CURRICULUM VITAE

November, 2012

Name: **Praveen R Arany**

Work Address: Cell Regulation and Control Unit
Oral and Pharyngeal Cancer Branch
National Institute of Dental and Craniofacial Research
National Institutes of Health
30 Convent Drive
Building 30, Room 301
Bethesda, Maryland 20892-4340
Tel: (301) 496-3561
Fax: (301) 480-1881
E-mail:aranyp@mail.nih.gov

Education:

1999 Bachelor in Dental Surgery (B.D.S), Dharwad University, India
2001 Masters in Dental Surgery (M.D.S), Rajiv Gandhi University of Health Sciences, India
2007 Certificate, Clinical Research Curriculum, National Institutes of Health, USA
2011 Certificate, Leder Human Biology & Translational Medicine, Harvard Medical School, USA
2011 Certificate, Oral and Maxillofacial Pathology, Harvard School of Dental Medicine, USA
2011 Masters in Medical Sciences (M.M.Sc.), Harvard School of Dental Medicine, USA
2011 Doctorate (Ph.D.) in Biological Sciences in Dental Medicine, Harvard University, USA

Employment History:

2012-present Assistant Clinical Investigator, Cell Regulation and Control Unit, Oral and Pharyngeal Cancer Branch, National Institute of Dental and Craniofacial Research, NIH, Bethesda, USA
2011-2012 Research Associate, Cell and Tissue Engineering, Harvard School of Engineering and Applied Science, Cambridge, USA
2003-2006 Fogarty Visiting Fellow, Laboratory of Cell Regulation and Carcinogenesis, National Cancer Institute, NIH, Bethesda, USA.
2001-2003 Postdoctoral Fellow, Molecular Reproduction and Genetics, Indian Institute of Sciences, Bangalore, India.

Honors and Awards:

2011 Eugene Siedner Scholar, Academy of Laser Dentistry, San Diego, USA
Pulp Biology and Regeneration Award, American Academy of Dental Research, San Diego, USA
Best review paper, Oral Diseases, USA

2009	Wound Biotechnology Foundation Award, Wound Healing Society, Dallas
2006	NIH Merit Award, Bethesda, USA
	NCI Director's Innovation award, Bethesda, USA
2004	Keynote Lecture, Indian Academy of Oral Pathologists, Calicut, India
2001	Best poster and paper award, Indian Academy of Oral Pathologists, Pondicherry, India
2000	Best poster award, Indian Academy of Oral Pathologists, Mumbai, India

Editorial Responsibilities:

2012-current	Editorial Board, SOAJ Journal of Pathobiology and Toxicology
2012-current	Editorial Board, Datasets in Physics (Biological Physics)
2011-current	Editorial Board, Journal of Laser Dentistry
2010-current	Associate Editor, International Journal of Oral and Maxillofacial Pathology

Ad-hoc Reviewer:

Acta Cytologica, Advanced Wound Care, Biologics: Targets and Therapy, International Journal of Oral and Maxillofacial Pathology, Journal of Laser Dentistry, Journal of Contemporary Dental Insight, Journal of Dental Research, Journal of Pediatric Biochemistry, Journal of Clinical and Medical Research, Lasers in Medical Sciences, Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontology, Photomedicine and Laser Surgery, PLoS One, Radiation Oncology, The Cleft Palate-Craniofacial Journal, Tissue Engineering, Wound repair and Regeneration.

Membership and Activity in Professional Societies:

American Association for Advancement of Science (AAAS)
American Academy of Oral and Maxillofacial Pathologists (AAOMP)
American Dental Education Association (ADEA)
Indian Academy of Oral and Maxillofacial Pathologists (IAOMP)
International and American Association of Dental Research (IADR & AADR)
International Union against Cancer (UICC)
New England Society for Microscopy (NESM)
North American Association of Laser Therapy (NAALT)
Wound Healing Society (WHS)

Extramural Activities

Non-NIH

2012-present	Co-chair, Eugene Seidner scholars committee, Academy of Laser Dentistry
2012-present	Member, University and Academia committee, Academy of Laser Dentistry
2011-present	Member, Awards committee, Wound Healing Society.
2011-present	Member, Education committee, Wound Healing Society.
2010-present	Board of Directors, North American Association for Laser Therapy.
2010-present	Chair, Science Committee, North American Association for Laser Therapy
2008-present	Member, Program committee, Wound Healing Society.

