



International Federation for Adipose Therapeutics and Science

Laboratory Listing Form

Primary Investigator Name (include degrees): Julie FRADETTE, PhD

Laboratory, Center or Group Name: Centre de recherche en organogénèse expérimentale de l'Université Laval / LOEX

Division of Regenerative Medicine, CHU de Québec Research Centre-Université Laval

Type of Organization:

- Academia Industry
 Clinic/Hospital Small Start-up

If academic organization, please provide the name of University and Department:

Full Professor, Université Laval, Dpt of Surgery

Type of Work:

- Basic Clinical Translational Pre-Clinical

Primary focus, research or clinical activity (250 words):

My research activities focus on adipose-derived stem/stromal cells (ASCs) and their use in regenerative medicine. They encompass tissue engineering of skin and various micro-vascularized connective tissues including human adipose itself and bone-like tissues using natural cell-based scaffold-free reconstruction strategies.

If Research, what animal models are established by your group:

1. Mice, full-thickness excisional skin wounds (normal, diabetic, radiation wounds)
2. Mice, Magnetic resonance imaging of grafted adipose tissue substitutes
3. Rats, alveolar bone defects

If Research, what techniques are established by your group (list 3-5):

1. Cell culture
2. Confocal microscopy
3. Micro-vascularization
4. Mechanical assays

Key words that best describe the Research or Clinical work conducted (up to ten):

- | | | |
|-----------------------|-------------------------|---------------------------|
| 1. Tissue engineering | 4. Extracellular matrix | 7. Bone-like tissues |
| 2. Wound healing | 5. Adipose tissue | 8. Mesenchymal stem cells |
| 3. Vascularization | 6. Skin | 9. Imaging |

Website:

<http://crchudequebec.ca/recherche/chercheurs/julie-fracdette/>

<http://www.loex.qc.ca>

Link(s) to your publications:

[Biomimetic Tissue-Engineered Bone Substitutes for Maxillofacial and Craniofacial Repair: The Potential of Cell Sheet Technologies.](#)

Kawecki F, Clafshenkel WP, Fortin M, Auger FA, **Fradette J.**

Adv Healthc Mater. 2017 Dec 27. doi: 10.1002/adhm.201700919. [Epub ahead of print] Review.

PMID: 29280323

[Workshop to address gaps in regulation of minimally manipulated autologous cell therapies for homologous use in Canada.](#)

Chisholm J, von Tigerstrom B, Bedford P, **Fradette J**, Viswanathan S.

Cytotherapy. 2017 Dec;19(12):1400-1411. doi: 10.1016/j.jcyt.2017.08.015. Epub 2017 Sep 28. Review.

PMID: 28964743

[Role of the TGF- \$\beta\$ pathway in dedifferentiation of human mature adipocytes.](#)

Côté JA, Lessard J, Pelletier M, Marceau S, Lescelleur O, **Fradette J**, Tchernof A.

FEBS Open Bio. 2017 Jul 10;7(8):1092-1101. doi: 10.1002/2211-5463.12250. eCollection 2017 Aug.

PMID: 28781950

[A Cell-Based Self-Assembly Approach for the Production of Human Osseous Tissues from Adipose-Derived Stromal/Stem Cells.](#)

Galbraith T, Clafshenkel WP, Kawecki F, Blanckaert C, Labbé B, Fortin M, Auger FA, **Fradette J.**

Adv Healthc Mater. 2017 Feb;6(4). doi: 10.1002/adhm.201600889. Epub 2016 Dec 22.

PMID: 28004524

[Deficiency of Interleukin-15 Confers Resistance to Obesity by Diminishing Inflammation and Enhancing the Thermogenic Function of Adipose Tissues.](#)

Lacruz G, Rakotoarivelo V, Labbé SM, Vernier M, Noll C, Mayhue M, Stankova J, Schwertani A, Grenier G, Carpentier A, Richard D, Ferbeyre G, **Fradette J**, Rola-Pleszczynski M, Menendez A, Langlois MF, Ilangumaran S, Ramanathan S.

PLoS One. 2016 Sep 29;11(9):e0162995. doi: 10.1371/journal.pone.0162995. eCollection 2016. Erratum in: [PLoS One. 2016 Nov 8;11\(11\):e0166537.](#)

PMID: 27684068

[Characterization of In Vitro Engineered Human Adipose Tissues: Relevant Adipokine Secretion and Impact of TNF- \$\alpha\$.](#)

Aubin K, Safoine M, Proulx M, Audet-Casgrain MA, Côté JF, Têtu FA, Roy A, **Fradette J.**

PLoS One. 2015 Sep 14;10(9):e0137612. doi: 10.1371/journal.pone.0137612. eCollection 2015.

PMID: 26367137

[Oxidative activity of 17 \$\beta\$ -hydroxysteroid dehydrogenase on testosterone in male abdominal adipose tissues and cellular localization of 17 \$\beta\$ -HSD type 2.](#)

Fouad Mansour M, Pelletier M, Boulet MM, Mayrand D, Brochu G, Lebel S, Poirier D, **Fradette J**, Cianflone K, Luu-The V, Tchernof A.

