

# Stanford

---



## Charles Kwok Fai Chan

Assistant Professor of Surgery (Plastic and Reconstructive Surgery)

Surgery - Plastic & Reconstructive Surgery

 NIH Biosketch available Online

### Bio

---

#### ACADEMIC APPOINTMENTS

- Assistant Professor, Surgery - Plastic & Reconstructive Surgery
- Member, Bio-X
- Member, Institute for Stem Cell Biology and Regenerative Medicine

#### LINKS

- <http://med.stanford.edu/rejuvenativemedicine.html>: <http://med.stanford.edu/rejuvenativemedicine.html>

### Teaching

---

#### COURSES

##### 2020-21

- Advanced Immunology I: IMMUNOL 201 (Win)

##### 2019-20

- Advanced Immunology I: IMMUNOL 201 (Win)

#### STANFORD ADVISEES

##### Doctoral Dissertation Reader (AC)

Pieter Both, Amy Fan, Gunsagar Gulati

##### Postdoctoral Faculty Sponsor

Eri Takematsu

##### Doctoral Dissertation Advisor (AC)

Malachia Hoover

##### Postdoctoral Research Mentor

Eri Takematsu

### Publications

---

#### PUBLICATIONS

- **Mechanoresponsive stem cells acquire neural crest fate in jaw regeneration.** *Nature*

- Ransom, R. C., Carter, A. C., Salhotra, A., Leavitt, T., Marecic, O., Murphy, M. P., Lopez, M. L., Wei, Y., Marshall, C. D., Shen, E. Z., Jones, R. E., Sharir, A., Klein, et al  
2018
- **Method of Isolating and Transplanting the Hematopoietic Stem Cell with Its Microenvironment Which Improves Functional Hematopoietic Engraftment**  
Borrelli, M. R., Lopez, M., Gulati, G., Murphy, M. P., Sinha, R., Longaker, M. T., Weissman, I. L., Newman, A. M., Chan, C. K., Sokol, J.  
ELSEVIER SCIENCE INC.2018: E224
  - **Translational Approach Using Trimodal Manipulation of Resident Skeletal Stem Cells for Articular Cartilage Repair**  
Murphy, M. P., Koepke, L. S., Lopez, M., Ransom, R. C., Brewer, R. E., Borrelli, M. R., Marecic, O., Chan, C. F., Longaker, M. T.  
ELSEVIER SCIENCE INC.2018: S213–S214
  - **Identification of the Human Skeletal Stem Cell.** *Cell*  
Chan, C. K., Gulati, G. S., Sinha, R., Tompkins, J. V., Lopez, M., Carter, A. C., Ransom, R. C., Reinisch, A., Wearda, T., Murphy, M., Brewer, R. E., Koepke, L. S., Marecic, et al  
2018; 175 (1): 43
  - **Isolation and functional assessment of mouse skeletal stem cell lineage** *NATURE PROTOCOLS*  
Gulati, G. S., Murphy, M. P., Marecic, O., Lopez, M., Brewer, R. E., Koepke, L. S., Manjunath, A., Ransom, R. C., Salhotra, A., Weissman, I. L., Longaker, M. T., Chan, C. F.  
2018; 13 (6): 1294–1309
  - **Improving immune-vascular crosstalk for cancer immunotherapy** *NATURE REVIEWS IMMUNOLOGY*  
Huang, Y., Kim, B. S., Chan, C. K., Hahn, S. M., Weissman, I. L., Jiang, W.  
2018; 18 (3): 195–203
  - **Where Hematopoietic Stem Cells Live: The Bone Marrow Niche** *ANTIOXIDANTS & REDOX SIGNALING*  
Szade, K., Gulati, G. S., Chan, C. F., Kao, K. S., Miyanishi, M., Marjon, K. D., Sinha, R., George, B. M., Chen, J. Y., Weissman, I. L.  
2018
  - **Single-cell transcriptomics of 20 mouse organs creates a Tabula Muris.** *Nature*  
2018; 562 (7727): 367–72
  - **Prolonged survival of transplanted stem cells after ischaemic injury via the slow release of pro-survival peptides from a collagen matrix** *Nature Biomedical Engineering*  
Lee, A. S., Inayathullah, ., Lijkwan, . A., Zhao, X., Sun, W., Park, S., Hong, W. X., Parekh, M. B., Malkovskiy, A. V., Lau, E., Qin, X., Pothineni, . R., et al  
2018; 2 (2): 104–13
  - **Prrx1 Labels the Fibrogenic Fibroblast in the Ventral Dermis**  
Hu, M., Leavitt, T., Garcia, J., Ransom, R., Litzenburger, U., Walmsley, G., Marshall, C., Moore, A., Mascharak, S., Chan, C., Wan, D., Lorenz, P., Chang, et al  
WILEY.2018: A4
  - **Fibroblasts become fat to reduce scarring.** *Science*  
Chan, C. K., Longaker, M. T.  
2017; 355 (6326): 693-694
  - **Breaking Down the Barriers to Precision Cancer Nanomedicine** *TRENDS IN BIOTECHNOLOGY*  
von Roemeling, C., Jian, W., Chan, C. K., Weissman, I. L., Kim, B. Y.  
2017; 35 (2): 159-171
  - **Pharmacological rescue of diabetic skeletal stem cell niches.** *Science translational medicine*  
Tevlin, R., Seo, E. Y., Marecic, O., McArdle, A., Tong, X., Zimdahl, B., Malkovskiy, A., Sinha, R., Gulati, G., Li, X., Wearda, T., Morganti, R., Lopez, et al  
2017; 9 (372)
  - **A Novel Method of Human Adipose-Derived Stem Cell Isolation with Resultant Increased Cell Yield** *PLASTIC AND RECONSTRUCTIVE SURGERY*  
Tevlin, R., McArdle, A., Brett, E., Chung, M. T., Paik, K., Seo, E. Y., Walmsley, G. G., Duldulao, C. R., Atashroo, D., Zielins, E., Vistnes, S., Chan, C. K., Wan, et al  
2016; 138 (6): 983E-996E
  - **Enrichment of Adipose-Derived Stromal Cells for BMPRI1 Facilitates Enhanced Adipogenesis** *TISSUE ENGINEERING PART A*

