

CURRICULUM VITAE

Yuka Yokoyama

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Research Career

- 2025.4– Research Fellowships for Young Scientists (PD) at Institute of Science Tokyo,
Japan Society for the Promotion of Science (JSPS)
- 2024.12–2025.3 Visiting Researcher at University of Cambridge
- 2024.7–2024.9 Visiting Scholar at University of California, Berkeley
- 2024.4–2025.3 Research Fellowships for Young Scientists (PD) at Kyoto University,
Japan Society for the Promotion of Science (JSPS)
- 2023.4–2024.3 Research Fellowships for Young Scientists (DC2) at Kyoto University,
Japan Society for the Promotion of Science (JSPS)

Education

- Ph.D. 2024 Department of Micro Engineering, Graduate school of Engineering,
Kyoto University, Japan
- M.S. 2021 Department of Micro Engineering, Graduate school of Engineering,
Kyoto University, Japan
- B.S. 2019 Undergraduate School of Engineering Science, Faculty of Engineering,
Kyoto University, Japan

Grants

1. Overseas Research Grant FY2024, International Medical Research Foundation, 2025.12–
2027.11, Total 11,300,000 JPY.
2. Grant-in-Aid for JSPS Fellows (Grant Number JP25KJ0105), Japan Society for the Promotion
of Science (JSPS), 2025.4–2028.3, Total 2,700,000 JPY.
3. EMBO travel grant, *EMBO Workshop Limb development: Fundamental mechanisms, evolution,
disease and regeneration*, June 2024, Total 400 EUR.
4. Travel Award, *29th Congress of the European Society of Biomechanics*, July 2024, Total 400
EUR.

5. Grant for presentation at international research meeting, The Kyoto University Foundation, 2023.7, Total 350,000 JPY
6. Grant-in-Aid for JSPS Fellows (Grant Number JP23KJ1234), Japan Society for the Promotion of Science (JSPS), 2023.4–2025.3, Total 2,000,000 JPY.
7. Research expenses, Mori Manufacturing Research and Technology Foundation, 2021.4–2023.3, Total 2,000,000 JPY

Awards

1. Young Investigator Outstanding Presentation, *Division of Bioengineering, The Japan Society of Mechanical Engineers*, December 2023.
2. JSME Women of the Future Award, *The Japan Society of Mechanical Engineers*, December 2023.
3. BEST ABSTRACT AWARD, *12th Asian-Pacific Conference on Biomechanics (AP-BIOMECH) 2023*, November 2023.
4. Outstanding Presentation, *Division of Bioengineering, The Japan Society of Mechanical Engineers*, June 2023.
5. Outstanding Poster Presentation, *Division of Bioengineering, The Japan Society of Mechanical Engineers*, June 2022.
6. Graduate School of Engineering Dean's Award, *Kyoto University*, March 2022.
7. Outstanding Student Presentation, *Division of Bioengineering, The Japan Society of Mechanical Engineers*, January 2022.

Publications

1. Jike Han, Yuka Yokoyama, Taiji Adachi, Shinji Nishiwaki, “A thermal-mechanical coupling-inspired inelastic constitutive law for the growth and atrophy of biological soft tissues,” *Preprint* (2025).
DOI: 10.13140/RG.2.2.10577.65122
2. Jorik Stoop, Yuka Yokoyama, and Taiji Adachi, “Timing of resting zone parathyroid hormone-related protein expression affects maintenance of the growth plate during secondary ossification: a computational study,” *Biomechanics and Modeling in Mechanobiology* (2024).
DOI: 10.1007/s10237-024-01899-3
3. Yuka Yokoyama, Yoshitaka Kameo, Junko Sunaga, Koichiro Maki, and Taiji Adachi, “Chondrocyte hypertrophy in the growth plate promotes stress anisotropy affecting long bone development through chondrocyte column formation,” *Bone*, 182, 117055 (2024).
DOI: 10.1016/j.bone.2024.117055
4. Yuka Yokoyama, Yoshitaka Kameo, and Taiji Adachi, "Development of continuum-based particle models of cell growth and proliferation for simulating tissue morphogenesis," *Journal of*

the Mechanical Behavior of Biomedical Materials, 142, 105828 (2023).

DOI: 10.1016/j.jmbbm.2023.105828.

5. Yuka Yokoyama, Yoshitaka Kameo, Hiroshi Kamioka, and Taiji Adachi, "High-resolution image-based simulation reveals membrane strain concentration on osteocyte processes caused by tethering elements," *Biomechanics and Modeling in Mechanobiology*, 20, 2353–2360 (2021).
DOI: 10.1007/s10237-021-01511-y.

Commentary

1. Yuka Yokoyama, "High-resolution image-based simulation reveals membrane strain concentration on osteocyte processes caused by tethering elements," *"1st Author" on the website of The Japanese Society for Bone and Mineral Research*.

