

Stanford

Sangkyun Cho

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Bio

PROFESSIONAL EDUCATION

- Ph.D., University of Pennsylvania (2018)
- B.S., Johns Hopkins University (2013)

STANFORD ADVISORS

- Joseph Wu, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Mechanosensing by the Lamina Protects against Nuclear Rupture, DNA Damage, and Cell-Cycle Arrest.** *Developmental cell*
Cho, S., Vashisth, M., Abbas, A., Majkut, S., Vogel, K., Xia, Y., Ivanovska, I. L., Irianto, J., Tewari, M., Zhu, K., Tichy, E. D., Mourkioti, F., Tang, et al
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- **Mechanosensing by the nucleus: From pathways to scaling relationships.** *The Journal of cell biology*
Cho, S., Irianto, J., Discher, D. E.
2017; 216 (2): 305–15
- **Fractal heterogeneity in minimal matrix models of scars modulates stiff-niche stem-cell responses via nuclear exit of a mechanorepressor.** *Nature materials*
Dingal, P. C., Bradshaw, A. M., Cho, S., Raab, M., Buxboim, A., Swift, J., Discher, D. E.
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- **Matrix Elasticity Regulates Lamin-A,C Phosphorylation and Turnover with Feedback to Actomyosin** *CURRENT BIOLOGY*
Buxboim, A., Swift, J., Irianto, J., Spinler, K. R., Dingal, P. P., Athirasala, A., Kao, Y. C., Cho, S., Harada, T., Shin, J., Discher, D. E.
2014; 24 (16): 1909–17
- **Manipulating the mechanics of extracellular matrix to study effects on the nucleus and its structure.** *Methods (San Diego, Calif.)*
Xia, Y., Cho, S., Vashisth, M., Ivanovska, I. L., Dingal, P. C., Discher, D. E.
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- **Tension in fibrils suppresses their enzymatic degradation - A molecular mechanism for 'use it or lose it'.** *Matrix biology : journal of the International Society for Matrix Biology*
Saini, K., Cho, S., Dooling, L. J., Discher, D. E.
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- **Nuclear mechanosensing** *Emerging Topics in Life Sciences*
Xia, Y., Pfeifer, C. R., Cho, S., Discher, D. E., Irianto, J.
2018; 2 (5): 713-725
- **Progerin phosphorylation in interphase is lower and less mechanosensitive than lamin-A,C in iPS-derived mesenchymal stem cells.** *Nucleus (Austin, Tex.)*
Cho, S., Abbas, A., Irianto, J., Ivanovska, I. L., Xia, Y., Tewari, M., Discher, D. E.
2018; 9 (1): 230–45
- **Nuclear rupture at sites of high curvature compromises retention of DNA repair factors.** *The Journal of cell biology*
Xia, Y., Ivanovska, I. L., Zhu, K., Smith, L., Irianto, J., Pfeifer, C. R., Alvey, C. M., Ji, J., Liu, D., Cho, S., Bennett, R. R., Liu, A. J., Greenberg, et al

2018; 217 (11): 3796–3808

- **Stem Cell Differentiation is Regulated by Extracellular Matrix Mechanics.** *Physiology (Bethesda, Md.)*
Smith, L. R., Cho, S., Discher, D. E.
2018; 33 (1): 16–25
- **SIRPA-Inhibited, Marrow-Derived Macrophages Engorge, Accumulate, and Differentiate in Antibody-Targeted Regression of Solid Tumors** *CURRENT BIOLOGY*
Alvey, C. M., Spinler, K. R., Irianto, J., Pfeifer, C. R., Hayes, B., Xia, Y., Cho, S., Dingal, P., Hsu, J., Smith, L., Tewari, M., Discher, D. E.
2017; 27 (14): 2065–+
- **Matrix Mechanosensing: From Scaling Concepts in 'Omics Data to Mechanisms in the Nucleus, Regeneration, and Cancer.** *Annual review of biophysics*
Discher, D. E., Smith, L., Cho, S., Colasurdo, M., García, A. J., Safran, S.
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- **Mechanosensing of matrix by stem cells: From matrix heterogeneity, contractility, and the nucleus in pore-migration to cardiogenesis and muscle stem cells in vivo.** *Seminars in cell & developmental biology*
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- **Cross-linked matrix rigidity and soluble retinoids synergize in nuclear lamina regulation of stem cell differentiation.** *Molecular biology of the cell*
Ivanovska, I. L., Swift, J., Spinler, K., Dingal, D., Cho, S., Discher, D. E.
2017; 28 (14): 2010–22
- **Mechanical signaling coordinates the embryonic heartbeat** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Chiou, K. K., Rocks, J. W., Chen, C., Cho, S., Merkus, K. E., Rajaratnam, A., Robison, P., Tewari, M., Vogel, K., Majkut, S. F., Prosser, B. L., Discher, D. E., Liu, et al
2016; 113 (32): 8939–44
- **Tight coupling between nucleus and cell migration through the perinuclear actin cap.** *Journal of cell science*
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2014; 127 (Pt 11): 2528–41