2009-2010 Member, Committee on Diversity and Community Outreach, American Academy of Oral and Maxillofacial Pathologists.

NIH Extramural

2013 Ad-hoc member, Biomaterials & Biointerfaces (BMBI) Study Section, DER, NIH

Invited Presentations

2012 Lab of Cancer Biology and Genetics, NCI, NIH, Bethesda, MD.
2012 Lab of Regenerative Biology, NIDDK, NIH, Bethesda, MD.
2012 Tissue Engineering and Regenerative Medicine, Columbus, OH.
2012 Academy of Laser Dentistry, Scottsdale, AZ.
2011 New England Society of Microscopy, Boston, MA.
2011 Wyss Institute Annual Retreat, Boston, MA.
2011 Case Western Reserve, School of Dentistry, Cleveland, OH.
2011 Faculty of Dentistry, National University of Singapore, Singapore.
2011 National Institute of Dental and Craniofacial Research, Bethesda, MD.
2009 American Society of Photobiology, Rochester, NY.
2009 North American Association of Laser Therapy, San Francisco, CA.
2008 Food and Drug Administration, Silver Spring, MD.
2008 Harvard School of Dental Medicine, Alumni meet, Boston, MA.
2008 American Society of Photobiology, San Francisco, CA.
2007 Engineering Conferences International, Tomar, Portugal.
2007 Pediatric Gastroenterology and Nutrition Unit, Massachusetts General Hospital, Boston, MD.
2006 Indian Institute of Science, Bangalore, India.
2006 Postgraduate Student Convention of Oral and Maxillofacial Pathology, K.I.D.S, Belgaum.
2004 Indian Academy of Oral and Maxillofacial Pathologist, Calicut, India.
2004 Indian Institute of Science, Bangalore, India.
2004 Government Dental College, Tiruvananthapuram, India.
2004 Maratha Mandai Dental College, Belgaum, India.
2004 K.L.E.S' s Institute of Dental Sciences, Belgaum, India.
2004 R.V. Dental Sciences Institute, Bangalore, India.

Symposia Organized:

2010 Scientific Chair, Annual conference, North American Association for Laser Therapy.
2009 Co-Chair, symposium on 'Pathology for Graduate students- the hidden science Harvard Integrated Life Sciences.
2008 Co-Chair, symposium on 'Frontiers in Translational Research', Harvard Integrated Life Sciences, Broad Institute and Leder Human Biology and Translational Medicine.
2007 Workshop of 'Publishing in the new millennium', Harvard Integrated Life Sciences, Harvard Medical School.
2007 Co-Chair, symposium, 'Palingenesia -Wound Healing and Regeneration', Harvard Integrated Life Sciences, Leder Medical Sciences Program and Harvard Medical School.

Invention Reports and Patents:

- Laser mediated Dentinogenesis (Filed March 2011)
- Spatiotemporal scaffold designs for morphogens fields (Filed June 2011)
- Light-actuated protein nanoparticles for therapy (Filed Apr 2012)
- Photoactivated gold nanoparticles for cancer therapy (Filed June 2012)

Trainees, Bachelors

2011 Or Gadish, Senior Design Thesis, Harvard University 2011 'Hoopes award'
2010 Tristan Hunt, Honors Thesis, Notre Dame University 2010

Bibliography

(Total publications 32: 19 peer-reviewed studies, 6 review articles, 7 book chapters & proceedings**)**

