DAISUKE TAKAGI

Department of Mathematics
University of Hawaii at Manoa

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EDUCATION

PhD, Department of Applied Mathematics and Theoretical Physics, University of Cambridge 2007–2010
Postdoc, Courant Institute of Mathematical Sciences, New York University 2010–2012

EMPLOYMENT

Cooperating Faculty of Mechanical Engineering, UHM 2020 – present
Associate Professor of Mathematics, University of Hawaii at Manoa (UHM) 2018 – present
Affiliate Faculty of Pacific Biosciences Research Center, UHM 2015 – present
Assistant Professor of Mathematics, UHM 2013 – 2018
Adjunct Instructor of Mathematics, New York University 2012

PUBLICATIONS

1. Lynch, J.B., James, N., McFall-Ngai, M., Ruby, E.G., Shin, S. and Takagi, D. (2022) Transition to confined spaces impacts bacterial swimming and escape response. *Biophys. J.*.
2. Byron, M.L., Murphy, D.W., Katija, K., Hoover, A.P., Daniels, J., Garayev, K., Takagi, D., Kanso, E., Gemmell, B.J., Ruszczyk, M. and Santhanakrishnan, A. (2021) Metachronal motion across scales: current challenges and future directions. *Integrative and Comparative Biology*, 1–15.
3. Tomiyama, J. M., Takagi, D.and Kantar, M. B. (2020) The effect of acute and chronic food shortage on human population equilibrium in a subsistence setting. *Agriculture & Food Security* 9, 1–12.
4. Joo, S., Jung, S. Lee, S., Cowie, R. H. and Takagi, D. (2020) Freshwater snail feeding: lubrication-based particle collection on a free surface. *J. R. Soc. Interface* 17, 20200139.
5. Niimoto, K., Kuball, K. J., Block, L. N., Lenz, P. H. and Takagi, D. (2020). Rotational maneuvers of copepod nauplii at low Reynolds number. *Fluids* 5(2), 78.
6. Takagi, D. and Strickler, J. R. (2020) Active hydrodynamic imaging of a rigid spherical particle. *Sci. Rep.* 10, 2665.
7. Hayashi, R. and Takagi, D. (2020) Metachronal swimming with rigid arms near boundaries. *Fluids* 5(1), 24.
8. Tuttle, L. J., Robinson, H. E., Takagi, D., Strickler, J. R., Lenz, P. H. and Hartline, D. K. (2019) Going with the flow: Hydrodynamic cues trigger directed escapes from a stalking predator. *J. R. Soc. Interface* 16, 20180776.
9. Krasky, D. and Takagi, D. (2018) Diffusion of swimmers jumping stochastically between multiple velocities. *J. Stat. Mech. Theory Exp.* 10, 103201.
10. Bonnard, B., Chyba, M., Rouot, J., and Takagi, D. (2018). Sub-Riemannian geometry, Hamiltonian dynamics, micro-swimmers, copepod nauplii and copepod robot. *Pacific Journal of Mathematics for Industry* 10(1), 2.
11. Hynson, N. A., Frank, K. L., Alegado, R. A., Amend, A. S., Arif, M., Bennett, G. M. Jani, A. J., Medeiros, M. C. I., Mileyko, Y., Nelson, C. E., Nguyen, N. H., Nigro, O. D., Prisic, S., Shin, S., Takagi, D., Wilson, S. T. and Yew, J. Y. (2018) Synergy among microbiota and their hosts: Leveraging the Hawaiian archipelago and local collaborative networks to address pressing questions in microbiome research, *MSystems* 3(2), e00159-17.

