Pedro Lei, Ph.D.

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EDUCATION

University at Buffalo-The State University of New York
Ph.D., Chemical and Biological Engineering, Sept 2004 (GPA: 3.91/4.0)
Dissertation: Novel Strategies in Retroviral Production, Purification and Transduction for Gene Therapy: Application in Tissue Engineered Skin for Treatment of Type I Diabetes

Minnesota State University-Mankato
Bachelor of Science, June 1998 (GPA: 3.978/4.0)

- Major: Chemistry - concentration in organic synthesis using organometallic catalysts
- Minor: Mathematics

EMPLOYMENT

- (2012-present) Assistant Professor of Research, University at Buffalo-SUNY, Buffalo, NY
- (2006-present) Research Instructor, University at Buffalo-SUNY, Buffalo, NY
- (2004-06) Post-doctorate fellow, University at Buffalo-SUNY, Buffalo, NY
- (2000-04) Research Assistant, University at Buffalo-SUNY, Buffalo, NY
- (Spring 2001) Teaching Assistant, University at Buffalo-SUNY, Buffalo, NY
- (Jan-Jun 1998) Laboratory Assistant, Minnesota State University, Mankato, MN

PROFESSIONAL EXPERIENCE

- **Research**
  - Role of Cadherin-11 on cell fate (2017-present)
  - Reversal of aging effect on skeletal muscle cells (2016-present)
  - Transdifferentiation of epithelial cells into neural crest stem cells (2014-2018)
  - Salivary gland regeneration (2011-present)
  - High throughput screening to understand stem cell fate (2009-present)
  - Cell signaling pathways that govern cell scattering, cell-cell contact, and gene transfer (2008-2013)
  - Biomaterial mediated viral and non-viral gene delivery to mammalian cells (2008-2009)
  - Skin tissue engineering and wound healing (2006-2013)
  - Controlled release of insulin for diabetes (2006-2008)
  - Retroviral-mediated gene transfer for skin tissue engineering, and genetic modification of human skin cells to produce insulin for diabetes (2004-2007)
  - Write manuscripts for journal publications (2000-present).
  - Optimization of retroviral-mediated gene delivery (1999-2004)

- **Teaching**
  - Supervise and teach students from different laboratories and departments to design and run experiments (2006-present)
  -Train researchers from different departments to use laboratory equipment, including flow cytometer, microscope, spectrophotometer, electrophoresis device, thermos cycler, etc (2006-present)

- Teach researchers about lab safety, data recording, data analysis, and data interpretation (2006-present)
- Taught students problem solving techniques, and graded homework on fundamental thermodynamics in a class set-up (class size: ~ 30 students) and also on a one-to-one basis (Jan-May 2001)
- Supervised and taught students (class size: ~ 20 students) fundamental chemistry laboratory techniques and safety in undergraduate introductory level chemistry labs.

- **Service**
  - Provide courtesy help to the Director of Center for Cell, Gene and Tissue Engineering in establishing the center such as : infrastructure design, equipment purchases, as well as training new users to use equipment (2020-present)
  - Laboratory management: assign duties to group members, price negotiation and ordering laboratory equipment and supplies, routine maintenance of laboratory devices (2006-present)
  - Peer review manuscripts for scientific journals (2011-present)

SKILLS

- CELL CULTURE

  Isolation and culture of stem cells from bone marrow and hair follicle, primary keratinocytes and fibroblasts, primary salivary gland cells from parotid and submandibular glands. 3D spheroid culture of stem cells.
- TISSUE ENGINEERING

  3D bioengineered skin substitutes for wound healing and drug delivery studies, functional acinar salivary glands, tissue-engineered blood vessels.
- ANIMAL STUDY

  Skin grafting and create skin wounds on athymic mice for wound healing studies, injection, collection of tissue, urine and blood collection from mice.
- DOWNSTREAM ANALYSIS

  DNA, RNA, and protein isolation from cells and tissues, qRT-PCR, SDS-PAGE/Western Blot, ELISA, flow cytometry, immunocytochemistry/immunohistochemistry, fluorescence microscopy and image analysis.
- OTHER LABORATORY SKILLS

  Retro- and lentivirus production and titration, gene and siRNA/shRNA/sgRNA delivery via viral or non-viral methods, molecular biology (mutagenesis and cloning), protein expression and purification, Western Blot, high throughput screening using microarrays and shRNA/sgRNA library, biomaterials for gene and protein delivery.
- COMPUTER SKILLS

  Word, Excel, Powerpoint, Endnote, Adobe Photoshop
- STATISTICAL ANALYSIS

PUBLICATIONS

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1. K. Nam, H.T Dos Santos, F. Maslow, B. Trump, **P. Lei**, S.T. Andreadis, O.J. Baker “Laminin-1 Peptides Conjugated to Fibrin Hydrogels Promote Salivary Gland Regeneration in Irradiated Mouse Submandibular Glands” *Frontiers* (submitted for review).

