Youngmin Park, PhD
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October 13, 2020

ATTN: Search Committee
California Institute of Technology
Mathematics Department 253-37
1200 E. California Blvd.
Pasadena, CA 91125

Dear Members of the Search Committee,

I am applying for the Harry Bateman Instructorships in Mathematics at the California Institute of Technology. I completed a PhD in mathematics at the University of Pittsburgh, advised by G. Bard Ermentrout, and I am now a postdoc at Brandeis University, advised by Thomas G. Fai.

I am an ambitious applied mathematician who positions himself at the forefront of multidisciplinary discoveries including mathematics and biology. At Pittsburgh, I developed my mathematical repertoire by applying dynamical systems theory to reduce the dimensionality of famous neural models, aiding in novel insights into these systems. My research resulted in winning the prestigious Andrew Mellon Predoctoral Fellowship, which is awarded to doctoral students of exceptional promise and ability. I was the first math-bio student at the University of Pittsburgh to receive this award.

As a postdoc at the University of Pennsylvania, I introduced ground-breaking insights and models for data produced by the world's leading auditory labs. As a postdoc at Brandeis, I have continued to develop my abilities as an independent mathematician while contributing to multiple fields including coupled oscillators and molecular motor dynamics.

Cal Tech features top researchers who include natural sciences in their work (including mathematical physicists such as Rupert L. Frank, Alexei Kitaev, Eric Rains, and Barry Simon), but representation in neuroscience is less strong. My publication record demonstrates my ability to perform as an independent researcher in mathematical neuroscience (all recent projects were collaborative but largely independent). I bring to the table a decade's worth of experience in understanding oscillator etrainment and synchrony, and strongly believe that my presence will enhance Cal Tech's reputation in mathematical biology.

I have written papers spanning diverse topics including smooth and non-smooth dynamical systems, oscillator interactions, pattern-formation, and auditory neuroscience. As a doctoral student, my research resulted in winning the prestigious Andrew Mellon Predoctoral Fellowship, which is awarded to doctoral students of exceptional promise and ability. I was the first math-bio student at the University of Pittsburgh to receive this award.

As part of my application I include a curriculum vitae, publication list, and research statement. Please request additional details as needed, and I look forward to our correspondence.

Sincerely, Youngmin Park, PhD