12. Takagi, D. and Hartline, D. K. (2018) Directional hydrodynamic sensing by free-swimming organisms, *Bull. Math. Biol.* 80, 215–227.
13. Hayashi, R. and Takagi, D. (2017) Asynchronous oscillations of rigid rods drive viscous fluid to swirl, *Phys. Rev. Fluids* 2(12), 124101.
14. Chyba, M., Takagi, D., Kravchenko, Y. and Markovichenko, O. (2017) Analysis of efficient strokes for multi-legged microswimmers, *Proc. IEEE Conf. Control Tech. App.*
15. Bonnard, B., Chyba, M., Rouot, J. and Takagi, D. (2016) A numerical approach to the optimal control and efficiency of the copepod swimmer, *Proc. 55th IEEE Conf. Dec. Contr.*
16. Cardiel, J. J., Takagi, D., Tsai, H. and Shen, A. Q. (2016) Formation and flow behavior of micellar membranes in a T-shaped microchannel, *Soft Matter*, 12, 8226–8234.
17. Lenz, P. H., Takagi, D. and Hartline, D. K. (2015) Choreographed swimming of copepod nauplii, *J. Roy. Soc. Interface* 12, 20150776.
18. Takagi, D. (2015) Swimming with stiff legs at low Reynolds number, *Phys. Rev. E*, 92, 023020.
19. ten Hagen, B., Wittkowski, R., Takagi, D., Kümmel, F., Bechinger, C. and Löwen, H. (2015) Can the self-propulsion of anisotropic microswimmers be described by using forces and torques?, *J. Phys. Condens. Matter*, 27, 194110.
20. ten Hagen, B., Kümmel, F., Wittkowski, R., Takagi, D., Löwen, H. and Bechinger, C. (2014) Gravitaxis of asymmetric self-propelled colloidal particles, *Nat. Commun.*, 5, 4829.
21. Kümmel, F., ten Hagen, B., Wittkowski, R., Takagi, D., Buttinoni, I., Eichhorn, R., Volpe, G., Löwen, H. and Bechinger, C. (2014) Reply to "Comment on 'Circular motion of asymmetric self-propelling particles' ", *Phys. Rev. Lett.*, 113, 029802.
22. Takagi, D., Palacci, J., Braunschweig, A.B., Shelley, M.J. Zhang, J. (2014) Hydrodynamic capture of microswimmers into sphere-bound orbits, *Soft Matter* 10, 1784–1789.
23. Takagi, D., Braunschweig, A.B., Zhang, J. and Shelley, M.J. (2013) Dispersion of self-propelled rods undergoing fluctuation-driven flips, *Phys. Rev. Lett.*, 110, 038301.
24. McElwaine, J.N., Takagi, D. and Huppert, H.E. (2012) Surface curvature of steady granular flows, *Granul. Matter*, 14, 229-234.
25. McElwaine, J.N., Takagi, D. and Huppert, H.E. (2012) Steady channels and avalanches of dense granular flow down a slope, *Proc. ICTAM.*
26. Takagi, D. and Huppert, H.E. (2011) Pouring viscous fluid out of a tipped container in minimal time, *Phys. Rev. E*, 84, 035303(R).
27. Takagi, D., McElwaine, J.N. and Huppert, H.E. (2011) Shallow granular flows, *Phys. Rev. E*, 83, 031306.
28. Takagi, D. and Balmforth, N.J.(2011) Peristaltic pumping of rigid objects in an elastic tube, *J. Fluid Mech.*, 672, 219-244.
29. Takagi, D. and Balmforth, N.J. (2011) Peristaltic pumping of viscous fluid in an elastic tube, *J. Fluid Mech.*, 672, 196-218.
30. Takagi, D. and Huppert, H.E. (2010) Initial advance of long lava flows in open channels, *J. Volcanol. Geotherm. Res.*, 195, 121-126.
31. Takagi, D. and Huppert, H.E. (2010) Flow and instability of thin films on a cylinder and sphere, *J. Fluid Mech.*, 647, 221-238.
32. Takagi, D. and Huppert, H.E. (2008) Expanding volumes of channelized viscous gravity currents, *Proc. ICTAM.*
33. Takagi, D. and Huppert, H.E. (2008) Viscous gravity currents inside confining channels and fractures, *Phys. Fluids*, 20(2), 023104.
34. Takagi, D. and Huppert, H.E. (2007) The effect of confining boundaries on viscous gravity currents, *J. Fluid Mech.*, 577, 495-505.

