

LUISA A. DIPIETRO, DDS, PhD
Brief Curriculum Vitae

Current Position and Contact Information: Professor and Director, UIC Center for Wound Healing & Tissue Regeneration, Associate Vice Chancellor for Research, University of Illinois at Chicago, 801 S. Paulina Street (MC 859), Chicago, IL 60612-7211. E-mail: Ldipiet@uic.edu, Phone: 312-355-0432.

Professional Education: DDS with honors, University of Illinois at Chicago, PhD in Microbiology and Immunology, University of Illinois at Chicago

Research Summary:

My laboratory studies the process of wound healing and tissue regeneration following injury. Our major contributions include the discovery of the mechanisms that guide capillary growth and regression in healing wounds, and studies of the regulation of inflammation at sites of injury. We were the first to describe the intersection of capillary growth with scar formation in wounds, and the first to identify specific pro and anti-angiogenic signals in wounds. Our work on inflammation has contributed to the growing and detailed understanding of how inflammation can be both beneficial and detrimental to wound healing outcomes. We were also among the first to study and identify the key characteristics that distinguish the rapid and scarless wound healing that occurs in oral mucosa. Current studies continue to focus on these topics as well as the genomic regulation of wound repair and the development of computational models of wound healing.

Research Accomplishments

Extramural Funding – As principal investigator, recipient of > \$15 million in NIH funding; Continuous NIH funding since 1993; Principal Investigator of one of four NIGMS National Centers for Innovative Wound Healing Research; Recipient of more than \$2.5 million in non-federal research support

Advisory Boards – Service on more than 10 scientific foundation and corporate advisory boards including Cook Biotech, Inc, Medtronic, and the American Federation for Aging Research

Publications – Author of >200 original published reports and abstracts. Co-editor of two books. Cited more than 1100 times in 2015; H factor: 44 (Google Scholar)

Service Accomplishments

National Institutes of Health –Chair, Oral Biology and Medicine Study Section 2002-03; Chair, Oral and Dental Craniofacial Sciences Study Section, 2003-04, 2007-08; NIGMS Advisory Council Member, 2010-2013; Service on more than 50 NIH review panels.

Wound Healing Society - President, 2010-2011; Board of Directors, 2005-08; Distinguished Service Award, 2015

Gordon Research Conference - Chair, GRC on Tissue Repair and Regeneration, 2009

American Association for the Advancement of Science – Chair, Section R, Dentistry and Oral Health, 2014-15

Diversity Efforts – Chair, College Diversity Advisory Committee, 2009- 2012; co- Chair, UIC Chancellor's Committee on the Status of Women, Faculty Concerns Subcommittee, 2007-09

Mentoring

Principal Investigator of two NIH T32 Training Programs and one NIH KL2 Career Development Program; Faculty Advisor to UIC Postdoctoral Association; Primary research advisor for 13 doctoral students, 4 masters students, 20 residents/postdoctoral fellows, and > 25 professional students; Mentor of the Year, UIC COD, 2010; Mentor of the Year, American Association for Dental Research, National Student Research Group, 2011

Leadership - UIC

Founder and Director, UIC Center for Wound Healing and Tissue Regeneration, - 2008-current – Created and developed a multi-disciplinary UIC center for translational research in tissue repair and regeneration.

Fellow, Executive Leadership in Academic Medicine (ELAM) Program, completed April 2010

Founding Associate Dean for Faculty Affairs, UIC College of Dentistry, 2012- 2014 – Created Office of Faculty Affairs; Responsible for the development of programs to assist in faculty recruitment, retention, and professional development; oversight of promotion and tenure.

Associate Vice Chancellor for Research, UIC, 2012-current – Charged with enhancing the climate for post-doctoral fellows across the UIC campus; with assisting in graduate student career development, and in enhancing the research training environment.