Presentations at International Conferences

1. Yoshitaka Kameo, Yuka Yokoyama, Taiji Adachi, "A continuum-based particle model for linking multicellular dynamics to tissue morphogenesis," *4th International Workshops on Advances in Computational Mechanics (IWACOM-IV)*, OW1-02, Kitakyushu, Japan, September 2024.
2. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Continuum-based particle modeling for elastic analysis of multicellular tissue morphogenesis," *16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics*, W242120, Vancouver, Canada, July 2024.
3. Yuka Yokoyama, Yoshitaka Kameo, Junko Sunaga, Koichiro Maki, Taiji Adachi, "The regulatory mechanism of long bone development through mechanical stress anisotropy promoted by chondrocyte hypertrophy," *Society for Developmental Biology 83rd Annual Meeting*, #375, Atlanta, USA, July, 2024.
4. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Simulation of growth plate development during bone morphogenesis by the one-factor model," *29th Congress of the European Society of Biomechanics*, 1120, Edinburgh, Scotland, June 2024.
5. Yuka Yokoyama, Yoshitaka Kameo, Junko Sunaga, Koichiro Maki, Taiji Adachi, "Mechanical stress analysis in the growth plate toward understanding the mechanism of long bone development," *EMBO workshop on Limb Development*, 55, Dresden, Germany, June 2024.
6. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Evaluation of the effect of a cell cycle checkpoint on multicellular tissue growth," *12th Asian-Pacific Conference on Biomechanics (AP-BIOMECH) 2023*, Kuala Lumpur, Malaysia, November 2023.
7. Jorik Stoop, Yuka Yokoyama, Taiji Adachi, "Continuum-based particle model of bone morphogenesis predicts changes in tissue shape and structure due to secondary ossification (predicting structural changes in bone morphogenesis using a particle-based model)," *ASME 2023 International Mechanical Engineering congress & Exposition (IMECE2023)*, New Orleans, USA,

October 2023.

8. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Multicellular mechanical modeling for investigating bone morphogenesis," *18th International Symposium of The Institute Network*, Tokyo, Japan, October 2023.
9. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "A simulation study reveals the effect of a cell size checkpoint on tissue mechanical behaviors," *6th Japan-Switzerland Workshop on Biomechanics*, Otaru, Japan, August 2023.
10. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Modeling and simulation of tissue growth caused by cell proliferation during morphogenesis," *28th Congress of the European Society of Biomechanics*, 316, Maastricht, the Netherlands, July 2023.
11. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Computational analysis of tissue mechanical behaviors according to cell proliferation during morphogenesis," *RIKEN BDR Symposium 2023*, P-53, Kobe, Japan, March 2023.
12. Taiji Adachi, Yuka Yokoyama, Hiroshi Kamioka, Yoshitaka Kameo, "Image-based Simulation Study on Mechanosensing Amplification Mechanism at Osteocyte Processes in Bone Canalicular Space," *15th World Congress on Computational Mechanics and 8th Asian Pacific Congress on Computational Mechanics (WCCM-APCOM2022)*, p. 712, Yokohama, Japan (online), July 2022.
13. Yuka Yokoyama (Invited), Yoshitaka Kameo, Taiji Adachi, "Mechanical modeling of multicellular growth for computer simulation of bone morphogenesis," *9th World Congress of Biomechanics (WCB2022)*, O-22098, Taipei, Taiwan (hybrid), July 2022.
14. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Computer simulation of multicellular dynamics in bone morphogenesis by material point method," *The 11th Asian-Pacific Conference on Biomechanics*, PP2-102, Kyoto, Japan (on line), December 2021.
15. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Image-based analysis of flow-induced strain on the osteocyte process via tethering elements," *26th Congress of the European Society of Biomechanics*, Milan, Italy (on line), July 2021.

Invited Talks at Domestic Conferences

1. Yuka Yokoyama, Yoshitaka Kameo, Taiji Adachi, "Mathematical analysis of tissue morphogenesis caused by cell proliferation depending on the mechanical condition," *33rd Conference on Frontiers in Bioengineering (The Japan Society of Mechanical Engineers)*, 2F01, Kobe, Japan, December 2022.

Invited Lectures

1. Yuka Yokoyama, "Biomechanics in bone morphogenesis and remodeling," *Presentation in ENGR-UH 2810 Biomechanics, Program of Bioengineering, Division of Engineering, New York University Abu Dhabi*, Abu Dhabi, United Arab Emirates, March 2024.
2. Yuka Yokoyama, "Let's experience numerical simulation," *Visiting lectures for high schools*, Ishikawa, Japan, December 2021; Yamaguchi, Japan, November 2021.
3. Yuka Yokoyama, "The shape and mechanics of living things," *Lecture for high school students at Kyoto University*, Kyoto, Japan, November 2021.

Professional Societies

- 2019.3– The Japan Society of Mechanical Engineers
2021.9– European Society of Biomechanics
2022.11– The Biophysical Society of Japan

Other Activities

1. Session Organizer, *33rd Conference on Frontiers in Bioengineering (The Japan Society of Mechanical Engineers)*, OS01, Kobe, Japan, December 2022.
2. Teaching assistant, Practice of Basic Informatics (Faculty of Engineering) [Engineering Science], 2021.4–2021.7

Scholarships

1. Mori Manufacturing Research and Technology Foundation, 2021.4–2023.3, Total 4,800,000 JPY.
2. Repayment Exemption for Students with Excellent Grades, Japan Student Services Organization (JASSO) Type I (interest-free) scholarship (Exemption of half of loan), 2019.4–2021.3, Total 1,056,000 JPY.
3. CES : Kyoto U. Fund - Corporation Endowed Scholarships (NHK SPRING Co.,Ltd.), 2019.4–2021.3, Total 900,000 JPY.
4. Tokio Marine Kagami Memorial Foundation, 2016.4–2019.3, Total 1,620,000 JPY.