Peer-reviewed Research Articles

1. Bencherif SA, Sands WR, Bhatta D, Arany P, Verbeke CS, Edwards DA and Mooney DJ. Injectable preformed scaffolds with shape-memory properties. Proceedings of National Academy of Sciences 2012 PMID:23150549
2. Hassanein AH, Clune JE, Mulliken JB, Arany PR, Rogers GF, Kulungowski AM, Greene AK. Effect of calvarial burring on resorption of onlay cranial bone graft. J Craniofac Surg. 2012, 23; 5; 1495-1498. PMID:22976644
3. Hassanein AH, Arany PR, Couto RA, Clune JE, Glowacki J, Rogers GF, Mulliken JB, Greene AK. Cranial particulate bone graft ossifies calvarial defects by osteogenesis. Plast Reconstr Surg. 2012, May; 129 (5): 796e-802e. PMID:22544110
4. Yuen WW, Du NR, Shvartsman D, Arany PR, Lam H, Mooney DJ. Statistical platform to discern spatial and temporal coordination of endothelial sprouting. Integr Biol 2012, 1; 4; 3; 292-300. PMID: 22318325
5. Kim WS, Mooney D, Arany PR, Lee K, Huebsch N, Kim J. Adipose Tissue Engineering using injectable, oxidized alginate hydrogels. Tissue Eng Part A 2012, 18 (7-8): 737-743. PMID: 22011105
6. Hassanein AH, Greene AK, Arany PR and Padwa BL. Intraoperative cooling of Iliac bone graft: An experimental evaluation of cell viability. J Oral Maxillofac Surg 2012, 70(7): 1633-5. PMID:2197871
7. Chen AC*, Arany PR*, Tompkinson EM, Saleem T, Mooney DJ, Yull FE, Blackwell TS, Hamblin MR. Low level light therapy activates NF-kB via generation of reactive oxygen species in mouse embryonic fibroblasts. PLOS One 2011;6(7):e22453 (*Equal contributions) PMID:21814580
8. Clune JE, Mulliken JB, Glowacki J, Arany PR, Rogers GF, Kulungowski AM and Greene AK. Autologous Cranial particulate bone graft for onlay cranioplasty - An experimental evaluation. Journal of Craniofacial Surgery 2011; 22; 1; 319-323. PMID: 21239926

9. Huesbsch N, Arany PR, Mao A, Rivera-Feliciano J and Mooney DJ. Extracellular Matrix Mechanics Affect Stem Cell Lineage in 3D by Controlling Integrin Binding. Nature Materials 2010; 9; 518-526. PMID:20418863
10. Cao L, Arany PR, Kim J, Rivera-Feliciano J, Wang YS, Zhiheng He, Rask-Madsen C, King GL and Mooney DJ. Modulating Notch Signaling to Enhance Neovascularization and Reperfusion in Diabetic Mice Biomaterials 2010; 31; 34; 9048-56. PMID:20800279
11. Clune JE, Mulliken JB, Glowacki J, Rogers GF, Arany PR, Kulungowski AM and Greene AK. Inlay Cranioplasty - An experimental comparison of particulate versus bone dust. Plastic and Reconstructive Surgery 2010; 126, 4, 1311-1319. PMID: 20885252
12. Cao L, Arany PR, Wang YS and Mooney OJ. Promoting Angiogenesis via Manipulation of VEGF responsiveness with Notch Signaling. Biomaterials 2009; 30; 25; 4085-4093. PMID:19481797
13. Flanders KC, Ho BM, Arany PR, Stuelten C, Mimura M, Paterniti MO, Sowers A, Mitchell JB and Roberts AB. Absence of Smad3 Induces Neutrophil Migration following Cutaneous irradiation: Possible Contribution to Subsequent Radioprotection. Am J Patho1 2008; 173; 1; 68-76. PMID:18502822
14. Arany PR, Flanders KC, DeGraff W, Cook J, Mitchell JB and Roberts AB. Absence of Smad3 confers radioprotection through modulation of ERK MAPK in primary dermal fibroblasts. Journal of Dermatological Science 2007; 48; 1; 35-42. PMID:17624738
15. Hudson TS, Hartle 0, Hurstings S, Nunez N, Perkin S, Young S, Arany PR, Green JE. Inhibition of Prostate Cancer Growth by Resveratrol and Muscadine Grape Skin Extract Through Distinct Mechanisms. Cancer Research 2007; 67; 17; 8396-8405. PMID:17804756
16. Arany PR, Nayak RS, Hallikerimath S, Limaye AM, Kale AD and Kondaiah P. Activation of Latent TGF-β1 by low power laser in vitro correlates with increased TGF-β1 levels in laser enhanced oral wound healing. Wound Repair and Regeneration 2007; 15; 6; 866-874. PMID:18028135
17. Arany PR, Rane S and Roberts AB. Smad3 deficiency inhibits v-Ras induced transformation by suppression of JNK MAPK and increased farnesyl transferase inhibition. Oncogene 2008; 27; 17; 2507-2012. PMID:17952112
18. Arany PR, Flanders KC, Kobayashi T, Kuo CK, Stuelten CH, Desai K, Tuan R, Rennard SI and Roberts AB. Smad3 deficiency alters key structural elements of the extracellular matrix and the mechanotransduction of wound closure. Proceedings of National Academy of Sciences 2006, 103; 24; 9250-9255. PMID:16754864
19. Stuelten CH, Byfield SO, Arany PR, Karpova TS, Stetler-Stevenson WG, Roberts AB. Breast cancer cells induce stromal fibroblasts to express MMP-9 via secretion of TNF-α and TGF-β. Journal of Cell Sciences 2005; 118; 10; 2143-53. PMID:15855236