2. A. Shahini, N. Rajabian, D. Choudhury, S. Shahini, K. Vydiam, T. Nguyen, J. Kulczyk, T. Santarelli, I. Ikhapoh, Y. Zhang, S. Liu, A. Stablewski, R. Thiyagarajan, K. Seldeen, B.R. Troen, J. Peirick, **P. Lei**, S.T. Andreadis "Ameliorating the hallmarks of cellular senescence in skeletal muscle myogenic progenitors in vitro and in vivo" *Science Advances* (accepted).
3. H.T. Dos Santos, K. Nam, C.T. Brown, S.M. Dean, S. Lewis, C.S. Pfeifer, **P. Lei**, S.T. Andreadis, and O.J. Baker "Trimers Conjugated to Fibrin Hydrogels Promote Salivary Gland Function" *Journal of Dental Research*, 100(3): 268-75 (2021).
4. N. Rajabian, M. Asmani, A. Shahini, K. Vydiam, D. Choudhury, T. Nguyen, I. Ikhapoh, **P. Lei**, R. Zhao, S.T. Andreadis "Bioengineered skeletal muscle as a model of muscle aging and regeneration" *Tissue Engineering Part A*, 27(1-2): 74-86 (2021).
5. C.T. Brown, K. Nam, Y. Zhang, Y. Qiu, S.M. Dean, H.T. Dos Santos, **P. Lei**, S.T. Andreadis, and O.J. Baker "Sex-Dependent Regeneration Patterns in Mouse Submandibular Glands" *Journal of Histochemistry and Cytochemistry*, 68(5): 305-318 (2020).
6. A. Jafari, N. Rajabian, G. Zhang, M.A. Mohamed, **P. Lei,** S.T. Andreadis, B.A. Pfeifer, and C. Cheng, "PEGylated amine-functionalized poly(ε-caprolactone) for the delivery of plasmid DNA" Materials, 13(4): 898. doi: 10.3390/ma13040898 (2020).
7. R.Z. Samuel, **P. Lei**, K. Nam, O.J. Baker, and S.T. Andreadis "Engineering the mode of morphogenetic signal presentation to promote branching from salivary gland spheroids in 3D hydrogels" *Acta Biomaterialia*, 105:121-30 (2020).
8. Y. Liu, **P. Lei**, S. Row and S.T. Andreadis "Cadherin-11 binds to PDGFRβ and enhances cell proliferation via the PDGFR-Akt Signaling Axis" *FASEB Journal*, 34(3): 3792-3804 (2020).
9. S. Moghadasi Boroujeni, A. Koontz, G. Tseropoulus, L. Kerosuo, P. Mehrota, V.K. Bajpai, S.R. Selvam, **P. Lei**, M.E. Bronner, and S.T. Andreadis, "Neural crest stem cells from human epidermis of aged donors maintain their multipotency in vitro and in vivo" *Scientific Reports*, 9(1): 9750. doi: 10.1038/s41598-019-46140-9 (2019).
10. K. Nam, S.M. Dean, C.T. Brown, R.J. Smith, Jr., **P. Lei**, S.T. Andreadis, and O.J. Baker, "Synergistic effects of laminin-1 peptides, VEGF and FGF9 on salivary gland regeneration" *Acta Biomaterialia*, 91: 186-194 (2019).
