

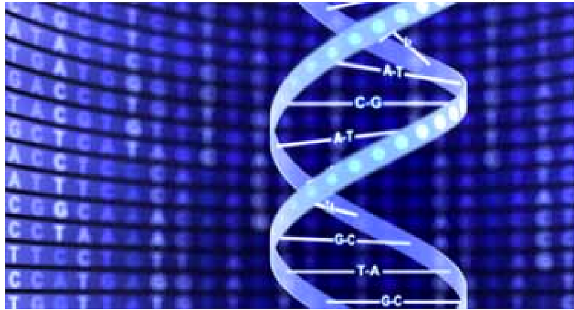
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Blended Learning in MIT Biology since 2013

MOOCs

7.00x Intro to Biology

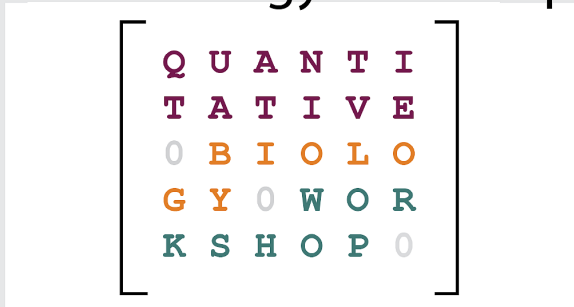


on-campus

Introduction to Biology

- 7.012: all MOOC content
- 7.013, 7.014, 7.016: select MOOC content
- Brian White at UMass Boston

7.QBWx Quantitative Biology Workshop



QBW Outreach:

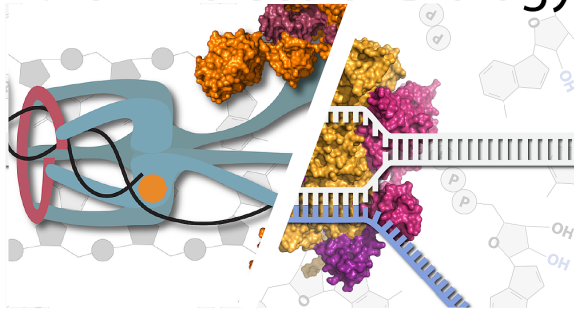
all MOOC content

7.S391 QBW:

all MOOC content

open to MIT community

7.28x Molecular Biology



7.28/7.58 Molecular Biology:

all MOOC content

Blended Learning in MIT Biology since 2013

Other Courses Using MITx Residential Open edX Platform

7.06 Cell Biology

7.S390 Creating Digital Learning Materials in Biology

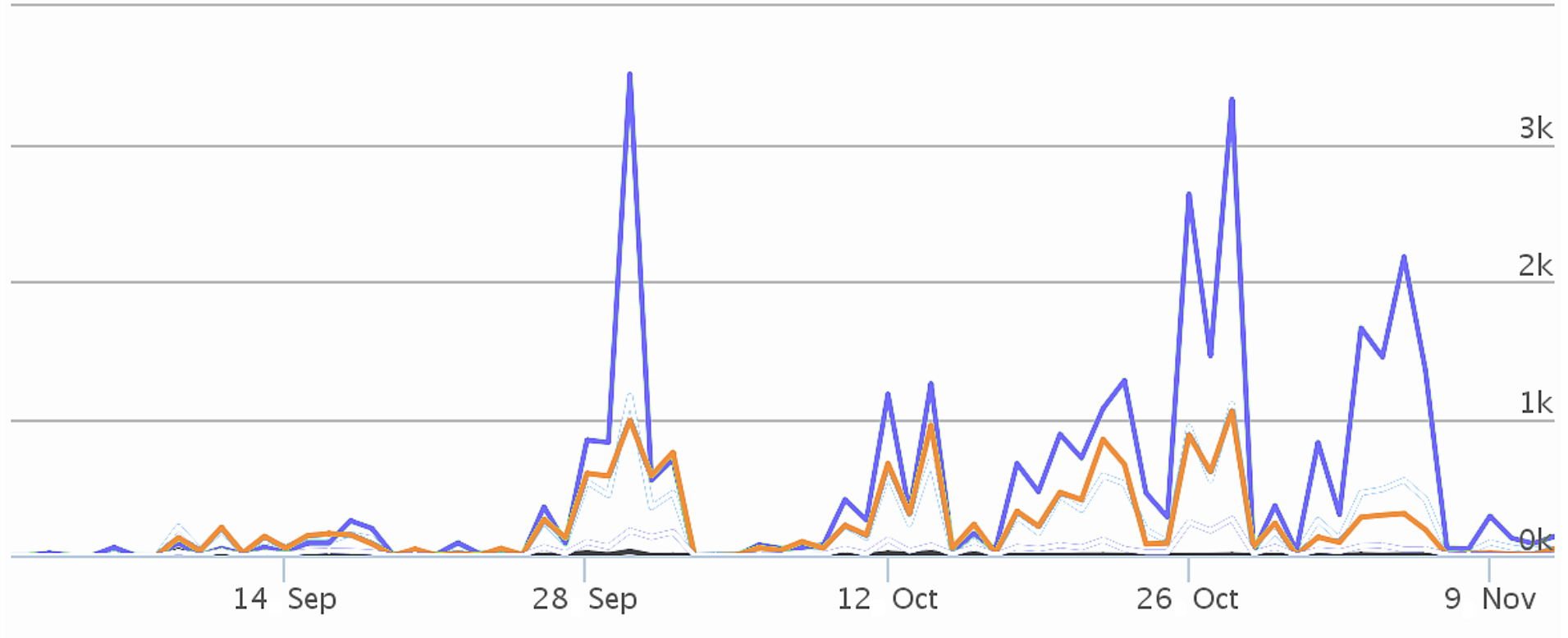
7.03 Genetics in 2014

7.012 Intro Biology 2015 Site Activity

Purple = video events

Orange = problem check events

about 500 students

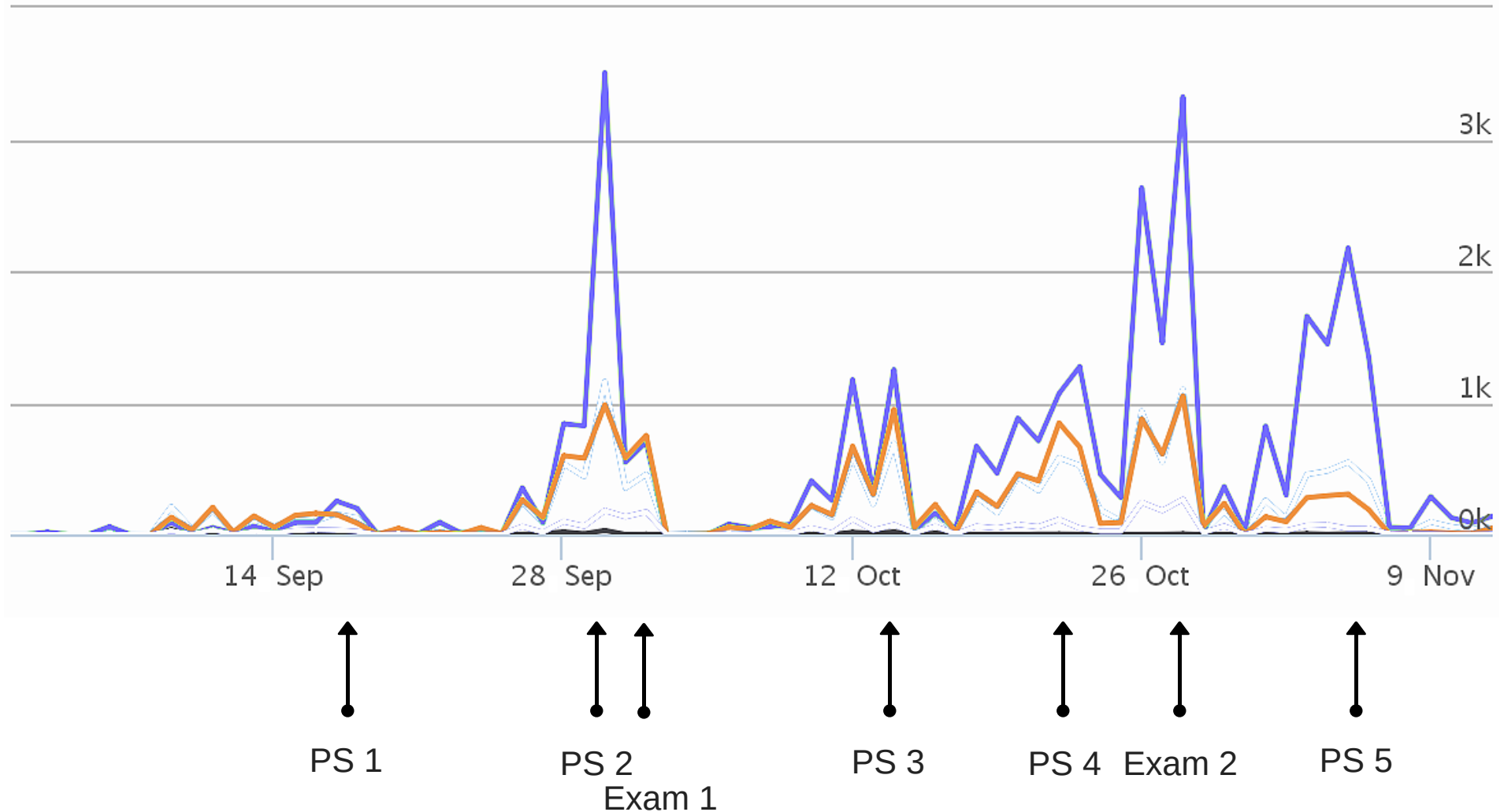