- Zielins, E. R., Paik, K., Ransom, R. C., Brett, E. A., Blackshear, C. P., Luan, A., Walmsley, G. G., Atashroo, D. A., Senarath-Yapa, K., Momeni, A., Rennert, R., Sorkin, M., Seo, et al  
2016; 22 (3-4): 214-221
- **Local and Circulating Endothelial Cells Undergo Endothelial to Mesenchymal Transition (EndMT) in Response to Musculoskeletal Injury.** *Scientific reports*  
Agarwal, S., Loder, S., Cholok, D., Peterson, J., Li, J., Fireman, D., Breuler, C., Hsieh, H. S., Ranganathan, K., Hwang, C., Drake, J., Li, S., Chan, et al  
2016; 6: 32514-?
  - **Identification and characterization of an injury-induced skeletal progenitor** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Marecic, O., Tevlin, R., McArdle, A., Seo, E. Y., Wearda, T., Duldulao, C., Walmsley, G. G., Nguyen, A., Weissman, I. L., Chan, C. K., Longaker, M. T.  
2015; 112 (32): 9920-9925
  - **Assessment of the Radiation Effects of Cardiac CT Angiography Using Protein and Genetic Biomarkers** *JACC-CARDIOVASCULAR IMAGING*  
Nguyen, P. K., Lee, W. H., Li, Y. F., Hong, W. X., Hu, S., Chan, C., Liang, G., Nguyen, I., Ong, S., Churko, J., Wang, J., Altman, R. B., Fleischmann, et al  
2015; 8 (8): 873-884
  - **The role and regulation of osteoclasts in normal bone homeostasis and in response to injury.** *Plastic and reconstructive surgery*  
McArdle, A., Marecic, O., Tevlin, R., Walmsley, G. G., Chan, C. K., Longaker, M. T., Wan, D. C.  
2015; 135 (3): 808-816
  - **Identification and specification of the mouse skeletal stem cell.** *Cell*  
Chan, C. K., Seo, E. Y., Chen, J. Y., Lo, D., McArdle, A., Sinha, R., Tevlin, R., Seita, J., Vincent-Tompkins, J., Wearda, T., Lu, W., Senarath-Yapa, K., Chung, et al  
2015; 160 (1-2): 285-298
  - **Epigenetic and in vivo comparison of diverse MSC sources reveals an endochondral signature for human hematopoietic niche formation.** *Blood*  
Reinisch, A., Etchart, N., Thomas, D., Hofmann, N. A., Fruehwirth, M., Sinha, S., Chan, C. K., Senarath-Yapa, K., Seo, E., Wearda, T., Hartwig, U. F., Beham-Schmid, C., Trajanoski, et al  
2015; 125 (2): 249-260
  - **Positive Selection for Bone Morphogenetic Protein Receptor Type-IB Promotes Differentiation and Specification of Human Adipose-Derived Stromal Cells Toward an Osteogenic Lineage** *TISSUE ENGINEERING PART A*  
McArdle, A., Chung, M. T., Paik, K. J., Duldulao, C., Chan, C., Rennert, R., Walmsley, G. G., Senarath-Yapa, K., Hu, M., Seo, E., Lee, M., Wan, D. C., Longaker, et al  
2014; 20 (21-22): 3031-3040
  - **Abstract 161: identification of cell-intrinsic mechanisms and differentially regulated genetic pathways responsible for the age-related functional decline in aged skeletal stem cells.** *Plastic and reconstructive surgery*  
McArdle, A., Chan, C., Seita, J., Senarath-Yapa, K., Hu, M., Walmsley, G. G., Zielins, E., Atashroo, D., Tevlin, R., Weissman, I., Longaker, M. T.  
2014; 133 (3): 178-?
  - **Osteoclast derivation from mouse bone marrow.** *Journal of visualized experiments : JoVE*  
Tevlin, R., McArdle, A., Chan, C. K., Pluvillage, J., Walmsley, G. G., Wearda, T., Marecic, O., Hu, M. S., Paik, K. J., Senarath-Yapa, K., Atashroo, D. A., Zielins, E. R., Wan, et al  
2014
  - **BLT-humanized C57BL/6 Rag2(-/-)gamma(-/)(c)CD47(-/-) mice are resistant to GVHD and develop B- and T-cell immunity to HIV infection** *BLOOD*  
Lavender, K. J., Pang, W. W., Messer, R. J., Duley, A. K., Race, B., Phillips, K., Scott, D., Peterson, K. E., Chan, C. K., Dittmer, U., Dudek, T., Allen, T. M., Weissman, et al  
2013; 122 (25): 4013-4020
  - **Clonal precursor of bone, cartilage, and hematopoietic niche stromal cells** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Chan, C. K., Lindau, P., Jiang, W., Chen, J. Y., Zhang, L. F., Chen, C., Seita, J., Sahoo, D., Kim, J., Lee, A., Park, S., Nag, D., Gong, et al  
2013; 110 (31): 12643-12648
  - **Do pluripotent stem cells exist in adult mice as very small embryonic stem cells?** *Stem cell reports*  
Miyayoshi, M., Mori, Y., Seita, J., Chen, J. Y., Karten, S., Chan, C. K., Nakauchi, H., Weissman, I. L.  
2013; 1 (2): 198-208