11. G. Tseropoulous, S.M. Boroujeni, V.K. Bajpai, **P. Lei**, and S.T. Andreadis, "Derivation of neural crest stem cells from human epidermal keratinocytes requires FGF-2, IGF-1, and inhibition of TGF-β1" *Bioengineering and Translational Medicine*, 3: 256-264 (2018).
12. A. Shahini, K. Vydiam, D. Choudhury, N. Rajabian, T. Nyuyen, **P. Lei**, S. T. Andreadis, "Efficient and high yield isolation of myoblasts from skeletal muscle" *Stem cell Research*, 30: 122-129 (2018).
13. A. Shahini, D. Choudhury, M. Asmani, R. Zhao, **P. Lei**, and S.T. Andreadis, "NANOG restores the impaired myogenic differentiation potential of skeletal myoblasts after multiple population doublings" *Stem Cell Research*, 26: 55-66 (2018).
14. K. Nam, C.L. Maruyama, C.S. Wang, B.G. Trump, **P. Lei**, S.T. Andreadis, and O.J. Baker, "Laminin-111-derived peptide conjugated fibrin hydrogel restores salivary gland function" *PLoS One*, Nov 2;12(11):e0187069. doi: 10.1371/journal.pone.0187069. eCollection 2017.
15. K. Nam, C.S. Wang, C.L. Maruyama, **P. Lei**, S.T. Andreadis, and O.J. Baker, "L1 Peptide-Conjugated Fibrin Hydrogels Promote Salivary Gland Regeneration" *Journal of Dental Research*, 96(7): 798-806 (2017).
16. V.K. Bajpai, L. Kerosuo, K.A. Cummings, R.Zieger, X. Wang, **P. Lei**, B. Liu, S. Liu, G. Popescu , M.E. Bronner, and S.T. Andreadis, "Reprogramming Postnatal Human Epidermal Keratinocytes Toward Functional Neural Crest Fates" *Stem cells*, 35(5): 1402-15 (2017).
17. P. Mistriotis, V.K. Bajpia, X. Wang, N. Rong, A. Shahini, M. Asmni, MS Liang, J. Wang, **P. Lei**, S. Liu, R. Zhao, and S.T. Andreadis, "NANOG reverses the myogenic differentiation potential of senescent stem cells by restoring ACTIN filamentous organization and SRF-dependent gene expression" *Stem Cells*, 35(1): 207-221 (2017).
18. K. Nam, J.P. Jones, **P. Lei**, S.T. Andreadis, and O.J. Baker, "Laminin-111 Peptides Conjugated to Fibrin Hydrogels Promote Formation of Lumen Containing Parotid Gland Cell Clusters" *Biomacromolecules*, 17(6): 2293-301 (2016).
19. J. Moharil, **P. Lei**, J. Tian, D.P. Gaile, and S.T. Andreadis, "Lentivirus live cell array for quantitative assessment of gene and pathway activation during myogenic differentiation of mesenchymal stem cells" *PloS One* Oct 27:10(10):e0141365. doi: 10.1371/journal.pone.0141365. eCollection 2015.