7.012 Intro Biology 2015 Site Activity

Purple = video events

Orange = problem check events

about 500 students



7.06 Cell Biology Fall 2014

Problem:

Difficult for students to understand biological experiments and experimental design without lab

Potential Solution:

Give students the option to learn through video designed specifically for the course and based on a research paper

Results:

Students approve and want more.

Professors see an improvement in engagement and scientific thinking in students.

7.06 Cell Biology Fall 2014

Four videos 5-8 minute animated videos

Questions posted to MITx site to answer on forum

Mud slips after each class

Data collected from MITx site use and survey

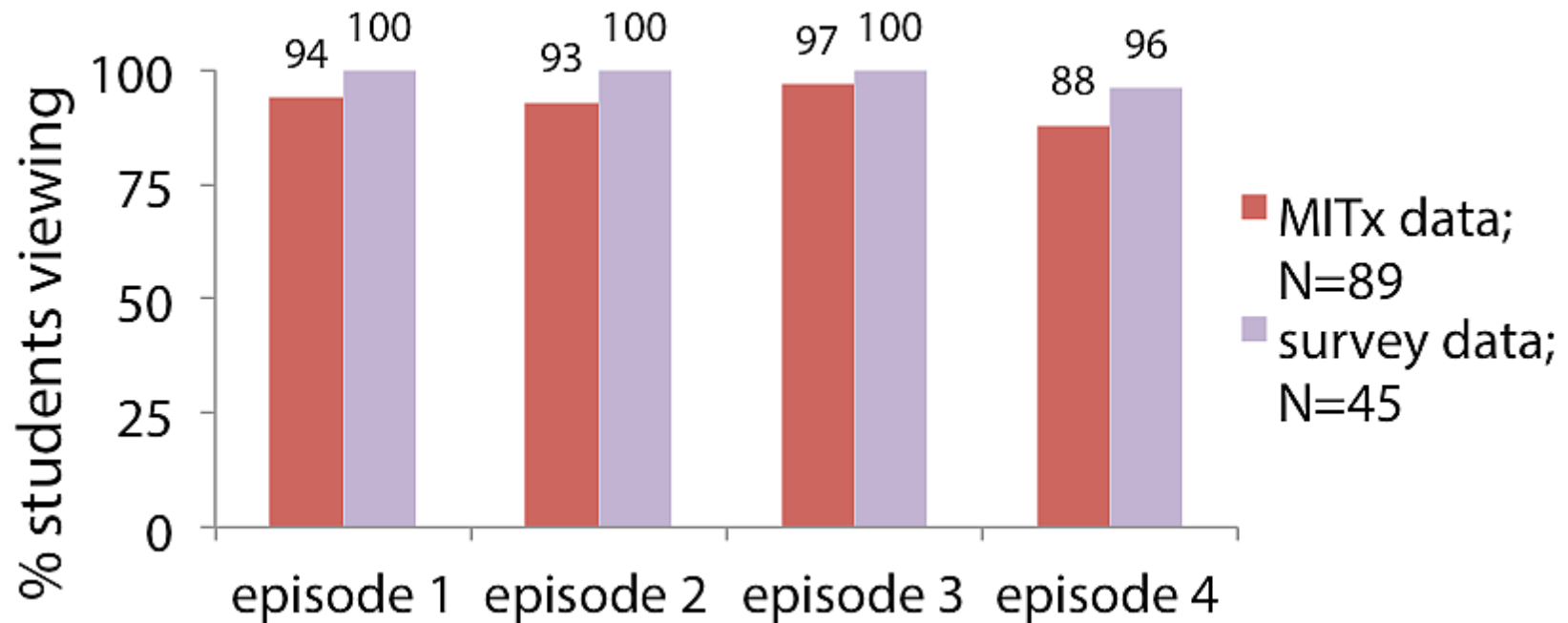
All video and discussion forum use not directly tied to a grade