Peer-reviewed Review Articles

20. Hahm E, Kulhari S and Arany PR. Targeting the pain, inflammation and immune response axis: plausible rationale for LLLT. ***Photomedicine and Laser Medicine*** 2012 DOI 10.1515/plm-2012-0033
21. Arany PR. Photobiomodulation: Poised form the *Fringes* ***Photomed Laser Surg.*** 2012, 30; 9:507-509. PMID:22779706
22. Arany PR. Laser Photobiomodulation: Models and Mechanisms. ***Journal of Laser Dentistry*** 2011; 19; 2; 231-237.

23. Arany PR and Mooney DJ. At the edge of translation - Materials to program cells for directed differentiation. ***Oral Diseases*** 2011, 17; 3; 241-251 PMID: 20860763
24. Arany PR and Tai-Lan Tuan. Targeted Approaches to Scar Management Based on Our Current Understanding of Triggers, Modulators, and Effectors of Aberrant Healing. ***Advances in Wound Care*** 2010 DOI: 10.1089=awc.2010.0271
25. Hunt T, Hahm E and Arany PR "Low power lasers in Dental management of Pain and Inflammation" ***Lasers*** 2010, 2, 6.

Book Chapters and Proceedings

26. Arany PR, Huang GX, Kim WS. Multi-phasic roles of TGF-betas in scarring: implications for therapeutic interventions. Chapter in book entitled ***Chronic Inflammation: Molecular Pathophysiology, Nutritional and Therapeutic Implications*** by Roy S, Cenveo Publishers 2012.
27. Giubellino A and Arany PR "Grb2 and other adaptor proteins in tumor metastasis" chapter in Signal Transduction in Cancer Metastasis, Series: *Cancer Metastasis - Biology and Treatment*, Editors: Wen-Sheng Wu and Chi-Tan Hu, Vol. 15, 1st Edition, 480 p, 2010 Fall
28. Arany PR 'Photobiomodulation by low power laser irradiation involves activation of latent TGF-β1' chapter in ***Light Activated Tissue Regeneration and Therapy***, Editors: Ron Waynant and Darrell Tata, Springer USA 2008.
29. Arany PR, Chen AC, Hunt T, Mooney DJ and Hamblin MR 'Role of ROS-mediated TGF beta activation in Laser Photobiomodulation' in Mechanisms for Low-Light Therapy IV, Editors: Michael R. Hamblin, Ronald W. Waynant, Juanita Anders, ***Proc. of SPIE*** Vol. 7165, 71650C.
30. Chen AC, Arany PR, Huang Y,Tomkinson EM, Saleem T, Yull FE, Blackwell TS, Hamblin MR 'Low Level Laser Therapy activates NF-kB via Generation of Reactive Oxygen Species in Mouse Embryonic Fibroblasts' in Mechanisms for Low-Light Therapy IV, Editors: Michael R. Hamblin, Ronald W. Waynant, Juanita Anders, ***Proc. of SPIE*** Vol. 7165, 71650B
31. Chen AC, Huang Y, Arany PR, Hamblin MR 'Role of Reactive Oxygen Species in Low Level Light Therapy.' In Mechanisms for Low-Light Therapy IV, Editors: Michael R. Hamblin, Ronald W. Waynant, Juanita Anders, ***Proc. of SPIE*** Vol. 7165, 716502
32. Arany PR 'Introduction to Laboratory Analyses in Oral and Maxillofacial Pathology', Appendix in ***Schafer's Textbook of Oral and Maxillofacial Pathology***, Editors: R Rajendran and B Sivapathasundharam, 5th Edition, Elsevier, India 200.