INVITED TALKS

1. (2021) Predator-Prey Interactions Mediated by Flow Sensing, *Biofluids Symposium*, Kyoto, Japan.
2. (2021) Predator-Prey Interactions Mediated by Flow Sensing, *Okinawa Institute of Science and Technology*, Okinawa, Japan.
3. (2021) Acrobatic Maneuvers of Larval Copepods, *Society for Integrative and Comparative Biology Annual Meeting*, Washington DC.
4. (2019) Flow Sensing in Predator-Prey Interactions, Thompson Hall Science & Mathematics Seminar, *University of Puget Sound*, Tacoma, WA.
5. (2019) Modeling and experimenting with plankton-inspired robots, Society for Advancement of Chicanos/Hispanics and Native Americans in Science Conference, Honolulu, HI.
6. (2019) Flow Sensing in Predator-Prey Interactions, Mechanical Engineering Seminar, *University of Hawaii at Manoa*, Honolulu, HI.
7. (2019) Flow Sensing in Predator-Prey Interactions, NSF Workshop on Mathematical Fluids, Material and Biology, *Universith of Michigan*, Ann Arbor, MI.
8. (2019) Flow Sensing in Predator-Prey Interactions, Cornell Fluids Seminar, *Cornell University*, Ithaca, NY.
9. (2019) Plankton-inspired design of miniature robots, Biological and Environmental Engineering Research Seminar, *Cornell University*, Ithaca, NY.
10. (2018) Predator-prey interactions from the perspective of zooplankton, ISMER Seminar, *University of Quebec at Rimouski*, Rimouski, Canada.
11. (2017) Plankton-inspired robotics: modeling and experiments, Civil Engineering Seminar, *University of Hawaii at Manoa*, Honolulu, HI.
12. (2017) Hydrodynamic reception and predator avoidance in free-swimming organisms, Pacific Biosciences Research Center Seminar, *University of Hawaii at Manoa*, Honolulu, HI.
13. (2016) Hydrodynamics of copepod locomotion, feeding, and sensing, Workshop on New Aspects of Micro- and Macroscopic Flows in Soft Matters, *Okinawa Institute of Science and Technology*, Okinawa, Japan.
14. (2015) Soft matter physics of microscopic swimmers, Physics Department Colloquia, *University of Hawaii at Manoa*, Honolulu, HI.
15. (2015) Modeling lava flows in the lab: simplified theory and experiments, Geophysical Fluid Dynamics Institute Colloquium, *Florida State University*, Tallahassee, FL.
16. (2015) Microscale flow controlled by swimming larval copepods, Symposium on Small Meets Large: Connecting Microfluidics with Marine Ecology, *Okinawa Institute of Science and Technology*, Okinawa, Japan.
17. (2015) How synthetic microswimmers move, turn, flip, and spread, Mathematical Soft Matter Unit Seminar, *Okinawa Institute of Science and Technology*, Okinawa, Japan.
18. (2013) How synthetic microswimmers move, turn, flip, and spread, Conference on Frontiers in Applied and Computational Math, *New Jersey Institute of Technology*, Newark, NJ.
19. (2013) How synthetic microswimmers move, turn, flip, and spread, Biomechanics Seminar, Mechanical and Aerospace Engineering, *University of California San Diego*, San Diego, CA.
20. (2013) Engineering smart materials and devices using microscopic swimmers, College of Engineering, *University of Hawaii at Manoa*, Honolulu, HI.
21. (2013) Modeling lava flows in the lab: simplified theory and experiments, Department of Geology & Geophysics, *University of Hawaii at Manoa*, Honolulu, HI.
22. (2013) Dispersion of microscopic swimmers in biological and synthetic systems, Mathematical Biology Seminar, *University of Hawaii at Manoa*, Honolulu, HI.

