**From the Dean’s office**

Welcome to the fall semester and the re-start of our weekly Division of Science Gazette. For those of you who were away during the summer months, welcome back to campus. For all of you, I hope the summer was restful, productive, and rejuvenating. The restful part is over for now. This fall we are pleased to welcome two new Lecturers in Math, Eli Amzaalig and Cheikhna Diagana, both of whom have extensive City College experience under their belts as adjunct lecturers. In January Sriram Ganeshan will join us as an Assistant Professor in Physics.

We know this will be a challenging year financially, and I want to take this opportunity to thank all of you for the spirit of cooperation and collegiality with which you help me and each other work through the problems and continue to serve our students (I know this because we’ve done it before, and not that long ago!). Finally, please keep us informed of what you’re up to! Did you publish a paper? Did you get a grant? Let us know! And while I’m on that subject, congratulations to Maria Tamargo, who has just won the 2017 MBE Innovator Award (more below)!

Whoever decided that classes should begin prior to Labor Day understood the value of easing in to the fall transition with a three-day weekend after the first full week of classes. Have a great weekend.

**SAVE THE DATE**

**Division of Science Fall Faculty and Staff Meeting**
Thursday, September 14, 2017, 12:15 p.m.
MR-1

---

**Biology News**

Professor Ana Carnaval co-heads an interdisciplinary team of scientists that won a National Science Foundation Growing Convergent Research award. Twenty-two other teams nationally are recipients of the NSF’s first grants to address societal challenges through scientific collaboration. Carnaval’s collaborators include: Profs. Robert Anderson, Michael Hickerson, Jeannine Cavender-Bares, Renato J. Figueiredo and Bette A. Loisel.

The group will receive $500,000 over five years for its project “RCN: Cross-Scale Processes Impacting Biodiversity.”

CCNY-MSK Student Research Presentations
Friday, September 8, 2017, 11:00 a.m. – 3:00 p.m.
MR-801

**Chemistry and Biochemistry News cont’d**

Professor Maria Tamargo of the Department of Chemistry and Biochemistry has been selected to receive the MBE Innovator Award this year “for advancing the growth of wide bandgap II-VI semiconductors by molecular beam epitaxy and demonstrating their unique physical properties and potential novel device applications.” She will receive her award at the North American MBE Conference on October 17, 2017.

**Math News**

Join the Math Club and the Association for Women in Mathematics (AWM) for Tea Time Every Tuesday from 1:00 p.m. to 2:00 p.m. NAC 6/2708

Undergraduate Research Discussion
Thursday, September 7, 2017, 1:00 p.m.
NAC 6/106
Speaker: Pavel Javornik (CCNY Math Club)
An open get-together targeted at undergraduates interested in getting involved and working with faculty on research projects. Includes short presentations from students active in Math research, and a Q&A / informative talk about the kinds of scholarships, fellowships, funding, etc. that are out there for aspiring mathematicians.

**Physics News**

Physics Colloquium
Wednesday, September 6, 4:00 p.m. – 5:00 p.m.
MR-418N
Speaker: Pedram Roushan, Google Inc., Santa Barbara, California
Title: Spectral signatures of many-body localization of interacting photons
Abstract: Statistical mechanics is founded on the assumption that a system can reach thermal equilibrium, regardless of the starting state. Interactions between particles facilitate thermalization, but, can interacting systems always equilibrate regardless of parameter values? The energy spectrum of a system can answer this question and reveal the nature of the underlying phases. However, most experimental techniques only indirectly probe the many body energy spectrum. Using a chain of nine superconducting qubits, we implement a novel technique for directly resolving the energy levels of interacting photons. We benchmark this method by capturing the intricate energy spectrum predicted for 2D electrons in a magnetic field, the Hofstadter butterfly. By increasing disorder, the spatial extent of energy eigenstates at the edge of the energy band shrink, suggesting the formation of a mobility edge. At strong disorder, the energy levels cease to repel one another and their statistics approaches a Poisson distribution -the hallmark of transition from the thermal to the many-body localized phase. Our work introduces a new many-body spectroscopy technique to study quantum phases of matter.
Using 9 superconducting qubits, we simulate the problem of Bloch electrons on a 2D lattice subject to a perpendicularly applied magnetic field. We directly measure the energy spectrum of the system, which was first calculated by Hofstadter and resembles a butterfly.

---

Send your news to cgonzalez@ccny.cuny.edu if you would like them to be featured here.