Hungtang Ko, Ph.D.

JSMF Postdoctoral Fellow, Princeton University
Princeton, NJ
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EDUCATION

Georgia Institute of Technology, Woodruff School of Mechanical Engineering, Atlanta, GA — 8/2018—5/2022
Ph.D. in Mechanical Engineering — Atlanta, GA
Doctoral thesis: *Collective Behaviors of Insects in Fluid Environments*
Committee: David L. Hu (Chair), Daniel I. Goldman, D. Zeb Rocklin, Alexander Alexeev, Marta Hatzell

University of Pennsylvania, School of Engineering and Applied Science, Philadelphia, PA — 8/2015—5/2017
M.S. in Eng. in Mechanical Engineering and Applied Mechanics — Philadelphia, PA
Concentration: Heat Transfer, Fluid Mechanics, and Energy / Mechatronic and Robotic Systems

Fudan University, School of Mechanical and Engineering Science, Shanghai, China — 9/2011—6/2015
B.S. in Theoretical and Applied Mechanics — Shanghai, China
Concentration: Fluid Mechanics

RESEARCH

James McDonnell Foundation Postdoctoral Research Fellow — 6/2022—Present

Princeton University, Self-Organizing Swarms & Robotics — Princeton, NJ

Advisor: Radhika Nagpal Collaborator: George V. Lauder, Aimy Wissa

Funded by JSMF postdoctoral fellowship (PI: H. Ko) and a Multidisciplinary University Research Initiative (MURI) grant from ONR (co-PI R. Nagpal), my postdoctoral research focuses on the hydrodynamics of fish schools via robotic and organismal experiments.

- Published a perspective on the role of hydrodynamics in underwater collective behavior (cover of *J. R. Soc. Interface*).
- Conducted experiments and recorded 3D formation of fish schools (*Devario aequipinnatus*) for up to ten hours.
- Developed a 3D fish school tracking pipeline which integrates deep-learning-based multi-animal pose tracking (SLEAP.ai) with downstream trajectory rematching.
- Performed Particle Image Velocimetry (PIV) and force measurement of fish robots with different caudal fin shapes.
- Designed miniature fish-inspired robots to investigate emergence of collective behavior from hydrodynamic interaction.
- Implemented vision-based coordination algorithms for fish-inspired robots to maintain 3D formations.

Doctoral Research — 8/2018—5/2022

Georgia Institute of Technology, Hu Biolocomotion Lab — Atlanta, GA

Advisor: David L. Hu Collaborators: Daniel I. Goldman, Saad Bhamla

My Ph.D. study focused on the biomechanics and collective behaviors of insects. Particular attention was paid to the role of fluid environments and comparing biological collectives to soft and active materials. Experiments were performed with live insects, including fire ants (*Solenopsis invicta*) and black soldier fly larvae (*Hermetia illucens*).

- Discovered and characterized the critical size for fire ant rafts to remain stable. Modelled and theorized the stability transition to emerge from the balance between the exploratory random walk and the attractive Cheerios Effect.
- Demonstrated with experiments and simulations that fire ant rafts deform into streamlined shapes under fluid flow.
- Measured metabolic rates of fire ants as they engage in collective behaviors and as group sizes vary.

- Conducted experiments and numerical simulations to investigate the collective behavior of black soldier fly larvae in an air-fluidized bed, comparing it with the collective response of granular materials.
- Filmed and modeled the physics of wok tossing and studied biomechanics associated with chefs' upper arm motion. This study was covered in international media including CNN and in formats ranging from articles to TV interviews.
- Modeled the biomechanics of semi-aquatic springtails (Collembola) as they takeoff from the water surface.

Master's Research 10/2015—7/2017

University of Pennsylvania, Micro and Nano Fluidics Lab Philadelphia, PA

Advisor: Haim H. Bau Collaborator: David M. Raizen

My master's study focused on the biomechanics of the micro-swimmer *C. elegans* and microfluidic designs for medical research. This work is a collaboration between Penn Engineering and Penn Medicine.

- Designed, fabricated, and validated microfluidics devices to sort and measure the propulsive force of *C. elegans*.
- Discovered that *C. elegans* can sense and orient themselves with the direction of gravity, paving the way for the development of drugs that prevent imbalance and falls in older adults.