23. (2012) How synthetic microswimmers move, turn, flip, and spread, Department of Geology & Geophysics, *Yale University*, New Haven, CT.
24. (2012) How synthetic microswimmers move, turn, flip, and spread, Applied Mathematics Colloquium, *University of North Carolina at Chapel Hill*, Chapel Hill, NC.
25. (2012) How synthetic microswimmers move, turn, flip, and spread, Mathematical Sciences Seminar, *Montclair State University*, Montclair, NJ.
26. (2012) Mathematical Modeling of nanoscale motors and motile microorganisms, Department of Mathematics Colloquium, *University of Hawaii at Manoa*, Honolulu, HI.
27. (2012) Dispersion of active nanorods turning and flipping spontaneously, NYU-Tulane Focused Research Group Workshop, *New York University*, New York, NY.
28. (2010) Nonlinear peristaltic waves: feeding the hungry python, Physical Mathematics Seminar, *Massachusetts Institute of Technology*, Boston, MA.
29. (2009) Viscous gravity currents, Fluid Mechanics Seminar, *University of Cambridge*, Cambridge, UK.

CONTRIBUTED TALKS

1. Pandey, A., Yuk, J., Sun, Y., Sequeira, Y., Roh, C., Lee, S., Takagi, D. and Jung, S. (2021) Interfacial pumping inspired by snails, *APS 74th Annual Meeting of the Division of Fluid Dynamics*, Phoenix, AZ.
2. Hayashi, R. and Takagi, D.(2021) Pumping and swimming robots in a highly viscous fluid, *Society for Mathematical Biology Annual Meeting*, Washington DC.
3. Takagi, D. , Joo, S., Cowie, R., Lee, S. and Jung, S. (2019) Snail feeding at the air-water interface, *APS 72nd Annual Meeting of the Division of Fluid Dynamics*, Seattle, WA.
4. Takagi, D.and Strickler, J. R. (2020) Mechanical sensing of particles enhanced by controlled agitation, *Ocean Sciences Meeting*, San Diego, CA.
5. Chang, I., Lenz, P.H., Hartline, D.K. and Takagi, D.(2020) Larval fish feeding: strategies for capturing prey, *Ocean Sciences Meeting*, San Diego, CA.
6. Hachmeister, J. and Takagi, D. (2019) Non-axisymmetric flow and sensing around copepods, *APS 72nd Annual Meeting of the Division of Fluid Dynamics*, Seattle, WA.
7. Krasky, D. and Takagi, D.(2019) Diffusion of multi-speed gear-shifting Brownian swimmers, *APS 72nd Annual Meeting of the Division of Fluid Dynamics*, Seattle, WA.
8. Takagi, D.and Strickler, J. R. (2019) Analytical model for sensing particles in unsteady flow, *International Congress on Industrial and Applied Mathematics*, Valencia, Spain.
9. Krasky, D. and Takagi, D.(2019) Diffusion of multi-speed gear-shifting Brownian swimmers, *APS March Meeting*, Boston, MA.
10. Takagi, D. and Strickler, J. R. (2019) Active sensing of particles suspended in unsteady flow, *APS March Meeting*, Boston, MA.
11. Takagi, D. and Strickler, J. R. (2018) Flow-based echolocation of silent prey, *APS 71st Annual Meeting of the Division of Fluid Dynamics*, Atlanta, GA.
12. Hayashi, R. and Takagi, D.(2018) Pumping, mixing, and swimming with oscillating arms, *APS 71st Annual Meeting of the Division of Fluid Dynamics*, Atlanta, GA.
13. Jung, S., Joo, S., Takagi, D., Lee, S. and Cowie, R. (2018) How snails collect food with a funnel-shaped foot, *18th US National Congress for Theoretical and Applied Mechanics*, Chicago, IL.
14. Takagi, D. and Hartline, D. K. (2018) Mechanics of copepod hair sensors and predator detection, *18th US National Congress for Theoretical and Applied Mechanics*, Chicago, IL.