20. N. Likhite, C. A. Jackson, MS, Liang, **P. Lei**, J.F. Wood, B. Birkaya, K.L. Michaels, S.T. Andreadis, S.D. Clark, M.C. Yu, and D.M. Ferkey, "The Protein Arginine Methyltransferase PRMT5 Regulates D2-like Dopamine Receptor Signaling" *Science Signaling*, Nov 10:8(402):ra115. doi: 10.1126/scisignal.aad0872 (2015).
21. C.L Maruyama, N.J. Leigh, J.W. Nelson, A.D. McCall, R.E. Mellas, **P. Lei**, S.T. Andreadis, and O.J. Baker, "Stem Cell–Soluble Signals Enhance Multilumen Formation in SMG Cell Clusters" *Journal of Dental Research*, 94(11):1610-7 (2015).
22. S. Son, MS Liang, **P. Lei**, X. Xue, E.P. Furlani, and S.T. Andreadis, "Magnetofection Mediated Transient NANOG Overexpression Enhances Proliferation and Myogenic Differentiation of Human Hair Follicle Derived Mesenchymal Stem Cells" *Bioconjugate Chemistry*, 26(7): 1314-27 (2015).
23. S. Alimperi, **P. Lei**, Y. Wen, J. Tian, A.M. Campbell, and S.T. Andreadis, "Serum-free spheroid suspension culture maintains mesenchymal stem cell proliferation and differentiation potential" *Biotechnology Progress*, 30(4): 974-83 (2014).
24. H. You, **P. Lei**, and S.T. Andreadis, "JNK is a novel regulator of intercellular adhesion" *Tissue Barriers*, 1(5):e26845 (2013).
25. R. Padmashali, H. You, N. Karnik, **P. Lei**, and S.T. Andreadis, "Adherens junction formation inhibits lentivirus entry and gene transfer" *PloS One*, 8(11):e79265 (2013).
26. MS Liang, M. Kookatian, **P. Lei**, D. D. Swartz, and S.T. Andreadis, "Differential and synergistic effects of mechanical stimulation and growth factor presentation on vascular wall function" *Biomaterials*, 34(30): 7281-91 (2013).
27. A.D. McCall, J.W. Nelson, N.J. Leigh, M.E. Duffey, **P. Lei**, S.T. Andreadis, and O.J. Baker, "Growth factor enriched fibrin hydrogels promote salivary gland differentiation" *Tissue Engineering Part A*, 19(19-20):2215-25 (2013).
28. H. You, R. Padmashali, A. Ranganathan, **P. Lei**, N. Girnius, R.J. Davis, and S.T. Andreadis, "Compliance-induced Adherens Junction Formation in Epithelial Cells is regulated by JNK" *Journal of Cell Science*, 126(Pt 12): 2718-29 (2013).
29. **P. Lei**, H. You and S.T. Andreadis, "Bioengineered skin substitutes" *Methods in Molecular Biology*, 1001: 267-78 (2013).
30. J. Han, P. Mistriotis, **P. Lei**, D. Wang, S. Liu, and S.T. Andreadis, "Nanog reverses the effects of organismal aging on mesenchymal stem cell proliferation and myogenic differentiation potential" *Stem Cells*, 30(12): 2746-59 (2012).
31. S. Alimperti, **P. Lei**, J. Tian and S.T. Andreadis, "A novel lentivirus for quantitative assessment of gene knockdown in stem cell differentiation" *Gene Therapy*, 19(12): 1123-32 (2012).
32. J. Wang, **P. Lei**, S.T. Andreadis, and T.J. Mountziaris, "Detection of DNA Hybridization via Fluorescence Intensity Variations of ZnSe-DNA Quantum Dot Biosensors" *Analytical Letters*, 45(2-3): 227-41 (2012).
33. L.M. Lugo, **P. Lei** and S.T. Andreadis, "Vascularization of the dermis support enhances wound reepithelialization by in situ delivery of epidermal keratinocytes" *Tissue Engineering Part A*, 17(5-6): 665-75 (2011).
34. J. Tian, S. Alimperti, **P. Lei** and S.T. Andreadis, "Lentivirus microarrays for real-time monitoring of gene expression dynamics" *Lab on a chip*, 10(15): 1967-75 (2010).
35. S. Raut, **P. Lei,** R.M. Padmashali and S.T. Andreadis "Fibrin-mediated lentivirus gene transfer: implications for lentivirus microarrays" *Journal of Controlled Release*, 144(2): 213-20 (2010).
36. R. Singh, **P. Lei** and S.T. Andreadis "PKC-δ binds to E-cadherin and mediates EGF-induced cell scattering" *Experimental Cell Research*, 315(17): 2899-913 (2009).
37. **P. Lei**, R.M. Padmashali, and S.T. Andreaids, "Cell-controlled and spatially arrayed gene delivery from fibrin hydrogels" *Biomaterials*, 30(22): 3790-9 (2009).
38. J. Tian, **P. Lei**, S.G. Laychock and S.T. Andreadis "Regulated insulin delivery from human epidermal cells reverses hyperglycemia" *Molecular Therapy*, 16(6): 1146-53 (2008).
39. **P. Lei** and S.T. Andreadis "Efficient retroviral mediated gene transfer to epidermal stem cells" *Methods in Molecular Biology*, 433: 367-79. (2008).
40. **P. Lei**, A.M. Ogunade, K.L. Kirkwood, S.G. Laychock and S.T. Andreadis "Efficient production of bioactive insulin from human epidermal keratinocytes and tissue engineered skin substitutes: implications for treatment of diabetes" *Tissue Engineering*, 13 (8): 2119-31 (2007).