Undergraduate Thesis 9/2014—6/2015

Fudan University, Computational Fluid Dynamics Lab Shanghai, China

Thesis title: *Applying a compact high-order numerical scheme for double-diffusive convection problems.*

- Designed and adapted a high-efficiency and fidelity computational fluid dynamics (CFD) algorithm for 3D natural convection problems concerning fluids with both temperature and salinity gradients, e.g., ocean.
- Implemented parallel processing technique under FORTRAN to accelerate performance.
- Investigated effects of Rayleigh number and buoyancy ratio on flow field and heat and mass transfer efficiency.

Undergraduate Research 3/2014—6/2015

Fudan University, Traffic Flow Lab Shanghai, China

Main contribution: modeling lane-changing behavior in highway traffic as viscous effects in Newtonian fluids

- Established a new second-order PDE model that accounts for both car-following and lane-changing behaviors.
- Extracted lane-changing data from highway traffic recordings to fit model parameters.

SELECTED AWARDS AND FELLOWSHIPS

James S. McDonnell Foundation Postdoctoral Fellowship for understanding Dynamic & Multi-Scale Systems ($200,000)

Company of Biologists Traveling Fellowship: Characterizing 3D transient formations of fish schools (June 2023) (£3,000)

Santa Fe Institute Working Group: Exploring the space of bacterial motility (Mar. 2023) ($5,100)

Princeton Engineering Diversity and Inclusion Initiative: establishing robotics diversity bookshelf ($1000)

2022 Rising Stars in Soft and Biological Matter, awarded by NSF Materials Research Science and Engineering Centers (MRSEC)

2022 American Physical Society (APS) Distinguished Student Travel Grant

2022 American Physical Society (APS) Division of Biological Physics Shirley Chan Travel Grants

2016 UPenn MEAM MSE Merit Scholarship (UPenn, 4 out of all the MEAM master students, class of 2017) ($10,000)

Stars of the Undergraduate Class 2015 (Fudan University, 10 out of all students in class of 2015 ≈ 3000 ppl)

Hui-Chun Chin and Tsung-Dao Lee Chinese Undergraduate Research Endowment (Mar. 2014—Jun. 2015) (CNY 10,000 ≈ $1,400)

Baosteel's First Prize for Outstanding Students from Taiwan (2013-2014 academic year) (CNY 10,000 ≈ $1,400)

First Prize for Outstanding Students from Taiwan (2011-2012 & 2012-2013 academic year) (CNY 8,000 ≈ $1,100)

PUBLICATIONS

In preparation

1. Zhang, H., Wetherington, M. T., **Ko, H.**, FitzGerald, C. E., Nirody, J. A., Bacterial motility patterns adapt in response to spatial confinement and disorder.
2. Harrison, J., Smith, A., **Ko, H.**, Kim, B., Koh, J., Bhamla, S., Directional take-off and aerial control of ultrafast jumps in springtails and robots.
3. **Ko, H.,** Girma, A., Zhang, Y., Pan, Y., Lauder, G. V., Nagpal, R., Beyond planar: fish schools adopt ladder formations in 3D.
4. **Ko, H.**, Vanderberg, M. L., Hawkins, O., Summers, A., Nagpal, R., Donatelli, C., Vibrating with flow: flexible bodies of dead fish enable passive undulation behind obstacles.

