Scientists revealed the 3D structure of a nuclear pore complex’s “ticket system,” the protein complex Gle1-Nup42 from three organisms, and showed how it ensures mRNA transport in humans.

Significance and Impact
Nuclear pore complexes (NPCs) are the “gatekeepers” between a cell’s nucleus and its main chamber; defects in transfer through them are associated with many diseases.

Research Details
- The scientists combined biochemistry and x-ray crystallography of the human Gle1-Nup42-DDX19 complex to reveal the molecular details of this step of mRNA export.

The three-dimensional structures for three proteins in the human nuclear pore complex: Gle1 (green), Nup42 (yellow), and DDX19 (pink).


Work was performed in part at Brookhaven National Laboratory