41. K.G. Cornwell, **P. Lei**, S.T. Andreadis and G.D. Pins "Crosslinking of discrete self-assembled collagen threads: Effects on mechanical strength and cell-matrix interactions" *Journal of Biomedical Materials Research Part A*, 80(2): 362-71 (2007).
42. **P. Lei** and S.T. Andreadis "Stoichiometric limitations in assembly of active recombinant retrovirus" *Biotechnology and Bioengineering*, 90 (7): 781-92 (2005).
43. B. Bajaj, **P. Lei** and S.T. Andreadis "Efficient gene transfer to human epidermal keratinocytes: in vitro evidence for transduction of epidermal stem cells." *Molecular Therapy*, 11 (6): 969-79 (2005).
44. **P. Lei**, B. Bajaj and S.T. Andreadis "Retrovirus-associated heparan sulfate mediates immobilization and gene transfer on recombinant fibronectin." *Journal of Virology*, 76 (17): 8722-8 (2002).
45. B. Bajaj, **P. Lei** and S.T. Andreadis "High efficiencies of gene transfer with immobilized recombinant retrovirus: kinetics and optimization." *Biotechnology Progress* 17 (4): 587-96 (2001).

Conference Proceedings

1. **P. Lei** and S.T. Andreadis "Rate-limiting steps in retroviral production and gene transfer." *Annual International Conference of the IEEE Engineering in Medicine and Biology - Proceedings* 1, 543-545 (2002)
2. B. Bajaj, **P. Lei** and S.T. Andreadis "Interaction of recombinant retroviruses with fibronectin yields high efficiencies of gene transfer." *Annals of Biomedical Engineering* 28, S-24 (2000).

PRESENTATIONS

1. A. Shahini, N. Rajabian, M. Asmani, K. Vydiam, D. Choudhury,T. Nguyen, R. Zhao, P. Mistrioties, **P. Lei**, and S.T. Andreadis **"**Engineering Senescent Muscle Tissues to Assess Reversal of Regeneration upon NANOG Expression" 2019 TERMIS AM Conference and Exhibition, Orlando, FL
2. Y. Liu, **P. Lei**, S. Row, and S.T. Andreadis "Engagement of Cadherin-11 Promotes Cell Growth in Cooperation with Platelet Derived Growth Factor Receptor (pdfgr) via Akt Pathway" 2019 TERMIS AM Conference and Exhibition, Orlando, FL
3. R.Z. Samuel, **P. Lei**, K. Nam, O.J. Baker, and S.T. Andreadis "Spatial Gradients of FGF-7 and FGF-10 in Laminin-111 Peptide Conjugated Fibrin Hydrogels Controls the Branching Morphogenesis of Parotid Gland Cell Clusters" 2019 BMES Annual Fall Meeting, Philadelphia, PA
4. N. Rajabian, A. Shanini, M. Asmani, K. Vydiam, D. Choudhury, T. Nguyen, I. Ikhapoh, **P. Lei**, R. Zhao, and S. T. Andreadis "Bioengineered Senescent Skeletal Muscle Tissue Model for Assessing Therapeutic Compounds" 2019 BMES Annual Fall Meeting, Philadelphia, PA
5. A. Shahini, N. Rajabian, D. Choudhury, K. Vydiam, T. Nguyen, T. Santarelli, I. Ikapolah, Y. Zhang, S. Liu, H. Pletts, A. Stablewski, R. Thiyagarajan, Y. Redae, K. Seldeen, B. Troen, **P. Lei**, and S.T. Andreadis **"**NANOG Expression Ameliorates the Hallmarks of Aging in Skeletal Muscle Progenitors" 2019 BMES Annual Fall Meeting, Philadelphia, PA
6. K. Nam, C.L. Maruyama, C-S Wang, **P. Lei**, S.T. Andreadis, and O.J. Baker "Laminin-1 peptide conjugated fibrin hydrogels restores salivary gland function" 2018 AADR/CADR Annual Meeting, Fort Lauderdale, FL
7. A. Shahini, D. Choudhury, M. Asmani, R. Zhao, **P. Lei**, and S.T. Andreadis "NANOG Restores the Myogenic Differentiation Potential of Senescent Myoblasts" 2017 AIChE Annual Fall Meeting, Minneapolis, MN
8. G. Tseropoulos, V. Bajpai, L. Kerosuo, K. Cummings, S.M.Boroujeni, **P. Lei**, S. Selvam, X. Wang, B. Liu, S. Liu, G. Popescu, M. Bronner, and S.T. Andreadis "Investigating The Role Of FGF In Reprogramming Of Epidermal Keratinocytes Towards Neural Crest Fate " 2017 BMES Annual Fall Meeting, Phoenix, AZ
9. A. Shahini, D. Choudhury, M. Asmani, R. Zhao, **P. Lei**, and S.T. Andreadis "NANOG Restores the Myogenic Differentiation Potential of Senescent Myoblasts" 2017 BMES Annual Fall Meeting, Phoenix, AZ
10. G. Tseropoulos, V. K. Bajpai, L. Kerosuo, K.A. Cummings, X. Wang, **P. Lei**, B. Liu, S. Liu, G. Popescu, M.E. Bronner, and S.T. Andreadis "The Role of FGF2 in Reprogramming of Epidermal

Keratinocytes Toward Neural Crest" 2017 International Society for Stem Cell Research (ISSCR) Annual Meeting, Boston, MA