Published

1. Ni, D., **Ko, H.**, Nagpal, R., 2024, Leader-Follower 3D Formation for Underwater Robots. *Distributed Autonomous Robotic Systems: 17th International Symposium*. Springer International Publishing
2. Ramshanker, S., **Ko, H.**, Nagpal, R., 2024. Strategic Sacrifice: Self-Organized Robot Swarm Localization for Inspection Productivity. *Distributed Autonomous Robotic Systems: 17th International Symposium*. Springer International Publishing
3. Zhang, Y., **Ko, H.**, Calicchia, M. A., Ni, R., Lauder, G. V., 2024, Collective movement of schooling fish reduces the costs of locomotion in turbulent conditions. *PLoS biology*, 22(6), e3002501.
4. **Ko H.**, Lauder G. V., Nagpal R., 2023, The role of hydrodynamics in collective motions of fish schools and bioinspired underwater robots. *Journal of the Royal Society Interface* (**Cover**), 20: 20230357
5. Saro-Cortes, V., Sedky, G., **Ko, H.**, Flammang, B., Wissa, A., 2023, Hydrodynamic Evaluation of a Flying Fish Robotic Model Organism: A Study on the Effects of the Caudal Fin Shape. *2023 IEEE Conference on Control Technology and Applications (CCTA)*, pp. 670-674.
6. Ortega-Jimenez, V. M., Challita, E.*, Kim, B.*, **Ko, H.*,** Gwon, M., Koh, J-S., Bhamla, M.S., Directional takeoff, aerial righting, and adhesion landing of semiaquatic springtails. *Proceedings of the National Academy of Sciences* 119 (46), e2211283119
7. **Ko, H.,** Hadgu, M., Komilian, K., Hu, D.L., 2022, Fire ant rafts are unstable. *Physical Review Fluids* 7 (9), 090501
8. **Ko, H.,** Yu, T., Hu, D.L., 2022. Fire ant rafts elongate under fluid flows. *Bioinspiration & Biomimetics* 17, no. 4 (June 9, 2022): 045007.
9. **Ko, H.,** Komilian, K., Waters, J.S., Hu, D.L, 2021. Metabolic scaling and thermal performance of fire ants (*Solenopsis invicta*) engaged in collective behaviors. *Biology Open* (**Cover**), 11(2), p.bio059076.
10. **Ko, H.,** Cassidy, G.J., Shishkov, O., Aydin, E., Hu, D.L, Goldman, D.I., 2021. Air-fluidized aggregates of black soldier fly larvae. *Frontiers in Physics,* 663.
11. Chen, W.*, **Ko, H.*,** Chuang, H.S., Bau, H.H. Raizen, D.M. 2021. Caenorhabditis elegans Exhibits Positive Gravitaxis. *BMC Biology,* 19(1), 1-16.
12. **Ko, H.,** Hu, D.L, 2020. The Physics of tossing fried rice. *Journal of the Royal Society Interface* (**Cover**), 17: 2019622
13. Yuan, J., **Ko, H**., Raizen, D.M., Bau, H.H., 2016. Terrain following and applications: Caenorhabditis elegans swims along the floor using a bump and undulate strategy. *Journal of the Royal Society Interface*, 13(124), p.20160612.
14. Liu, X., **Ko, H**., Guo, M., Wu, Z., 2016. A New Traffic Model on Compulsive Lane-Changing Caused by Off-ramp. *Chinese Physics B*, 25(4), p.048901
15. **Ko, H.**, Liu, X., Guo, M., Wu, Z., 2015. A New Traffic Model with a Lane-Changing Viscosity Term. *Chinese Physics B*, 24(9), p.098901

*equal contribution

INVITED SEMINARS

1. **University of Washington,** Friday Harbor Lab, WA, Aug. 8, 2024. Host: Dr Adam Summers
2. **University of Pennsylvania,** Mathematical Biology Seminar, Philadelphia, PA, Jan. 22, 2024.
3. **Harvard University,** MCZ Lunchtime Seminar, Museum of Comparative Zoology, Cambridge, MA, June 5, 2023. Host: Dr George Lauder
4. **Princeton University,** Integrated Behavioral Research Group Seminar, Dept. of Ecology and Evolutionary Biology, Princeton, NJ, Oct. 13, 2023. Host: Dr Mary Cassie Stoddard
5. **University of Pennsylvania,** Soft Matter Seminar, Dept. of Physics, Philadelphia, PA, Mar. 17, 2022. Host: Dr Arnold Mathijssen
6. **Princeton University,** Theoretical Ecology Tea Seminar, Dept. of Ecology and Evolutionary Biology, Princeton, NJ, Feb. 1, 2022. Host: Dr Corina Tarnita
7. **New York University**, Molecular Design Institute, Dept. of Chemistry, New York, NY, Nov. 15, 2022. Host: Dr Stephanie Lee
8. **University of California Berkeley**, Dept. of Mechanical Engineering, E201 Ocean Engineering Seminar Series. Virtual, March 4, 2022. Host: Dr Philip S. Marcus
9. **National Tsing Hua University**, Dept. of Mechanical Engineering Power, Hsinchu, Taiwan, Dec 30, 2021. Host: Dr Patricia Yang
10. **Academia Sinica**, Biodiversity Research Center, Taipei, Taiwan, Dec 29, 2021. Host: Dr John Wang
11. **National Taiwan University**, Graduate Institute of Applied Mechanics, Taipei, Taiwan, Dec 28, 2021. Host: Yi-Ju Chou
12. **Princeton University** Shaevitz Lab, Dept. of Physics department. Princeton, NJ, September 15, 2021. Host: Dr Joshua Shaevitz
13. **Cornell University** Collective Embodied Intelligence Lab, Dept. Electrical and Computer Engineering. Virtual, April 30, 2021. Host: Dr Kirstin Petersen
14. **Georgia Institute of Technology** Physics of living system lunch and learn, Atlanta, GA, March 4, 2021 & Sept. 12, 2019