Leadership - Loyola University

Vice Chair of Research, Department of Surgery, Loyola University Medical Center, 2002-2006 – Responsible for recruitment, evaluation, and retention of all research faculty and for development of research programs; oversaw two-fold growth in extramural research funding

Director of Research, Burn and Shock Trauma Institute, Loyola University Medical Center, 1997-2006 – Responsible for overall function for a research institute with 8 PIs; raised more than \$4 million in foundation and other donations

Recent Peer Reviewed Publications (past 5 years)

DiPietro LA. Angiogenesis and wound healing: When enough is enough. *J Leukoc Biol*. 2016. 100:979-984. PMID, In progress.

Urao N, Okonkwo US, Fang MM, Zhuang ZW, Koh TJ, **DiPietro LA**. MicroCT angiography detects vascular formation and regression in skin wound healing. *Microvasc Res*. 2016. 106:57-66. PMID: PMC4867264

Schmidt J, Lee MK, Ko E, Jeong JH, **DiPietro LA**, Kong H. Alginate sulfates mitigates binding kinetics of proangiogenic growth factors with receptors towards revascularization. *Mol Pharm*. 2016 Feb 16. [Epub ahead of print]

Zhao Y, Bao L, Chan LS, **DiPietro LA**, Chen L. Aberrant wound healing in an epidermal interleukin-4 transgenic mouse model of atopic dermatitis. *PLoS ONE* 2016. 11: e0146451. PMID: PMC4709197

Chen L, Mirza R, Kwon Y, **DiPietro LA***, Koh TJ.* The murine excisional wound model: Contraction revisited. *Wound Rep Regen* 2015, 23:874-7. PMID: PMC5094847 (*Co-corresponding authors)

Goldufsky J, Wood SJ, Jayaraman V, Chen L, Qin S, Zhang C, **DiPietro LA**, Shafikhani S. *Pseudomonas aeruginosa* requires type III secretion system to inhibit wound healing in diabetic skin. *Wound Rep Regen* 2015. 23:557-64. PMID: PMC4690211

Wietecha MS, Król MJ, Michalczyk ER, Chen L, Gettins PG, **DiPietro LA**. Pigment epithelium-derived factor (PEDF) as a multifunctional regulator of wound healing. *Am J Physiol Heart Circ Physiol*. 2015. 309:H812-26. PMID:PMC4591402

Gould L, Abadir P, Brem H, Carter M, Conner-Kerr T, Davidson J, **DiPietro L**, Falanga V, et al. Chronic wound repair and healing in older adults: Current status and future research. *J Am Geriatr Soc*. 2015, 63:427-38. PMID: PMC45824122412

Turabelidze A, Guo S, Chung A, Chen L, Dai Y, **DiPietro LA**. Intrinsic differences between oral and skin keratinocytes. *PLoS ONE*, 2014, 9:e101480. PMID: PMC4157746