15. Takagi, D. and Hartline, D. K. (2018) Sensing Hydrodynamic Cues and Escaping from Predators: Theoretical Strategies for Swimming Organisms and Robots, *Society for Integrative & Comparative Biology Annual Meeting*, San Francisco, CA.
16. Takagi, D. and Hartline, D. K. (2017) Hydrodynamic sensing and predator localization by free-swimming organisms, *Society for Mathematical Biology Annual Meeting*, Salt Lake City, UT.
17. Takagi, D. and Hartline, D. K. (2016) Predator localization by sensory hairs in free-swimming arthropods, *APS 69th Annual Meeting of the Division of Fluid Dynamics*, Portland, OR.
18. Takagi, D., Cardiel, J. J., Tsai, H. and Shen, A. Q. (2016) Instability of a micellar membrane in a T-shaped microchannel, *XVII International Congress on Rheology*, Kyoto, Japan.
19. Takagi, D. and Hayashi, R. (2015) Bio-inspired robotic legs drive viscous recirculating flows, *APS 68th Annual Meeting of the Division of Fluid Dynamics*, Boston, MA.
20. Takagi, D., Lenz, P.H. and Hartline, D.K. (2015) Adaptations to microscale flow: modeling copepod naupliar locomotion, *Microscale Ocean Biophysics Meeting*, Aspen, CO.
21. Takagi, D. (2015) Shrimp theorem: Paddle swimming at low Reynolds number, *APS 67th Annual Meeting of the Division of Fluid Dynamics*, San Francisco, CA.
22. Takagi, D., Palacci, J., Braunschweig, A.B., Shelley, M.J. and Zhang, J. (2014) Capturing stealthy microswimmers, *GKB Laboratory 50th Anniversary Symposium*, Cambridge, UK.
23. Takagi, D., Palacci, J., Braunschweig, A.B., Shelley, M.J. and Zhang, J. (2013) Capturing stealthy microswimmers into sphere-bound orbits, *APS 66th Annual Meeting of the Division of Fluid Dynamics*, Pittsburgh, PA.
24. Takagi, D., Palacci, J., Braunschweig, A.B., Shelley, M.J. and Zhang, J. (2013) How synthetic microswimmers move, turn, flip, and spread, *XXV IUPAP International Conference on Statistical Physics*, Seoul, Korea.
25. Takagi, D., Braunschweig, A.B., Zhang, J. and Shelley, M.J. (2012) How synthetic microswimmers move, turn, flip, and spread, *APS 65th Annual Meeting of the Division of Fluid Dynamics*, San Diego, CA.
26. Huppert, H.E., McElwaine, J.N. and Takagi, D. (2012) Steady channels and avalanches of dense granular flow down a slope, *XXIII International Congress of Theoretical and Applied Mechanics*, Beijing, China.
27. Takagi, D., Braunschweig, A.B., Zhang, J. and Shelley, M.J. (2012) How catalytic nanomotors actively move, turn, flip, and spread, *Institute of Physics Meeting on Swimming and Complexity at low Reynolds Number*, London, UK.
28. Takagi, D. and Balmforth, N.J. (2010) Peristaltic pumping in an elastic tube: feeding the hungry python, *APS 63rd Annual Meeting of the Division of Fluid Dynamics*, Long Beach, CA.
29. Takagi, D., McElwaine, J.N. and Huppert, H.E. (2009) Granular flows on unconfined slopes, *IMA Conf. on Dense Granular Flows*, Cambridge, UK.
30. Takagi, D. and Huppert, H.E. (2008) The evolution of viscous flow on a cylinder, *APS 61st Annual Meeting of the Division of Fluid Dynamics*, San Antonio, TX.
31. Takagi, D. and Huppert, H.E. (2008) Expanding volumes of channelized viscous gravity currents, *XXII International Congress of Theoretical and Applied Mechanics*, Adelaide, Australia.
32. Takagi, D., McElwaine, J.N. and Huppert, H.E. (2008) Granular flows on unconfined slopes, *European Postgraduate Fluid Dynamics Conference*, Keele, UK.
33. Takagi, D., McElwaine, J.N. and Huppert, H.E. (2008) Dense granular flows on an unconfined slope, *Gordon Research Conference on Granular and Granular-Fluid Flows*, Waterville, ME.
34. Takagi, D. and Huppert, H.E. (2007) Theoretical model for lava flows in confining channels, *American Geophysical Union Fall Meeting*, San Francisco, CA.