CONFERENCE PRESENTATIONS

1. **Ko, H.,** Vandenberg, M. L., Hawkins, O., Summers, A., Nagpal, R., Donatelli, C., Vibrating with flow: flexible bodies of dead fish enable passive undulation behind obstacles. Society for Integrative and Comparative Biology National Meeting (SICB), Atlanta, GA, Jan 3-7, 2025
2. **Ko, H.,** Saro-Cortes, V., Sedky, G., Mmari, B., Ni, D., Wissa, A., Nagpal, R., BlueGuppy: a miniature free-swimming robot for studying hydrodynamic interaction among schooling fish, American Physical Society's Division of Fluid Dynamics Annual Meeting (DFD), Salt Lake City, UT, Nov 24-26, 2024
3. **Ko, H.,** Mmari, B.G., Ni, D., Nagpal, R., Designing a miniature fish robot – an aquatic analog for hexbugs. Society for Integrative and Comparative Biology National Meeting (SICB), Seattle, WA, Jan 2-6, 2024
4. Zhang, Y., **Ko, H.,** Calicchia, M.A., Ni, R., Lauder, G., Schooling fish save energy by filtering environmental turbulence. Society for Integrative and Comparative Biology National Meeting (SICB), Seattle, WA, Jan 2-6, 2024
5. Harrison, J., Smith, A., **Ko, H.**, Kim, B., Koh, J., Bhamla, S., Controlling ultrafast jumps: how furca morphology affects jump dynamics in springtails and robots. Society for Integrative and Comparative Biology National Meeting (SICB), Seattle, WA, Jan 2-6, 2024
6. **Ko, H.,** Girma, A., Zhang, Y., Nagpal, R., Lauder, G., Fish school dynamics: characterizing transient formations. American Physical Society's Division of Fluid Dynamics Annual Meeting (DFD), Washington, DC, Nov 19-21, 2023
7. Harrison, J., Smith, A., **Ko, H.**, Bhamla, S., A hinged jumping appendage helps terrestrial springtails direct their ultrafast jumps. American Physical Society Annual March Meeting (APS), Chicago, IL, March 5-10, 2023
8. **Ko, H.,** Zhang, Y., Lauder, G., Nagpal, R., Tracking transient formations of fish schools. Society for Integrative and Comparative Biology National Meeting (SICB), Austin, TX, Jan 16-31, 2023