- **In vivo directed differentiation of pluripotent stem cells for skeletal regeneration** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Levi, B., Hyun, J. S., Montoro, D. T., Lo, D. D., Chan, C. K., Hu, S., Sun, N., Lee, M., Grova, M., Connolly, A. J., Wu, J. C., Gurtner, G. C., Weissman, et al  
2012; 109 (50): 20379-20384
- **VHL loss in renal cell carcinoma leads to up-regulation of CUB domain-containing protein 1 to stimulate PKC delta-driven migration** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Razorenova, O. V., Finger, E. C., Colavitti, R., Chernikova, S. B., Boiko, A. D., Chan, C. K., Krieg, A., Bedogni, B., LaGory, E., Weissman, I. L., Broome-Powell, M., Giaccia, A. J.  
2011; 108 (5): 1931-1936
- **Anti-CD47 Antibody Synergizes with Rituximab to Promote Phagocytosis and Eradicate Non-Hodgkin Lymphoma** *CELL*  
Chao, M. P., Alizadeh, A. A., Tang, C., Myklebust, J. H., Varghese, B., Gill, S., Jan, M., Cha, A. C., Chan, C. K., Tan, B. T., Park, C. Y., Zhao, F., Kohrt, et al  
2010; 142 (5): 699-713
- **Endochondral ossification is required for haematopoietic stem-cell niche formation** *NATURE*  
Chan, C. K., Chen, C., Luppen, C. A., Kim, J., DeBoer, A. T., Wei, K., Helms, J. A., Kuo, C. J., Kraft, D. L., Weissman, I. L.  
2009; 457 (7228): 490-U9
- **Elucidation of the phenotypic, functional, and molecular topography of a myeloerythroid progenitor cell hierarchy** *CELL STEM CELL*  
Pronk, C. J., Rossi, D. J., Mansson, R., Attema, J. L., Norddahl, G. L., Chan, C. K., Sigvardsson, M., Weissman, I. L., Bryder, D.  
2007; 1 (4): 428-442