- Johnson A, Guo S, **DiPietro LA**. Differential apoptosis in mucosal and dermal wound healing. *Adv Wound Care*, 2014 Dec 1;3:751-761. PMID: PMC4250958
- Chen L, Schrementi ME, Ranzer MJ, Wilgus TA, **DiPietro LA**. Blockade of mast cell activation reduces cutaneous scar formation. *PLoS ONE* 2014, 9: e85226. PMID: PMC3898956
- Chen L, **DiPietro LA**. Production and function of pigment epithelium-derived factor in isolated skin keratinocytes. *Exp Dermatol* 2014, 23:436-8. PMID: PMC415132.
- Chen L, Mehta ND, Zhao Y, **DiPietro LA**. Absence of CD4 or CD8 lymphocytes changes infiltration of inflammatory cells and profiles of cytokine expression in skin wounds, but does not impair healing. *Exp Dermatol* 2014, 23:189-94. PMID: PMC3989939
- Wood S, Jayaraman V, Huelsmann EJ, Bonish B, Burgad D, Sivaramakrishnan G, Qin S, **DiPietro L**, Zloza A, Zhang C, Shafikhani SH. Pro-inflammatory chemokine CCL2 (MCP-1) promotes healing in diabetic wounds by restoring the macrophage response. *PLoS One* 2014, 9:e91574 PMID: PMC3950222
- Chen L, Guo S, Ranzer MJ, **DiPietro LA**. Toll-like receptor 4 plays an essential role in early skin wound healing. *J Invest Dermatol* 2013.133:258-67. PMID: PMC3519973
- Johnson A, **DiPietro LA**. Apoptosis and angiogenesis: An evolving mechanism for fibrosis. *FASEB J* 2013, 27:3893-901. PMID: PMC4046186
- Shaterian A, Kao S, Chen Lin, **DiPietro LA**, Coimbra R, Eliceiri B, Baird A. The candidate tumor suppressor gene *Ecr4* as a wound terminating factor in cutaneous injury. *Arch Dermatol Res* 2013, 305:141-9. PMID: PMC3510341
- Gordillo G, Bernatchez S, Diegelmann R, **DiPietro LA**, Eriksson E, Hinz B, Hopf H, Kirsner R, Liu P, Parnell LKS, Sandusky G, Sen C, Tomic-Canic M, Volk S, Baird A. Proceedings of the Wound Healing Society pre-conference symposium on pre-clinical models of wound healing: Is man the model? *Adv Wound Care* 2013, 2:1-4. PMID: PMC3840478
- Lee S, Szilagyi E, Chen L, **DiPietro LA**, Premanand K, Bartholomew AM. Activated mesenchymal stem cells increase wound tensile strength in aged mouse model via macrophages. *J Surg Res* 2013, 181:20-4.
- Lo JF, Brennan M, Merchant Z, Chen L, Guo S, Eddington DT, **DiPietro LA**. Microfluidic wound bandage: localized oxygen modulation of collagen maturation. *Wound Rep Regen* 2013, 21:226-34. PMID: PMC3594490
- Wietecha MS, **DiPietro LA**. Therapeutic approaches to the regulation of wound angiogenesis. *Adv Wound Care* 2013, 2:81-86. PMID: PMC3623575
- Wulff BC, Parent AE, Meleski MA, **DiPietro LA**, Schrementi ME, Wilgus TA. Mast cells contribute to scar formation during fetal wound healing. *J Invest Dermatol* 2012. 132:458-465. PMID: PMC3258379
- Wilgus TA, **DiPietro LA**. Complex roles for VEGF in dermal wound healing (letter). *J Invest Dermatol*. 2012. 132:493-4. PMID: PMC3641236
- Pence BD, **DiPietro LA**, Woods JA. Exercise speeds cutaneous wound healing in high-fat diet-induced obese mice. *Med Sci Sports Exerc* 2012, 44:1846-54.
- Chen L, Gajendrareddy P, **DiPietro LA**. Differential expression of HIF-1 α in skin and mucosal wounds. *J Dent Res* 2012, 91:871-6. PMID: PMC3420394
- Ranzer MJ, Chen L, **DiPietro LA**. Fibroblast function and wound breaking strength are impaired by acute ethanol intoxication. *Alcohol Clin Exp Res* 2011, 35:83-90. PMID: PMC3005009
- Wietecha MS, Chen L, Ranzer MJ, Patel TB, **DiPietro LA**. Sprouty2 down-regulates angiogenesis during mouse skin wound healing. *Am J Physiol* 2011, 300: H459-H467. PMID: PMC3044050

Koh TJ, **DiPietro LA**. 2011. Macrophages and wound healing. In *Advances in Wound Care* Vol 2, Sen C, Ed. Mary Ann Liebert.

Gallant-Behm CL, Du P, Lin S, Marucha PT, **DiPietro LA**, Mustoe TA. Epithelial regulation of mesenchymal tissue behavior. *J Invest Dermatol* 2011, 131:892-9. PMID: PMC3137131

Valesco J, Li J, **DiPietro LA**, Stepp M, Sandy JD, Plaas A. Adamts5 deletion blocks murine dermal repair through CD44-mediated aggrecan accumulation and modulation of transforming growth factor β 1 (TGF β 1) signaling. *J Biol Chem* 2011, 286:26016-27. PMID: PMC3138253

Complete List of Published Work:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/luisa.dipietro.1/bibliography/43825342/public/?sort=date&direction=ascending>