35. Takagi, D. and Huppert, H.E. (2006) The effect of confining boundaries on viscous gravity currents, *APS 59th Annual Meeting of the Division of Fluid Dynamics*, Tampa, FL.

GRANTS AND AWARDS

1. NSF Dynamics, Control and Systems Diagnostics Grant $588,019 — 2021–2024
   Collaborative Research: Actuating and Sensing Objects on a Free Surface
2. C-MAIKI Seed Grants $50,000 — 2018–2019
   Modeling the behavior of symbiotic bacteria and fungi
3. NSF-CBET Fluid Dynamics Grant $297,941 — 2016–2020
   Hydrodynamics of outer flow at low Reynolds numbers for locomotion and flow control
4. ARO Biomathematics Grant $288,104 — 2017–2020
   Transient dynamics of organisms responding to sudden cues
5. ARO Biomathematics STIR Grant $47,414 — 2016–2017
   Modeling the collective behavior of unsteadily swimming zooplankton
6. Faculty Teaching Award — 2017
   Awarded from the Department of Mathematics
7. Gates Cambridge Scholarship £100,000 — 2007 – 2010
   Tuition, allowance, and travel funds from the Gates Foundation
8. Geophysical Fluid Dynamics Fellowship $5,000 — 2009
   Stipend and travel allowance from the Woods Hole Oceanographic Institution

TEACHING

Visiting Lecturer, African Institute for Mathematical Sciences in South Africa — 2021
Biophysics at the Microscale (delivered remotely)

Instructor, University of Hawaii at Manoa — 2013 – present

MATH 215 Applied Calculus I	Fall 2022
MATH 305 Mathematical Modeling: Stochastic Models	Spring 2022
MATH 305L Mathematical Modeling: Stochastic Models Lab	Spring 2022
MATH 402 Partial Differential Equations	Fall 2021
MATH 215 Applied Calculus I	Fall 2021
MATH 305 Mathematical Modeling: Stochastic Models	Spring 2020
MATH 305L Mathematical Modeling: Stochastic Models Lab	Spring 2020
MATH 100 Survey of Mathematics	Fall 2019
MATH 304 Mathematical Modeling: Deterministic Models	Fall 2019
MATH 304L Mathematical Modeling: Deterministic Models Lab	Fall 2019
MATH 407 Numerical Analysis	Spring 2019
MATH 305 Mathematical Modeling: Stochastic Models	Spring 2019
MATH 305L Mathematical Modeling: Stochastic Models Lab	Spring 2019
MATH 304 Mathematical Modeling: Deterministic Models	Fall 2018
MATH 304L Mathematical Modeling: Deterministic Models Lab	Fall 2018
MATH 601 Applied Dynamical Systems	Spring 2018
MATH 307 Linear Algebra and Differential Equations	Fall 2017
MATH 241 Calculus I	Fall 2017
MATH 407 Numerical Analysis	Spring 2017
MATH 649K Applied Stochastic Processes	Fall 2016
MATH 304 Deterministic Models	Fall 2016

MATH 480 Senior Seminar	Spring 2016
MATH 216 Applied Calculus II	Spring 2016
MATH 402 Partial Differential Equations	Fall 2015
MATH 215 Applied Calculus I	Fall 2015
MATH 307 Linear Algebra and Differential Equations	Spring 2015
MATH 216 Applied Calculus II	Spring 2015
MATH 311 Linear Algebra	Fall 2014
MATH 215 Applied Calculus I	Fall 2014
MATH 649K Understanding Fluid Flow	Spring 2014
MATH 307 Linear Algebra and Differential Equations	Fall 2013
MATH 244 Calculus IV	Spring 2013