9. **Ko, H.**, Hadgu, M., Komilian, K., Yu, T., Hu, D.L., Collective behaviors of fire ants on the water surface. Society for Integrative and Comparative Biology National Meeting (SICB), Austin, TX, Jan 16-31, 2023
10. O'Neil, J., Ortega-Jimenez, V., Zhu, X., Sehgal, P., **Ko, H.**, Bhamla, M. S., Interfacial Locomotion by Living Active Matter and Physical Analogs. AIChE Annual Meeting. Phoenix, AZ, Nov. 14, 2022
11. **Ko, H.**, Hu, D.L., Goldman, D.I., Collective behaviors of fire ant rafts and black soldier fly larvae under external flows, American Physical Society Annual March Meeting (APS), Chicago, IL, March 16, 2022 (Poster)
12. Ortega-Jimenez, V., **Ko, H.**, Bhamla, S., Skydiving acrobatics and controllable leaping redefines springtails, American Physical Society Annual March Meeting (APS), Chicago, IL, March 15, 2022
13. **Ko, H.**, Komilian, K., Hollingworth, L., Willner, E., Hu, D.L., Docking of fire ant rafts using pseudopods, American Physical Society Annual March Meeting (APS), Chicago, IL, March 15, 2022
14. **Ko, H.**, Cassidy, G.J., Shishkov, O., Aydin, E., Hu, D.L., Goldman, DI., Air-fluidized aggregates of black soldier fly larvae, Society for Integrative and Comparative Biology National Meeting (SICB), Phoenix, AZ, Jan 3-7, 2022
15. **Ko, H.**, Hadgu, M., Hu, D.L., Cheerios effect drives the formation of fire ant rafts. American Physical Society's Division of Fluid Dynamics Annual Meeting (DFD), Phoenix, AZ, Nov 21-23, 2021
16. **Ko, H.**, Komilian, K., Roe, K., Hadgu, M., Hollingworth, L., Willner, E., Hu, D.L., Morphing fire ant aggregations, Society for Integrative and Comparative Biology Regional Meeting (rSICB), Atlanta, GA, Nov 6, 2021
17. **Ko, H.**, Hadgu, M., Hu, D.L., Fire ant rafts are unstable. The 15th international symposium on distributed autonomous robotic systems (DARS) & The 4th international symposium on swarm behavior and bio-inspired robotics (SWARM), Virtual, June 1-4, 2021
18. Komilian, K., **Ko, H.**, Waters, J., Hu, D.L., Metabolism of small groups of fire ant workers scale isometrically, Society for Integrative and Comparative Biology National Meeting (SICB), Virtual, Jan 3 - Feb. 28, 2021
19. **Ko, H.**, Shishkov, O., Hu, D.L., Goldman, D.I., Simulating fluidization of black soldier larvae. American Physical Society's Division of Fluid Dynamics Annual Meeting (DFD), Virtual, Nov 21-23, 2020
20. Yu, T., **Ko, H**, Hu, D.L., Fire Ants Rafts Deform Under Uniform Flow, Society for Integrative and Comparative Biology Regional Meeting (rSICB), Virtual, Nov 13, 2020
21. Puhalla, S., **Ko, H.**, Hu, D.L., Collective movement of fire ant under various temperature environments, Society for Integrative and Comparative Biology Regional Meeting (rSICB), Virtual, Nov 13, 2020
22. Roe, K., **Ko, H.**, Hu, D.L., Dynamics of suspended ants, Society for Integrative and Comparative Biology Regional Meeting (rSICB), Virtual, Nov 13, 2020
23. Komilian, K., **Ko, H.**, Hu, D.L., Metabolism of small groups of fire ant workers scale isometrically, Society for Integrative and Comparative Biology Regional Meeting (rSICB), Virtual, Nov 13, 2020
24. **Ko, H.**, Yu, T., Hu, D.L., Streamlining in fire ant rafts (invited flash talk). IEEE International Conference on Intelligence Robots and Systems (IROS) Workshop on Robotics-Inspired Biology, Virtual, Oct 25, 2020
25. **Ko, H.**, Shishkov, O., Hu, D.L., Goldman, D.I., Fluidization of black soldier fly larvae collective. Southeast Soft Matter Symposium, Virtual, Aug 27-28, 2020
26. **Ko, H.,** Hu, D.L, Brownian motion of fire ants hinders raft formation. American Physical Society Annual March Meeting (APS), Virtual, March 3, 2020
27. **Ko, H.,** Hu, D.L, Spinning shrinking fire ant raft. American Physical Society's Division of Fluid Dynamics Annual Meeting (DFD), Seattle, WA, November 23-26, 2019
28. Puhalla. S., **Ko, H.,** Hu D.L., Stimulating fire ant aggregation, Society for Integrative and Comparative Biology Regional Meeting (rSICB), Winston-Salem, NC, October 26th, 2019
29. Morris, J., **Ko, H.,** Hu D.L., Fire ant rafts deform under uniform flow, Society for Integrative and Comparative Biology Regional Meeting (rSICB), Winston-Salem, NC, October 26th, 2019
30. **Ko, H.,** Hu D.L., Random Walk of fire ants on the water surface, Society for Integrative and Comparative Biology Regional Meeting (rSICB), Winston-Salem, NC, October 26th, 2019

31. **Ko, H.,** Hu, D.L, Fire ant raft shrinks due to fluid shear. International meeting of Physics of Living System (IPoLS), Munich, Germany, July 8-11, 2019
32. **Ko, H.,** Hu D.L. The Physics of tossing fried rice. American Physical Society's Division of Fluid Dynamics Annual Meeting (DFD), Atlanta, GA, November 18-20, 2018

