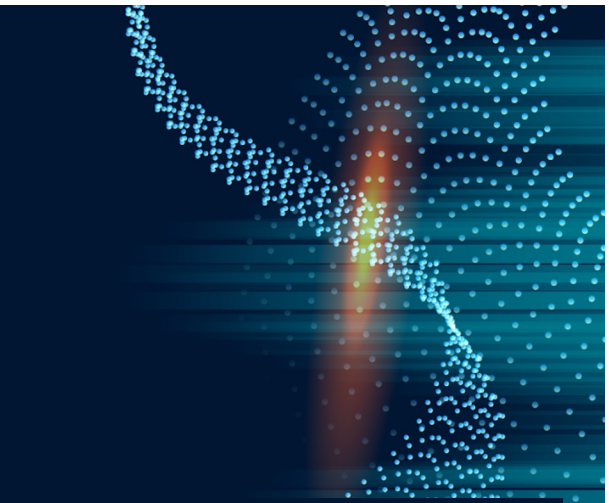
# The Center for Quantum Vibronics in Energy and Time Inaugural Workshop

## QuVET 2026
## Quantum Vibronics from Molecules to Materials

From computing and microchip fabrication to communication and encryption, quantum mechanics will fundamentally alter society. In quantum sensors and energy technologies, vibronic processes at the atomic scale - where the quantum aspects of vibrations and electrons mix - promise radical advancements.

**QuVET 2026** brings together a vibrant *community* exploring novel systems from atoms and molecules to macromolecules and materials, where vibronic properties can be observed, studied, and manipulated.

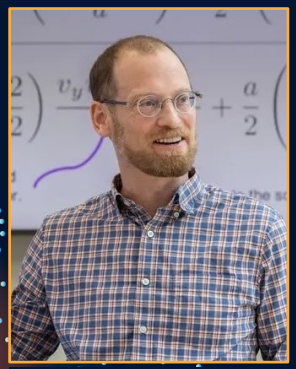
Our inaugural meeting explores vibronic theory and experiments in biological molecules, atomic systems, 2D moiré heterostructures and spin systems, highlighting optical and optoelectronic tools and techniques required to unravel subtle quantum vibronic effects in these systems.



**Join us in-person:**
Washington, D.C.
The UCDC
(ucdc.edu)
Jan. 27 – 28, 2026

**Join us via Zoom**:
https://ucr.zoom.us/my/quvetquantum
Password: quantum

# QuVET 2026 Presenters



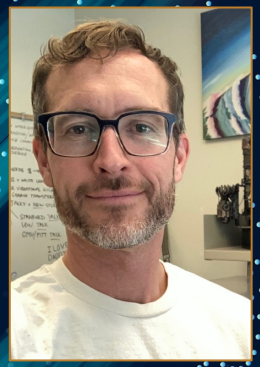
Ben Lev
(Stanford)

Elaine Li
(UT Austin)

Fang Liu
(Stanford)

Yuan Ping
(UW Madison)

Gregory Scholes
(Princeton)



Nathaniel Gabor
(UC Riverside)

Xiaoyang Zhu
(Columbia)

Gabriela Schlau-
Cohen (MIT)

Vivek Aji
(UC Riverside)

Tim Berkelbach
(Columbia)

Garnet Chan
(Caltech)

# QuVET 2026 Agenda - Tues. Jan 27, 2026

12:30 pm* Workshop Welcome Day 1

Scope and Aim of the QuVET 2026 Meeting, Introducing the QuVET MURI

1:00 pm **Session 1:** Vibronics: The Leading Edge - Opening Presentation and Invited Session

1:00 pm Nathaniel Gabor – The [quantum] machinery of life on Earth, and elsewhere

2:00 pm Gregory Scholes – Probing vibronic dynamics using wavepacket spectroscopy
2:30 pm Benjamin Lev – Cavity-induced phonons
3:00 pm Yuan Ping – First-principles open quantum dynamics for solids

3:30 pm Afternoon Break and Workshop Discussions

4:15 pm **Session 2:** QuVET Community Session

The QuVET Community Session gives grad students, postdocs, and new faculty trainees the opportunity to present short Flash Talks on the latest vibronics research from the QuVET community

5:30pm Workshop Day 1 Ends

*All times Eastern Standard Time (EST)

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# QuVET 2026 Agenda - Wed. Jan 28, 2026

8:45 am Workshop Welcome Day 2

9:00 am **Session 3:** Vibronic effects in quantum moiré matter I - Invited Session

9:00 am Elaine Li – Phonon-assisted intervalley exciton absorption in a moiré superlattice
9:30 am Fang Liu – Photo-induced twist and untwist of moiré superlattices

10:00 am Morning Break and Workshop Discussions

10:30 am **QuVET Center Overview:** Nathaniel Gabor - Quantum vibronics in energy and time

11:00 am **Session 4:** Vibronic effects in molecular matter - QuVET PI Session

11:00 am Gabriela Schlau-Cohen – Does nuclear motion help or hurt photosynthetic energy transport
11:30 am Timothy Berkelbach - TBD
12:00 pm Garnet Chan – Quantum dynamics in the presence of anharmonicity

12:30 pm Lunch

1:30 pm **Session 5:** Vibronic effects in quantum moiré matter II - QuVET PI Session

1:30 pm Xiaoyang Zhu – Vibronic stabilization of integer and fractional charges in 2D
2:00 pm Vivek Aji – Electron-phonon coupling in moiré materials
2:30 pm Nathaniel Gabor – Vibrational cooling and hydrodynamic halos in graphene

3:00 pm Closing Discussion, Short Break and Executive Session (Start 3:30 pm)