

Service Statement – Chen Li, Johns Hopkins University

Service is an essential part of the enterprise of our universities and the larger scientific communities. I have actively participated in such service since I was a postdoc. Below I summarize my main service contributions to the JHU community and my professional communities. More can be found in my CV.

Service at Johns Hopkins University

Graduate Admission

A major service I have done to my department is to serve on the Graduate Admission Committee since Fall 2016 (for 7 years so far and continuing), leading application review and candidate recruitment efforts for both the Systems, Modeling & Control and Robotics research areas. I reviewed a total of 850 MSE applicants (98, 112, 133, 156, 121, 111, 119 applicants in 2017-2023, respectively) and a total of 964 non-admitted PhD applicants for MSE admission (111, 112, 166, 126, 151, 136, 162 applicants in 2017-2023, respectively). I organized these two areas' "Deep Dive" faculty research presentations during each year's graduate visit day to recruit PhD applicants. I also reviewed 18 applications for Distinguished Departmental Fellowship (6 and 12 candidates in 2022 and 2023) and 4 applications for Percy Pierre Fellowship in 2023.

Faculty Search

I served on my department's robotics area faculty search committee three times. In these searches, I reviewed the applications, participated in interviews of the short-listed candidates, and engaged with the candidates during campus interviews. One of these searches resulted in the successful hire of Jeremy Brown. Another one resulted in an offer that was declined, and the third one was halted by the Dean due to financial constraints. Through these experiences as a junior faculty member, I better understood and appreciated the culture of the ME department, with a strong emphasis on fundamental engineering science, research leadership, and collegiality, as well as how the faculty hiring process works and how we identify and recruit future leaders.

Miscellaneous

I have served on the Department Seminar Committee since 2017, leading the nomination and selection of seminar speakers in both the Systems, Modeling & Control and Robotics areas, and occasionally assisting with seminar scheduling and hosting logistics. I also served on a number of other committees in my department, Laboratory for Computational Sensing & Robotics that I am affiliated with, and Whiting School of Engineering (see CV).

Academic Service

Since 2016, I have served as academic advisor for 53 students at Hopkins, including 21 ME undergraduates, 15 ME master students, and 17 Robotics master students. I meet with each student once every semester (or sometimes via zoom or emails) to discuss course selection, overall degree plan, academic performance, intellectual interests, career plans, lab and industry research internships, and job searches. I also served on doctoral dissertation and master thesis committees and qualification exam committees for 8 students.

Educational Outreach to Broader Participation

At Hopkins, I have led or participated in a variety of educational outreach activities to serve the K-12 education communities and the general public. These include hosting multiple lab tours, present research at local museum events, producing educational videos for elementary schools, and giving virtual research presentation to high school students robotics clubs. These activities have reached over 360 students and their families, a large portion of whom are from under-represented, under-served communities in the Baltimore metropolitan area.

My PhD students and I have also made significant efforts to make our research accessible to a broader audience. We regularly turn our published work into short summaries with simple visualizations and post them on my lab website (<https://li.me.jhu.edu/research/>) and, more recently, into short talks (<https://www.youtube.com/@terradynamicslab>), and I increasingly use social media (Twitter and LinkedIn)

to draw attention to them. These resources have helped interested young students understand what we do and how learning STEM and doing research can empower one to help increase human knowledge and eventually lead to practical impact for society.

Professional Service

Conference Organization

A major effort I have made in serving my professional communities is to facilitate the interaction and collaboration of researchers across disciplines. The field of locomotion and movement science is highly interdisciplinary and requires integration of diverse expertise across biology, engineering, applied math, and physics. However, many researchers around the world still mainly specialize in their respective areas of locomotion. Closer interactions and collaborations across these fields in recent years have facilitated progress and enabled major discoveries in biological and robot locomotion in complex environments (including my own work). Because I was trained at the interface of biology, engineering, and physics and I take an integrative approach by cutting across boundaries, I deeply appreciate and understand the opportunities and challenges in integrating these related but different research communities. Thus, I am in a unique position to facilitate such interaction and collaboration across these disciplines.

To this end, since my postdoc and especially after joining Hopkins in 2016, I have co-organized a total of 10 conference sessions, workshops, and symposiums to bring researchers in different fields with interests in animal and robot locomotion together to facilitate exchange of ideas and discussion of collaborations. These workshops have spanned across major conferences in my fields, including 5 Robophysics Focus Sessions at American Physical Society March Meetings since 2019, 4 Robotics-inspired Biology Workshops at IEEE International Conference on Robotics and Automation (ICRA) in 2015 and 2023 and IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) in 2017 and 2020, and a Symposium on Mechanics in Biology at National Congress for Theoretical and Applied Mechanics in 2018. In particular, I lead the organization of Robophysics Focus Session at APS since 2019 and grew it from the initial 2 sessions (~25 talks) in 2019 to an average of 4 sessions (~50 talks) over the last four years. Now Robophysics is one of the most popular sessions at APS March Meeting.

Journal Editorship

In January 2022, I was selected to serve as Associate Editor for IEEE Robotics & Automation Letters, to handle review of manuscripts in the biomimetic systems area. So far, I have handled 9 manuscripts. My responsibilities are mainly to screen the manuscript, identify suitable reviewers with directly relevant expertise, communicate with them to secure reviews, synthesize reviews into an editor's summary, and make recommendations to the Senior Editor. I also served as guest editor at other journals (see CV). By serving as an editor, I got to know the work of more researchers in my field and allied fields, and I better understood the scientific peer-review process from the other end.

Paper & Grant Reviews

Another major service I have provided to my professional community is to review papers and grant proposals. Since I was a postdoc, I have served as reviewers for 27 top journals and 7 top conferences in my fields, and I have provided a total of 101 reviews for 70 manuscripts. These include multidisciplinary journals like *Science*, *Nature*, *PNAS*, and *Nature Communications*; biology journals like *Journal of Experimental Biology*, *eLife*, and *Proceedings of the Royal Society B: Biological Sciences*; engineering journals like *Bioinspiration & Biomimetics*, *International Journal of Robotics Research*, *Science Robotics*, and *IEEE Robotics & Automation Letters*; robotics conferences like *Robotics: Science & Systems*, *ICRA*, and *IROS*; and physics journals like *Physical Review Letters*. I also reviewed 8 grant proposals for National Science Foundation in programs like Physics of Living Systems and Physiological Mechanisms & Biomechanics, as well as one proposal for Army Research Office. These experiences helped me better understand the scientific review process and get to know the work of researchers in my fields and more broadly, as well as to learn how to write strong proposals.