11. A. Shahini, D. Choudhury, M. Asmani, R. Zhao, **P. Lei**, and S.T. Andreadis "NANOG Restores the Myogenic Differentiation Potential of Senescent Myoblasts" 46th Annual Conference of the American Aging Association (AGE), New York, NY, June 10-12, 2017
12. G. Tseropoulos, S. Bogadasi, V. K. Bajpai, L. Kerosuo, K.A. Cummings, X. Wang, **P. Lei**, B. Liu, S. Liu, G. Popescu, M.E. Bronner and S.T. Andreadis "The Role of FGF2 in Reprogramming of Epidermal Keratinocytes Toward Neural Crest" 2017 New York Stem Cell Science (NYSTEM) Meeting, New York, NY
13. A. Shahini, D. Choudhury, M. Asmani, R. Zhao, **P. Lei**, and S.T. Andreadis "Nanog Expression Restores the Regenerative Capacity of Senescent Myoblasts", 2017 New York Stem Cell Science (NYSTEM) Meeting, New York, NY
14. K. Bajpai, L. Kerosuo, K.A. Cummings, G. Tseropoulos, X. Wang, **P. Lei**, B. Liu, S. Liu, G. Popescu, M.E. Bronner and S.T. Andreadis "The Role of FGF2 in Reprogramming of Epidermal Keratinocytes Toward Neural Crest" 2016 AIChE Annual Fall Meeting, San Francisco, CA
15. C. Maruyama, J.W. Nelson, N.J. Leigh, A.D. McCall, R.E. Mellas, **P. Lei**, S.T. Andreadis, and O.J. Baker "hHF-MSC Conditioned Media Enhances Branching Morphogenesis in Mouse Submandibular Glands", 2015 American Association for Dental Research (AADR) Meeting, Tampa, FL
16. S.Y. Son, M-S. Liang, **P. Lei**, and S.T. Andreadis "Nanog Transient Overexpression With Optimized Magnetofection to Reverse the Effects of Organismal Aging On Mesenchymal Stem Cells" 2013 AIChE Annual Fall Meeting, San Francisco, CA
17. S. Son, M.-S. Liang, **P. Lei**, and S.T. Andreadis, "Non-viral DNA Delivery Approach for High-Efficiency Nanog Transient Overexpression in Mesenchymal Stem Cells to Reverse the Effects of Organismal Aging" 2013 BMES Annual Fall Meeting, Seattle, WA
18. J. Moharil, P. Mistriotis, H. You, **P. Lei**, J. Tian, S.T. Andreadis, "High Throughput Monitoring of Pathway Activation upon Ectopic Expression of Nanog in Human Mesenchymal Stem Cells Using Lentiviral Arrays" 2012 AIChE Annual Fall Meeting, Pittsburgh, PA
19. J. Moharil, P. Mistriotis, H. You, **P. Lei**, J. Tian, S.T. Andreadis, "Lentiviral Arrays for High Throughput Monitoring of Pathway Activation in Nanog-Expressing Human Mesenchymal Stem Cells" 2012 BMES Annual Fall Meeting, Atlanta, GA
20. P. Hayden, C.E. Mankus, **P. Lei**, G.R. Jackson, J. Bolmarcich, A. Armento, S.T. Andreadis, M. Klausner, "Organotypic *in vitro* human epithelial models with engineered gene knockdown or mechanistic reporter functions" 2012 Society of Investigative Dermatology Annual Meeting, Raleigh, NC
21. K. Manzella, **P. Lei**, S.T. Andreadis, O.J. Baker, O.J., "Combination of Fibrin Hydrogels and Matrigel Enhance Par-C10 Acinar Differentiation" 2012 American Association for Dental Research (AADR) Meeting, Tampa, FL
22. **P. Lei,** J. Moharil, J. Tian, and S.T. Andreadis, "Temporal Gene Expression Profiling In Live Cell Array: Monitoring Mesenchymal Stem Cell Differentiation" 2011 AIChE Annual Fall Meeting, Minneapolis, MN
23. **P. Lei,** J. Moharil, J. Tian, and S.T. Andreadis "Live cell array for real time monitoring of pathway activation during myogenic differentiation of mesenchymal stem cells" 2011 BMES Annual Fall Meeting, Hartford, CT
24. **P. Lei,** J. Tian, J. Moharil, P. Xu, C.P. Schaffer, and S.T. Andreadis "Live cell array for high-throughput study of real-time gene expression dynamics: towards understanding of mesenchymal stem cell differentiation" 2010 AIChE Annual Fall Meeting, Salt Lake City, UT
25. **P. Lei**, J. Tian, J. Moharil P. Xu, C.P. Schaffer, and S.T. Andreais "Lentiviral microarray for real time monitoring myogenic differentiation of human MSC" 2010 BMES Annual Fall Meeting, Austin, TX
26. J. Tian, **P. Lei**, R. Padmashali, P. Xu and S.T. Andreadis "Monitoring real-time gene expression during differentiation of mesenchymal stem cells using high throughput live cell arrays" New York State Stem Cell Science (NYSTEM) Awardees Meeting, May 26, 2010
27. J. Tian, S. Allimperti, **P. Lei** and S.T. Andreadis "Lentiviral Microarrays for High-Throughput and Real-Time Monitoring of Gene Expression Dynamics", 13th Annual Meeting of the American Society of Gene Therapy (ASGT), Washington, DC, May 21, 2010

