LMFDB 1.0
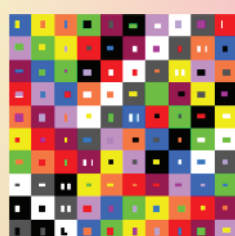# RELEASE PARTY

The L-functions and Modular Forms DataBase
AN ATLAS
TO EXPLORE THE MATHEMATICAL UNIVERSE

Tuesday, May 10, 2016
2:30 - 6:00 p.m.
Dartmouth College
006 ~~004~~ **Kemeny Hall**

All are welcome!

2:30 - 3:30 p.m.
TELESCOPES FOR MATHEMATICIANS
Drew Sutherland, MIT

High performance computing is changing the way mathematicians go about their research. Thanks to cheap parallelism and dramatically faster algorithms, we are now able to "see" objects that were once thought to be computationally inaccessible, and at a remarkable level of detail. This additional resolution allows us to formulate very precise conjectures, and, in many cases, may illuminate the path to a proof. In this talk we will focus on the computational challenges we face in research in number theory and describe some of the solutions we have obtained thus far. We will also show many of the beautiful pictures (and even videos) that we were able to make with the "telescope" that we built.
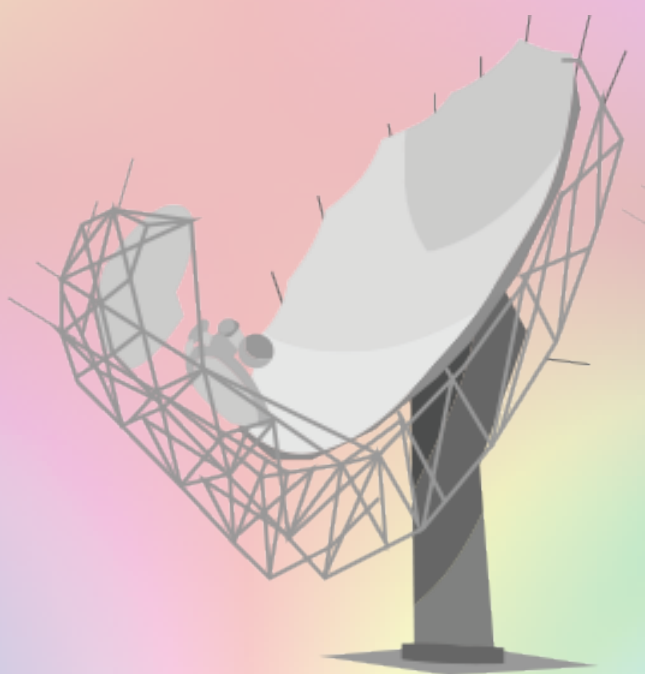
4:00 - 5:00 p.m.
LMFDB AND THE
LANGLANDS PROGRAM
John Voight, Dartmouth College

The L-Functions and Modular Forms Database (LMFDB) is an intricate catalog of mathematical objects and the connections between them. Both beautiful and functional like an atlas, the LMFDB reveals deep relationships in the abstract universe of mathematics. This database is centered on a vast web of conjectures proposed by Robert Langlands in the late 1960s, known as the Langlands Program and sometimes called the "Grand Unified Theory of Mathematics". The Langlands Program is both enormous in scope but also vague in some of its details, and the LMFDB seeks to make the predicted connections both explicit and freely browsable. In this talk, we will give an accessible and hands on introduction to the LMFDB and some of the mathematics that sits behind it.

5:00 - 6:00 p.m.
RECEPTION, 300 Kemeny Hall

LMFDB

neukom