



# DARTMOUTH COLLEGE

## *Postdoctoral Position in Quantum Theory for Modeling Classical Dynamical Systems*

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The Department of Mathematics at Dartmouth College invites applications for two postdoctoral appointments that can start as early as January 1, 2022. These positions will be under the direction of Professor Dimitrios Giannakis, as part of a Vannevar Bush Faculty Fellowship grant on *Quantum Theory for Spectral Analysis, Prediction, and Control of Classical Systems* ([cto.mil/news/2021-class-of-vannevar-bush-faculty-fellowship/](http://cto.mil/news/2021-class-of-vannevar-bush-faculty-fellowship/)).

Successful applicants will work on projects, each interrelated and collaborative, studying applications of quantum theory and quantum information science to building representations and computational algorithms for classical dynamical systems. Specific topics include (i) Spectral analysis techniques for dynamical systems in non-commutative spaces of observables such as Lie algebras of vector fields; (ii) Analysis of observables with spatial structure using gauge theory; (iii) Subgrid-scale modeling; (iv) Development of quantum computing algorithms for classical dynamics.

Applicants must hold (or expected to hold by the start date of their appointment) a PhD in Mathematics, Physics, or a related field, and must be within five years of receiving their degree. The ideal candidate will be highly motivated and able to work both independently and collaboratively. In addition, they will have a research background in one or more of the following subject areas: dynamical systems theory, operator theory, quantum mechanics, quantum information science, and data science. Experience in scientific programming is also preferable.

The postdoctoral appointee could have the opportunity to teach one or two ten-week courses, contingent on course availability in the Mathematics Department and teaching qualifications. Salary will be adjusted accordingly and set by the Associate Dean of the Arts and Sciences Division.

Dartmouth College, a member of the Ivy League, is located in Hanover, New Hampshire (on the Vermont border). Dartmouth has a beautiful, historic campus, located in a scenic area on the Connecticut River. Recreational opportunities abound in all four seasons. The department ([math.dartmouth.edu](http://math.dartmouth.edu)) is home to 22 tenured and tenure-track faculty members, as well as visiting faculty and postdoctoral fellows. The Department of Mathematics is in the School of Arts and Sciences, and has a strong PhD program and outstanding undergraduate majors.

The postdoctoral positions are for three years, with an initial appointment of one year, renewable contingent upon performance. Applicants should submit a curriculum vitae, thesis abstract, statement of research plans and interests, and at least three letters of recommendation. The positions will remain open until filled; applications completed by **October 31, 2021** will receive first consideration.

To initiate an application go to [www.mathjobs.org](http://www.mathjobs.org) — Position ID: [Dartmouth-QUANT #17957](#) and fill out the required application form online. General inquiries can be sent to Tracy Moloney, Department of Mathematics, Dartmouth College, 6188 Kemeny Hall, Hanover, New Hampshire 03755-3551. Specific questions on the selection process can be referred to Professor Dimitrios Giannakis ([dimitrios.giannakis@dartmouth.edu](mailto:dimitrios.giannakis@dartmouth.edu)).

Dartmouth College is an equal opportunity/affirmative action employer with a strong commitment to diversity and inclusion. We prohibit discrimination on the basis of race, color, religion, sex, age, national origin, sexual orientation, gender identity or expression, disability, veteran status, marital status, or any other legally protected status. Applications by members of all underrepresented groups are encouraged.

[math.dartmouth.edu/activities/recruiting](http://math.dartmouth.edu/activities/recruiting)

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