Co-Instructor, New York University 2011

MATH – UA 262 Ordinary Differential Equations	Fall 2011

Supervisor, University of Cambridge 2007 – 2009

Part II Waves	Spring 2009
Part II Fluid Dynamics	Fall 2008
Part IB Fluid Dynamics	Spring 2008
Part IA Differential Equations	Fall 2007

RESEARCH ADVISEES

Graduate Students, University of Hawaii at Manoa

Julian Hachmeister, PhD Mathematics	2016–present
Rintaro Hayashi, PhD Mechanical Engineering	2015–present
Vincent Chung, MA Mathematics	2019–2020
Don Krasky, PhD Mathematics	2016–2019
David Devine, MA Mathematics	2015–2016

Undergraduate Students, University of Hawaii at Manoa

Ben Weiss, Physics	2022
Anya Wu, Biology	2019
Kyleigh Kuball, Biology	2018
Irvin Chang, Biology	2018
Christopher Eblen, Mathematics	2017
Kacie Niimoto, Bioengineering	2017
Soyoun Joo, Mathematics	2017
Joshua Tomiyama, Mathematics	2017
Dasom Joo, Microbiology	2015
Nathan Kanekuni, Computer Science	2015
Kayleigh Nowak, Mathematics	2015
Heath Larner, Mechanical Engineering	2015
Kenton Elliot, Mathematics	2014
Stuart Kaneshiro, Mechanical Engineering	2014
Caralyn & Leanne King, Electrical Engineering	2014
Daniel Bishon, Geology & Geophysics	2013

Visiting Students

Yudai Kobayashi, Masters student in Mathematics, Chiba University, Japan	2017
Frederic Zittoun, Masters student in Engineering, University of Toulon, France	2017
Toshiya Ishikawa, PhD student in Engineering, Chuo University, Japan	2016

Atsuyoshi Muta, Undergraduate in Mathematics, Chiba University, Japan 2016
Amandin Chyba Rabeendran, High school student in Hawaii 2014–2017
Xiaohua Liu, Undergraduate in Mathematics, New York University Abu Dhabi, UAE 2012
Caroline Goblet, Masters student in Engineering, École Polytechnique in Paris, France 2011

SERVICE

Member of Undergraduate Research Opportunities Council (UROC), UH Manoa 2021–present
Served on the faculty advisory board for promoting undergraduate research across UH Manoa campus. Reviewed student funding applications for the College of Engineering, College of Natural Sciences, and School of Ocean and Earth Science and Technology.

Director of Experimental Laboratory in Mathematics, UH Manoa 2014–present
Founded a wet laboratory, the first of its kind in the Department of Mathematics at UH Manoa, to promote research and education in mathematical modeling with experiments. The laboratory accommodates graduate students and undergraduates from diverse disciplines to pursue projects in a collaborative environment. Students include women, native Hawaiian, and other minority groups that are underrepresented in STEM fields.

Outreach in Hawaii 2014–present
Supported outreach events including STOMP's Robotics Camp, Molokai Math Day, Manoa Experience, Reach for the Stars, and Atherton YMCA STEM Career Night. Attended booths on campus and advised students to share their research experiences with the broader community in Hawaii.

Member of Dissertation Committees, UH Manoa 2013–present
Served on doctoral and master's dissertation committees for mathematics and mechanical engineering departments. Served as University Representative of dissertation committees for other departments in biology, geophysics, and linguistics.

Member of Departmental Committees, UH Manoa 2013–present
Served on assessment, curriculum, graduate, hiring, mathematical biology, policy, teaching award and tutor committees. Restructured the graduate program to incorporate a new core course and qualifying exam in applied mathematics, and managed the undergraduate certificate in mathematical biology program.

Reviewer of Journals and Grant Proposals 2011–present
Reviewed manuscripts for Physical Review Letters, Physical Review E, Journal of Fluid Mechanics, Physics of Fluids, Soft Matter, New Journal of Physics, Chemical Engineering Science, Mathematical Biosciences. Reviewed grant proposals for the National Science Foundation and Human Frontier Science Program Organization.