28. R. Padmashali, **P. Lei** and S.T. Andreadis "Fibrin-Conjugated Pseudotyped Lentivirus for Cell-Controlled and Spatially Localized Gene Delivery on Microarrayed Surfaces", 13th Annual Meeting of the American Society of Gene Therapy (ASGT), Washington, DC, May 21, 2010
29. S. Raut, **P. Lei**, R. Padmashali and S.T. Andreadis "Use of Fibrin Hydrogels for Localized and Cell-Controlled Lentiviral Gene Transfer", 2008 AIChE Annual Fall Meeting, Philadelphia, PA
30. J. Wang, T. Heckler, B.C. Mei, **P. Lei** and S.T. Andreadis, T.J. Mountziaris, "DNA Hybridization Detection Using Zinc Selenide Nanocrystals as Active Sensors" 2008 AIChE Annual Fall Meeting, Philadelphia, PA
31. **P. Lei**, R. Padmashali and S.T. Andreadis "Confined gene delivery from fibrin hydrogels based on target cell ingrowth" 2008 AIChE Annual Fall Meeting, Philadelphia, PA
32. S. Raut, R. Padmashali, **P. Lei** and S.T. Andreadis "Enhanced, Localized and Cell-Controlled Lentiviurs Gene Transfer from Fibrin Hydrogels" 2008 BMES Annual Fall Meeting, St. Louis, MO
33. **P. Lei**, R. Padmashali and S.T. Andreadis "Localized and cell-controlled gene delivery from fibrin hydrogels" 2008 BMES Annual Fall Meeting, St. Louis, MO
34. R. Singh, **P. Lei** and S.T. Andreadis "PKC-delta binds to E-cadherin and mediates EGF induced cell-scattering" 2008 BMES Annual Fall Meeting, St. Louis, MO
35. J. Tian, **P. Lei**, S.G. Laychock and S.T. Andreadis "Regulated Secretion of Insulin from Genetically Modified Epidermal Stem Cells for Treatment of Diabetes", 11th Annual Meeting of the American Society of Gene Therapy (ASGT), Boston, MA, May 28-June 1, 2008.
36. J. Tian, **P. Lei**, S.G. Laychock and **S.T. Andreadis** "Regulated secretion of insulin from genetically modified skin cells for treatment of diabetes" 2007 BMES Annual Fall Meeting, Los Angeles, CA
37. J. Tian, **P. Lei**, S.G. Laychock and S.T. Andreadis "Controlled secretion of insulin from gene modified tissue engineered skin for treatment of diabetes" 2007 TERMIS NA Conference and Exhibition on Tissue Engineering and Regenerative Medicine, Toronto, Ontario, Canada
38. **P. Lei**, J. Tian, S.G. Laychock and S.T. Andreadis "Regulated production of biologically active insulin from human engineered skin substitutes for treatment of diabetes" 2006 AIChE Annual Meeting, San Francisco, CA
39. **P. Lei**, J. Tian, S.G. Laychock and S.T. Andreadis "Controlled release of biologically active insulin from gene modified tissue engineered skin for treatment of diabetes" 2006 BMES Annual Fall Meeting, Chicago, IL
40. **P. Lei**, A.M. Ogunade, K.L. Kirkwood, S.G. Laychock and S.T. Andreadis "Controlled expression of biologically active insulin from gene modified tissue engineered skin for treatment of diabetes" 2006 Regenerate World Congress on Tissue Engineering and Regenerative Medicine, Pittsburgh, PA
41. **P. Lei**, A.M Ogunade, S.G. Laychock, K.L. Kirkwood and S.T. Andreadis "High levels of insulin production from genetically modified skin substitutes for treatment of diabetes" 2005 Annual Fall Meeting, Cincinnati, OH
42. **P. Lei**, A.M. Ogunade, S.G. Laychock, K.L. Kirkwood and S.T. Andreadis "High levels of insulin production from genetically modified skin substitutes for treatment of diabetes." 2005 BMES Annual Fall Meeting, Baltimore, MD
43. **P. Lei**, S.G. Laychock, K.L. Kirkwood and S.T. Andreadis "Secretion of mature insulin from three dimensional skin equivalents reduces blood glucose concentration in diabetic mice." 2004 AIChE Annual Fall Meeting, Austin, TX
44. **P. Lei**, S.G. Laychock, K.L. Kirkwood and S.T. Andreadis "Gene transfer to epidermal stem cells: application of gene modified skin equivalents for insulin delivery." 2004 BMES Annual Fall Meeting, Philadelphia, PA
45. **P. Lei** and S.T. Andreadis "Rate limiting steps in retrovirus synthesis and assembly." 2003 AIChE Fall Annual Meeting, San Francisco, CA
46. **P. Lei** and S.T. Andreadis "Production of recombinant retrovirus is limited by mRNA synthesis and encapsidation." 2003 BMES Annual Fall Meeting, Nashville, TN
47. **P. Lei** and S.T. Andreadis "Quantitative studies of the rate-limiting steps in retroviral production and gene transfer" 2002 AIChE Annual Fall Meeting, Indianapolis, IN
48. **P. Lei** and S.T. Andreadis "Binding of retrovirus to FN: mechanistic studies and strategies for virus purification." 2002 BMES Annual Fall Meeting, Houston, TX
49. B. Bajaj, **P. Lei** and S.T. Andreadis "Immobilization of recombinant retrovirus to fibronectin for gene transfer: factors that mediate virus binding" 2001 AIChE Annual Fall Meeting, Reno, NV