Mol Cell Endocrinol. 2015 Oct 15;414:168-76. doi: 10.1016/j.mce.2015.06.016. Epub 2015 Jun 26.

PMID: 26123590

[Human adipose-derived stromal cells for the production of completely autologous self-assembled tissue-engineered vascular substitutes.](#)

Vallières K, Laterreur V, Tondreau MY, Ruel J, Germain L, **Fradette J**, Auger FA.
Acta Biomater. 2015 Sep;24:209-19. doi: 10.1016/j.actbio.2015.06.011. Epub 2015 Jun 15.
PMID: 26086693

[Expression of \$\alpha\$ -Smooth Muscle Actin Determines the Fate of Mesenchymal Stromal Cells.](#)

Talele NP, **Fradette J**, Davies JE, Kapus A, Hinz B.
Stem Cell Reports. 2015 Jun 9;4(6):1016-30. doi: 10.1016/j.stemcr.2015.05.004. Epub 2015 May 28.
PMID: 26028530

[Enhancing repair of full-thickness excisional wounds in a murine model: Impact of tissue-engineered biological dressings featuring human differentiated adipocytes.](#)

Morissette Martin P, Maux A, Laterreur V, Mayrand D, L Gagné V, Moulin VJ, **Fradette J**.
Acta Biomater. 2015 Aug;22:39-49. doi: 10.1016/j.actbio.2015.04.036. Epub 2015 Apr 29.
PMID: 25934321

[Melatonin pretreatment of human adipose tissue-derived mesenchymal stromal cells enhances their prosurvival and protective effects on human kidney cells.](#)

Zhao J, Young YK, **Fradette J**, Eliopoulos N.
Am J Physiol Renal Physiol. 2015 Jun 15;308(12):F1474-83. doi: 10.1152/ajprenal.00512.2014. Epub 2015 Apr 22.
PMID: 25904702

[Magnetic Resonance Imaging of Human Tissue-Engineered Adipose Substitutes.](#)

Proulx M, Aubin K, Lagueux J, Audet P, Auger M, Fortin MA, **Fradette J**.
Tissue Eng Part C Methods. 2015 Jul;21(7):693-704. doi: 10.1089/ten.TEC.2014.0409. Epub 2015 Feb 25.
PMID: 25549069

[Creating capillary networks within human engineered tissues: impact of adipocytes and their secretory products.](#)

Aubin K, Vincent C, Proulx M, Mayrand D, **Fradette J**.
Acta Biomater. 2015 Jan;11:333-45. doi: 10.1016/j.actbio.2014.09.044. Epub 2014 Sep 30.
PMID: 25278444

[Using human umbilical cord cells for tissue engineering: a comparison with skin cells.](#)

Hayward CJ, **Fradette J**, Morissette Martin P, Guignard R, Germain L, Auger FA.
Differentiation. 2014 Mar-Apr;87(3-4):172-81. doi: 10.1016/j.diff.2014.05.001. Epub 2014 Jun 11.
PMID: 24930038

[Adipose-derived stromal cells for the reconstruction of a human vesical equivalent.](#)

Rousseau A, **Fradette J**, Bernard G, Gauvin R, Laterreur V, Bolduc S.
J Tissue Eng Regen Med. 2015 Nov;9(11):E135-43. doi: 10.1002/term.1717. Epub 2013 Apr 11.
PMID: 23576338

[Human epithelial stem cells persist within tissue-engineered skin produced by the self-assembly approach.](#)

Lavoie A, Fugère C, Beauparlant A, Goyer B, Larouche D, Paquet C, Desgagné M, Sauvé S, Robitaille H, Dunwald M, Kim DH, Pouliot R, **Fradette J**, Germain L.
Tissue Eng Part A. 2013 Apr;19(7-8):1023-38. doi: 10.1089/ten.TEA.2012.0117. Epub 2013 Feb 15.
PMID: 23173810

[Harvesting the potential of the human umbilical cord: isolation and characterisation of four cell types for tissue engineering applications.](#)

Hayward CJ, **Fradette J**, Galbraith T, Rémy M, Guignard R, Gauvin R, Germain L, Auger FA. Cells Tissues Organs. 2013;197(1):37-54. doi: 10.1159/000341254. Epub 2012 Sep 5. PMID: 22965075

[Dynamic culture induces a cell type-dependent response impacting on the thickness of engineered connective tissues.](#)

Fortier GM, Gauvin R, Proulx M, Vallée M, **Fradette J**. J Tissue Eng Regen Med. 2013 Apr;7(4):292-301. doi: 10.1002/term.522. Epub 2011 Dec 12. PMID: 22162315

[Stem cells of the skin and cornea: their clinical applications in regenerative medicine.](#)

Proulx S, **Fradette J**, Gauvin R, Larouche D, Germain L. Curr Opin Organ Transplant. 2011 Feb;16(1):83-9. doi: 10.1097/MOT.0b013e32834254f1. Review. PMID: 21150608