TEACHING & MENTORSHIP

Teaching Practicum:

- ME 3340 Fluid Mechanics with Prof. Minami Yoda

Teaching Assistantship for Hands-on, Project-based Courses:

- PHYS/BIOL 3250 Physics of Living System with Prof. Daniel Goldman
- BIOL 4590 Research Project Lab with Prof. David Hu

Teaching Assistantship for Theory-based Graduate Courses:

- ME 8863 Interfacial Fluid Mechanics with Prof. David Hu
- MEAM 536 Viscous Fluid Flow with Prof. Paulo Arratia
- MEAM 580 Electrochemistry with Prof. Haim Bau

Center for the Integration of Research (CIRTL) Teaching & Learning Associate Certificate, Tech to Teaching Program

- Studied and practiced teaching & learning theories, focusing on active and inclusive approaches.

Undergraduate research mentorship

- Mentored 18 undergrads at Georgia Tech and Princeton University. Students came from diverse backgrounds and academic training, including Biomedical Engineering, Mechanical engineering, Computer Science, Physics, Electrical Engineering, and Industrial Engineering.
- Assisted undergrads to win Presidential Undergraduate Research Award (PURA) 7 times and travel awards for attending regional and national conferences.

Online course development for edX Robotics Micro-master Program, Penn Engineering

- Designed online exam and quiz problems with the MATLAB interface.

Full-time English teacher, Chulu junior high school, Taiwan

- Taught English and organized STEM curriculum in a rural Taiwan for a year.
- Lead mechatronics, programming, and woodwork projects in a middle school in Taiwan.
- Prepared for and delivered lectures to students with various degrees of learning abilities.

DIVERSITY AND INCLUSION:

Leading a DEI initiative funded by Princeton Engineering:

- Created a bookshelf in robotics common area with books on underrepresented groups, diverse cultures, and intersections of technology and humanity.
- Facilitate biweekly spontaneous book clubs, where participants meet and read a DEI-related book of their preference before engaging in group discussions.

Recruiting undergraduate researchers from diverse backgrounds:

- Worked with Princeton NSBE students to create an accessible and inclusive lab environment.

Citation Diversity Statement

- Included a statement at the end of the manuscript to combat implicit biases and raise awareness of underrepresentation in academia.

SERVICE

Reviewer for *J. of Experimental Biology, Physics of Fluids, IEEE Transactions on Robotics, and J. of Engineering Mechanics*

Scientific Advisory Board for 2023 Taiwan Comparative Biomechanics Symposium

OTHER PROFESSIONAL EXPERIENCES:

Fire Ant Specialist, *National Parks*, National Geographic July 2021

- Assisted in the filming and the production of a documentary segment about fire ants.

Fluid Mechanics Consultant, Georgia Aquarium, Atlanta Feb. 2020—March 2020

- Designed flow inlets, outlets and performed fluid simulations for the Jelly Fish tank exhibit.

SELECTED PRESS COVERAGE

Fire ant rafts

Article:

- Sept 16, 2022. **arsTECHNICA** "Fire ant rafts form because of the Cheerios effect, study concludes" Jennifer Ouellette (link)
- Sept 16, 2022. **POPULAR MECHANICS** "The Strange Mechanics of Fire ants" Manasee Wagh (link)
- Sept 13, 2022. **New Scientist** "Scientists discover that it takes 10 ants to form a stable raft" Karmela Padavic-Callaghan (link)
- June 8, 2022 **Myrmecological News** "Measuring metabolic scaling of fire ant structures" Patrick Krapf, Lina Pedraza, and James Trager (link)

Fluidized bed of black soldier fly larvae

Article:

- Jan. 5, 2022. **Futurity** "How to raise larvae on food scraps to feed?"
- Dec. 13, 2021. **Phys.org** "Air flow key to ensuring black soldier fly larvae thrive as a sustainable food source"

Physics of wok tossing

Op-Ed:

- Feb. 12, 2021. **Blog posts and articles from the Royal Society** "Celebrating Chinese New Year cuisine with the help of physics" (link)

Article:

- Oct. 28, 2020. **CNN** "The science behind 'the breath of a wok,' an essential ingredient in the perfect bowl of fried rice" Maggie Hiufu Wong(link)
- Feb. 28, 2020. **Sputnik News** "Arroz frito: cómo prepararlo a la perfección según la ciencia" (link)
- Feb. 26, 2020. **de Volkskrant**, Netherland newspaper "Zo werkt de natuurkunde van rijst bakken in een wok" George van Hal & Maarten Keulemans (link)
- Feb. 25, 2020. **CafeBiz, Vietnam** "Các nhà khoa học vừa chỉ ra cách lắc chảo để rang cơm ngon nhất có thể" (link)
- Feb. 25, 2020. **Gigazine, Japan** "チャーハンを炒める時の「完璧な中華鍋の振り方」を本気で研究した物理学者が登場" (link)
- Feb. 23, 2020. **Replicario, Brazil** "Físicos da Georgia Tech desvendam o segredo para aperfeiçoar o arroz frito" (link)
- Feb. 23, 2020. **arsTECHNICA** "Georgia Tech physicists unlock the secret to perfect wok-tossed fried rice" Jennifer Ouellette (link)
- Feb. 19, 2020. **DQ, Taiwan** "這一次，搞笑諾貝爾獎得主解開「黃金炒飯」的秘密" 徽徽 (link)
- Feb. 17, 2020. **Ifanr, China** "两届搞笑诺贝尔奖得主，这次找到了「黄金炒饭」的奥义" (link)
- Feb. 14, 2020. **ZME Science** "The physics of fried rice" Mihai Andrei (link)
- Feb. 12, 2020. **GIZMODO, UK** "Here's the Best Way to Make Fried Rice, According to Hungry Engineers" Ryan F. Mandelbaum (link)
- Feb. 12, 2020. **Popular Mechanics** "Use Math and Physics to Flip the Best Fried Rice" Caroline Delbert (link)
- Feb. 11, 2020. **Science News** "How to make the best fried rice, according to physics" Emily Conover (link)
- Nov. 23, 2018. **Lite News Hong Kong** "完美炒飯不簡單？美研究：每 0.32 秒要秒拋一次鑊" 陳韻詩 (link)

- Nov. 22, 2018. **India Times** “How To Cook The Perfect Fried Rice Every Single Time, According To Scientific Research” Gwyn D'Mello (link)
- Nov. 21, 2018. **ZME science** "Delicious chemistry: the science behind wok tossing" Mihai Andrei (link)
- Nov. 20, 2018. **Cosmos Magazine** "The physics of fried rice" Natalie Parletta (link)
- Nov. 20, 2018. **Atlas Obscura** "Breaking down the physics of wok tossing" Anna Kusmer (link)

Radio:

- June 1, 2020. **Utah Public Radio, UnDiscipline** “Fire And Rice” Matthew Laplante (link)
- Mar. 16, 2020. **PRX Number in the news** “.3: The secret ingredient to perfect fried rice? Physics.” Bianca Hillier (link)
- Mar. 3, 2020. **630 KHOW, iHeart Radio** “HungTang Ko (GA Tech PhD candidate) on the science of the best fried rice” Ross Kaminsky (link)
- Feb. 28, 2020. **Sveriges Radio, Sweden** “Forskare har studerat wokning – ger hopp för kockars axlar” (link)
- Feb. 25, 2020. **PRI The World** “The secret ingredient to perfect fried rice is physical” Marco Werman (link)
- Feb. 13, 2020. **3AW Breakfast, Australia** Ross Stevenson & John Burns (link)
- Feb. 12, 2020. **Deutschlandfunk, Germany** “Die Physik des Reisbratens” Frank Grotelüschen (link)
- June 11, 2019. **ABC Radio Tasmania, Australia** Jane Longhurst

TV:

- Dec. 20, 2018. **CGTN America** “Hungtang Ko discusses his research on wok tossing” Mike Walter (link)

Biomechanics of C. elegans and Microfluidic design

Article

- Sept. 30, 2021. **Phys.org** “A microscopic worm may shed light on how we perceive gravity” Melissa Pappas (link)
- Jan. 3, 2017. **Penn Today** “Penn Researchers Shed Light on the Roundworm’s Curious Swimming Behavior” Evan Lerner, Ali Sundermier (link)