50. **P. Lei**, B. Bajaj & S.T. Andreadis "Mechanistic studies of retrovirus gene transfer on recombinant fibronectin", 2001 BMES Annual Fall Meeting, Raleigh/Durham, NC
51. B. Bajaj, P. Lei and S.T. Andreadis "Gene Transfer using Recombinant Retroviruses Immobilized on Extracellular Matrix Molecules", Annual Research Day of the Center for Advanced Molecular Biology and Immunology (CAMBI), SUNY - Buffalo, Buffalo, NY, January 10, 2001.
52. B. Bajaj, **P. Lei** and S.T. Andreadis "High Efficiencies of Gene Transfer using Immobilized Recombinant Retroviruses" 2000 AIChE Fall Annual Meeting, Los Angeles, CA
53. B. Bajaj, **P. Lei** and S.T. Andreadis "Interaction of Recombinant Retroviruses with Fibronectin Yields High Efficiencies of Gene Transfer" 2000 BMES Annual Fall Meeting, Seattle, WA

PATENTS AND PATENT APPLICATIONS

- Pedro Lei and Stelios T. Andreadis, "Tissue engineered insulin releasing skin grafts for treatment of diabetes", Filed in the U.S. Patent and Trademark Office by the Research Foundation of the State University of New York as a Provisional Patent Application, Serial Number 60/619,228, (2004)

RESEARCH GRANTS

- Key Personnel National Institute of Health (NIDCR, 1R01DE022971-01): The Use of Fibrin Hydrogels to Build an Artificial Salivary Gland. Dates: 07/01/2012-06/30/2016.

HONORS AND AWARDS

- William J. Gies Award (manuscript co-author) (2019)
- Discretionary Lump-Sum Award (2016)
- Discretionary Lump-Sum Award (2015)
- Discretionary Lump-Sum Award (2014)
- UUP Individual Development Award (2012)
- Discretionary salary increase (2011)
- Third place in poster competition for graduate students at AIChE Annual Meeting (2003)
- Student travel award for BMES conference (2002)
- Third place in poster competition in graduate student symposium, Department of Chemical and Biological Engineering-University at Buffalo (co-author) (2000)
- Research Award (Spring 1998, Mankato State University)
- Who's Who Among Students in American Universities & Colleges (1997-1998)
- In-state Tuition Awards (1997-1998, Mankato State University)
- Opportunity Awards (Fall 1995, Blinn College)
- President's Scholar (1995)
- Dean's List

AFFILIATIONS

- Member, Biomedical Engineering Society (BMES)
- Member, American Institute of Chemical Engineers (AIChE)
- Member, Phi Theta Kappa (1995-1996)
- Member, Golden Key National Honor Society