, Biochemical Networks group, Amsterdam, **Netherlands**. 2022
Invited by: Dr. Alexander Cumberworth.

I11. Sorbonne Université, Institut de Biologie Paris-Seine, Paris, **France**. 2020
Invited by: Pr. Onnik Agbulut.

I10. Sorbonne Université, Chimie de la Matière Condensée de Paris, **France**. 2016
Invited by: Pr. Ahmed Hamaraoui.

I9. Université d'Évry, LAMBE, Évry-Courcouronnes, **France**. 2016
Invited by: Pr. Sid Labdi.

I8. Université de Strasbourg, Faculté de Chimie, Strasbourg, **France**. 2016
Invited by: Pr. Petra Hellwig.

I7. Cambridge University, Dept. of Physiology, Dev. and Neurosci., **UK**. 2015
Invited by: Pr. Kristian Franze.

I6. Simon Fraser University, Biophysics Group, Burnaby (BC), **Canada**. 2015
Invited by: Pr. Nancy Forde.

I5. Illumina Inc., San Diego (CA), **USA**. 2015
Invited by: Dr. Kevan Samiee.

I4. DuPont Central R&D, Materials Science, Wilmington (DE), **USA**. 2015
Invited by: Dr. Stephen Burkhardt.

I3. McGill University, Dept. of Bioengineering, Montreal (QC), **Canada**. 2014
Invited by: Pr. Adam Hendricks.

I2. Institute for Bioengineering of Catalonia, Barcelona, **Spain**. 2010
Invited by: Pr. Xavier Trepat.

I1. Universidad de Los Andes, Dept. of Physics, Bogota, **Colombia**. 2010
Invited by: Pr. Chad Leidy.