

Publications funded by SysCODE or aligned with the goals

April 2009 – March 2010

Tooth Germ Design and Engineering

1. Apc inhibition of Wnt signaling regulates supernumerary tooth formation during embryogenesis and throughout adulthood. Wang XP, O'Connell DJ, Lund JJ, Saadi I, Kuraguchi M, Turbe-Doan A, Cavallesco R, Kim H, Park PJ, Harada H, Kucherlapati R, **Maas** RL. Development. 2009 Jun;136(11):1939-49. [PMC2680115](#)
2. Genetic interactions between Pax9 and Msx1 regulate lip development and several stages of tooth morphogenesis. Nakatomi M, Wang XP, Key D, Lund JJ, Turbe-Doan A, Kist R, Aw A, Chen Y, **Maas** RL, Peters H. Dev Biol. 2010 Feb 1. PMID: 20123092
3. Vitrification and levitation of a liquid droplet on liquid nitrogen. Song YS, Adler D, Xu F, Kayaalp E, Nureddin A, Anchan RM, **Maas** RL, **Demirci** U. Proc Natl Acad Sci U S A. 2010 Mar 9;107(10):4596-600. [PMC2826340](#)

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4. Mechanical control of tissue and organ development. Mammoto T. and **Ingber** DE. Development. 2010 May;137(9):1407-20. Review. [PMC2853843](#)
5. Protein identification with spectrum-specific p-values. V. Spirin, A. Shpunt, J. Seebacher, M. Gentzel, A. Shevchenko, S. **Gygi**, S. **Sunyaev**, 2010 Molecular and Cellular Proteomics (submitted)
6. Viscoelastic indentation of extremely soft biological tissues. Adams WJ, O'Grady ML, Ghosh K, Gibbs AD, Geisse NA, O'Connell DJ, **Maas** RL, **Ingber** DE and Parker KK. Biomaterials. (submitted)
7. Network-based inference of relative transcription factor abundance from complex proteomic data using SNIPE. Nusinow D, Kiezun A, O'Connell DJ, Mammoto T, **Ingber** DE, **Maas** RL, Gygi S and **Sunyaev** S. PLoS Comp. Biol (submitted)
8. Microfluidics-integrated time-lapse imaging for analysis of cellular dynamics. Dirk R. Albrecht, Gregory H. Underhill, Joshua Resnikoff, Avital Mendelson, Sangeeta N. **Bhatia** and Jagesh V. **Shah**. Integrative Biology 2010 (In press)

Pancreatic Islet Design and Engineering

9. A small molecule that directs differentiation of human ESCs into the pancreatic lineage. Chen S, Borowiak M, Fox JL, Maehr R, Osafune K, Davidow L, Lam K, Peng LF, Schreiber SL, Rubin LL, **Melton** D. Nat Chem Biol. 2009 Apr;5(4):258-65. PMID:19287398.
10. Small molecules efficiently direct endodermal differentiation of mouse and human embryonic stem cells. Borowiak M, Maehr R, Chen S, Chen AE, Tang W, Fox JL, Schreiber SL, **Melton** DA. Cell Stem Cell. 2009 Apr 3;4(4):348-58. PMID:19341624.
11. Insulin signaling in alpha cells modulates glucagon secretion in vivo. Kawamori D, Kurpad AJ, Hu J, **Liew** CW, Shih JL, Ford EL, Herrera PL, Polonsky KS, McGuinness OP, **Kulkarni** RN. Cell Metab. 2009 Apr; 9(4): 350-61. [PMC2694613](#)
12. Mutations at the BLK locus linked to maturity onset diabetes of the young and b-cell dysfunction. Borowiec M, Liew CW, Thompson R, Boonyasrisawat W, Hu J, Mlynarski WM, El Khattabi I, Kim SH, Marselli L, Rich SS, Krolewski AS, Bonner-Weir S, Sharma A, Sale M, Mychaleckyj JC, **Kulkarni** RN, Doria A.. Proc Natl Acad Sci USA, Aug 2009 106(34):14460-14465. [PMC2732833](#)
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14. Insulin signaling in α -cells modulates glucagon secretion in vivo. Kawamori D, Kurpad AJ, Hu J, Liew CW, Shih JL, Ford EL, Herrera PL, Polonsky KS, McGuinness OP, **Kulkarni RN***. Cell Metabolism 9:350-361, Apr 2009. [PMC2694613](#)
15. How to make beta cells? Borowiak M, **Melton DA**. Curr Opin Cell Biol. 2009 Dec;21(6):727-32. Review. PMID:19781928
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Heart Valve Design and Engineering

21. Functional collagen fiber architecture of the pulmonary heart valve cusp. Joyce EM, Liao J, **Schoen FJ**, **Mayer JE Jr**, Sacks MS. Ann Thorac Surg. 2009 Apr;87(4):1240-9. [PMC2878658](#)
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BioEngineering

25. Cell docking in double grooves in a microfluidic channel. M. Khabiry, B.G. Chung, M. J. Hancock, H.C. Soundararajan, Y. Du, D.C. Cropek, W. Lee, A. **Khademhosseini**. Small. 2009 May;5(10):1186-94. [PMC2683980](#)
26. Applications of microscale technologies for regenerative dentistry S.A. Hacking, A. **Khademhosseini**. Journal of Dental Research, Vol. 88, No. 5, 409-421 (2009) PMID:19493883.
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32. Tissue-specific gene delivery via nanoparticle coating. Harris TJ, Green JJ, Fung PW, Langer R, Anderson DG, **Bhatia** SN. *Biomaterials*. 2010 Feb;31(5):998-1006. [PMC2796451](#)
33. From cellular mechanotransduction to biologically inspired engineering: 2009 Pritzker Award Lecture, BMES Annual Meeting October 10, 2009. **Ingber** DE. *Ann Biomed Eng*. 2010 Mar; 38(3):1148-61.PMID: 20140519
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39. Cell confinement in patterned nanoliter droplets in a microwell array. L. Kang, M.D. Brigham, M.J. Hancock, A. **Khademhosseini**. *J Biomed Mater Res A*. 2010 May;93(2):547-57. [PMC2845734](#)
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43. Controlling the porosity and microarchitecture of hydrogels for tissue engineering, N. Annabi*, J.W. Nichol*, X. Zhong, C. Ji, S. Koshy, A. **Khademhosseini**, F. Dehghani. *Tissue Engineering: Part B Reviews* (In press).

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Genomics and Proteomics

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45. ChIP-seq: advantages and challenges of a maturing technology. **Park** PJ. *Nat Rev Genet.* 2009 Oct;10(10):669-80. Review. PMID: 19736561
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