[Considerations in the choice of a skin donor site for harvesting keratinocytes containing a high proportion of stem cells for culture in vitro.](#)

Lavoie A, Fugère C, **Fradette J**, Larouche D, Paquet C, Beauparlant A, Gauvin R, Têtu FA, Roy A, Bouchard M, Genest H, Auger FA, Germain L. Burns. 2011 May;37(3):440-7. doi: 10.1016/j.burns.2010.09.004. Epub 2010 Dec 3. PMID: 21126825

[Cell sheet technology for tissue engineering: the self-assembly approach using adipose-derived stromal cells.](#)

Labbé B, Marceau-Fortier G, **Fradette J**. Methods Mol Biol. 2011;702:429-41. doi: 10.1007/978-1-61737-960-4_31. PMID: 21082420

[Tissue engineering of skin and cornea: Development of new models for in vitro studies.](#)

Paquet C, Larouche D, Bisson F, Proulx S, Simard-Bisson C, Gaudreault M, Robitaille H, Carrier P, Martel I, Duranceau L, Auger FA, **Fradette J**, Guérin SL, Germain L. Ann N Y Acad Sci. 2010 Jun;1197:166-77. doi: 10.1111/j.1749-6632.2009.05373.x. Review. PMID: 20536846

[Targeted gene addition to human mesenchymal stromal cells as a cell-based plasma-soluble protein delivery platform.](#)

Benabdallah BF, Allard E, Yao S, Friedman G, Gregory PD, Eliopoulos N, **Fradette J**, Spees JL, Haddad E, Holmes MC, Beauséjour CM. Cytotherapy. 2010 May;12(3):394-9. doi: 10.3109/14653240903583803. PMID: 20331411

[Normal human epithelial cells regulate the size and morphology of tissue-engineered capillaries.](#)

Rochon MH, **Fradette J**, Fortin V, Tomasetig F, Roberge CJ, Baker K, Berthod F, Auger FA, Germain L. Tissue Eng Part A. 2010 May;16(5):1457-68. doi: 10.1089/ten.TEA.2009.0090. PMID: 19938961

[The mixed-lineage kinase DLK is a key regulator of 3T3-L1 adipocyte differentiation.](#)

Couture JP, Daviau A, **Fradette J**, Blouin R. PLoS One. 2009;4(3):e4743. doi: 10.1371/journal.pone.0004743. Epub 2009 Mar 9. PMID: 19270737

[Evolution of three dimensional skin equivalent models reconstructed in vitro by tissue engineering.](#)

Auxenfans C, **Fradette J**, Lequeux C, Germain L, Kinikoglu B, Bechetoille N, Braye F, Auger FA, Damour O. Eur J Dermatol. 2009 Mar-Apr;19(2):107-13. doi: 10.1684/ejd.2008.0573. Epub 2008 Dec 23. Review. PMID: 19106039

[Regeneration of skin and cornea by tissue engineering.](#)

Larouche D, Paquet C, **Fradette J**, Carrier P, Auger FA, Germain L. Methods Mol Biol. 2009;482:233-56. doi: 10.1007/978-1-59745-060-7_15. PMID: 19089360

[IFATS collection: Using human adipose-derived stem/stromal cells for the production of new skin substitutes.](#)

Trottier V, Marceau-Fortier G, Germain L, Vincent C, **Fradette J**. Stem Cells. 2008 Oct;26(10):2713-23. doi: 10.1634/stemcells.2008-0031. Epub 2008 Jul 10. PMID: 18617689

[\[Porous matrix and primary-cell culture: a shared concept for skin and cornea tissue engineering\].](#)

Auxenfans C, Builles N, Andre V, Lequeux C, Fievet A, Rose S, Braye FM, **Fradette J**, Janin-Manificat H, Nataf S, Burillon C, Damour O. Pathol Biol (Paris). 2009 Jun;57(4):290-8. doi: 10.1016/j.patbio.2008.04.014. Epub 2008 Jul 3. Review. French. PMID: 18602223

[Adipose-tissue engineering: taking advantage of the properties of human adipose-derived stem/stromal cells.](#)

Vallée M, Côté JF, **Fradette J**. Pathol Biol (Paris). 2009 Jun;57(4):309-17. doi: 10.1016/j.patbio.2008.04.010. Epub 2008 Jun 4. PMID: 18534784

[Vibrissa hair bulge houses two populations of skin epithelial stem cells distinct by their keratin profile.](#)

Larouche D, Tong X, **Fradette J**, Coulombe PA, Germain L. FASEB J. 2008 May;22(5):1404-15. Epub 2007 Dec 27. PMID: 18162489

[Production of a new tissue-engineered adipose substitute from human adipose-derived stromal cells.](#)

Vermette M, Trottier V, Ménard V, Saint-Pierre L, Roy A, **Fradette J**. Biomaterials. 2007 Jun;28(18):2850-60. Epub 2007 Feb 27. PMID: 17374391

CONTACT INFORMATION

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