Neat Experiments in Cell Biology Video



For full video: <http://youtu.be/GIH5qI7IzIM>

7.06 Cell Biology Fall 2014



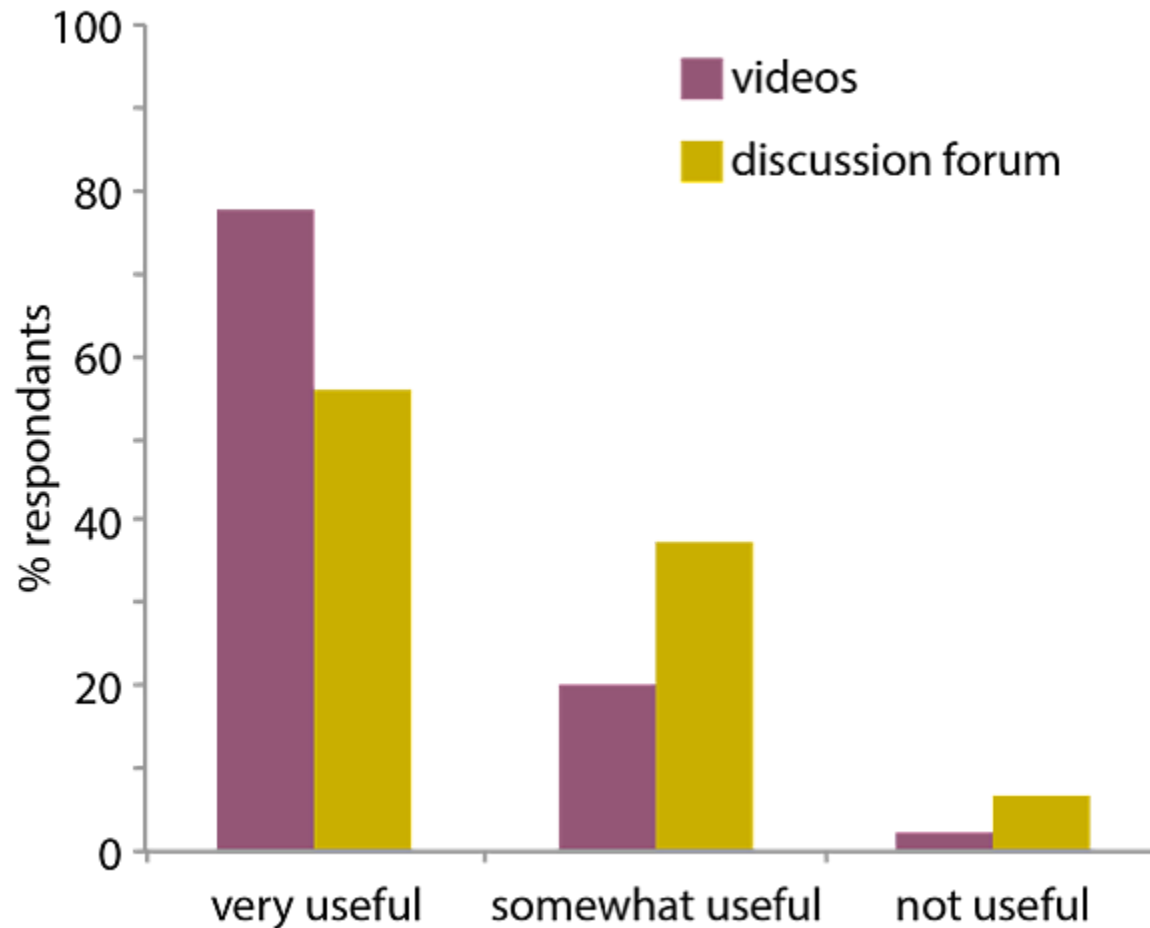
7.06 Cell Biology Fall 2014

Student comment: “These videos and the discussion questions help A LOT. I feel like I’m actually coming away with an understanding of the experiments and an improved ability to think about experimental design, controls, and how results can be interpreted.”

7.06 Cell Biology Fall 2014

Professor Adam Martin: “The goal of our course is not only to get students to understand how a cell ‘thinks’, but to also understand how a cell biologist thinks. After using the videos on the MITx site, I noticed a big improvement in students’ ability and willingness to suggest experiments that address a cell biological problem in lecture. They were thinking like cell biologists.”

7.06 Cell Biology Fall 2014

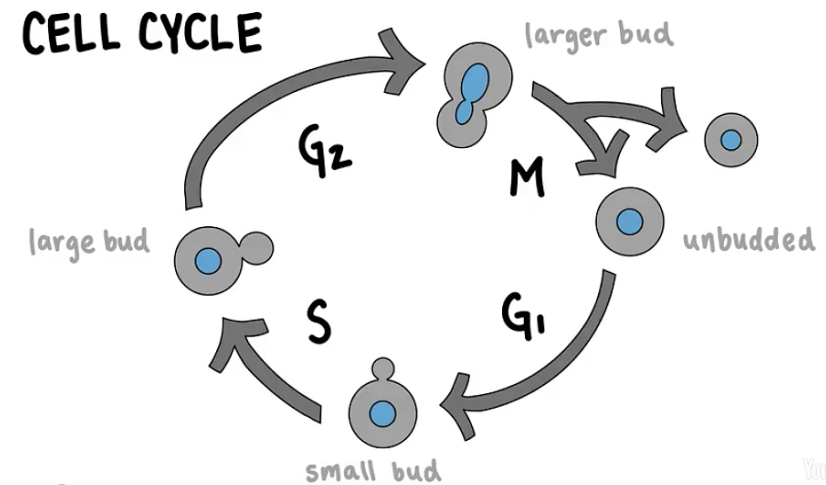
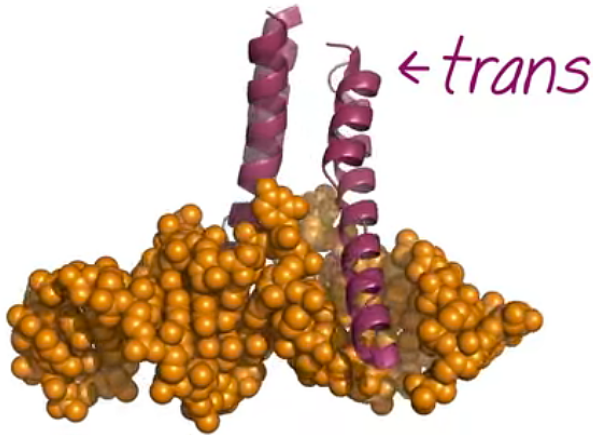


“Did you find the 7.06 MITx videos useful as a study aid?” and “Did you find that reading the questions, answers, and comments posted by other students or staff helped you study or understand 7.06 concepts?”

N=43

7.06 Cell Biology Fall 2015

Two new "neat experiments" videos



Professor Martin also adopted mud slip practice

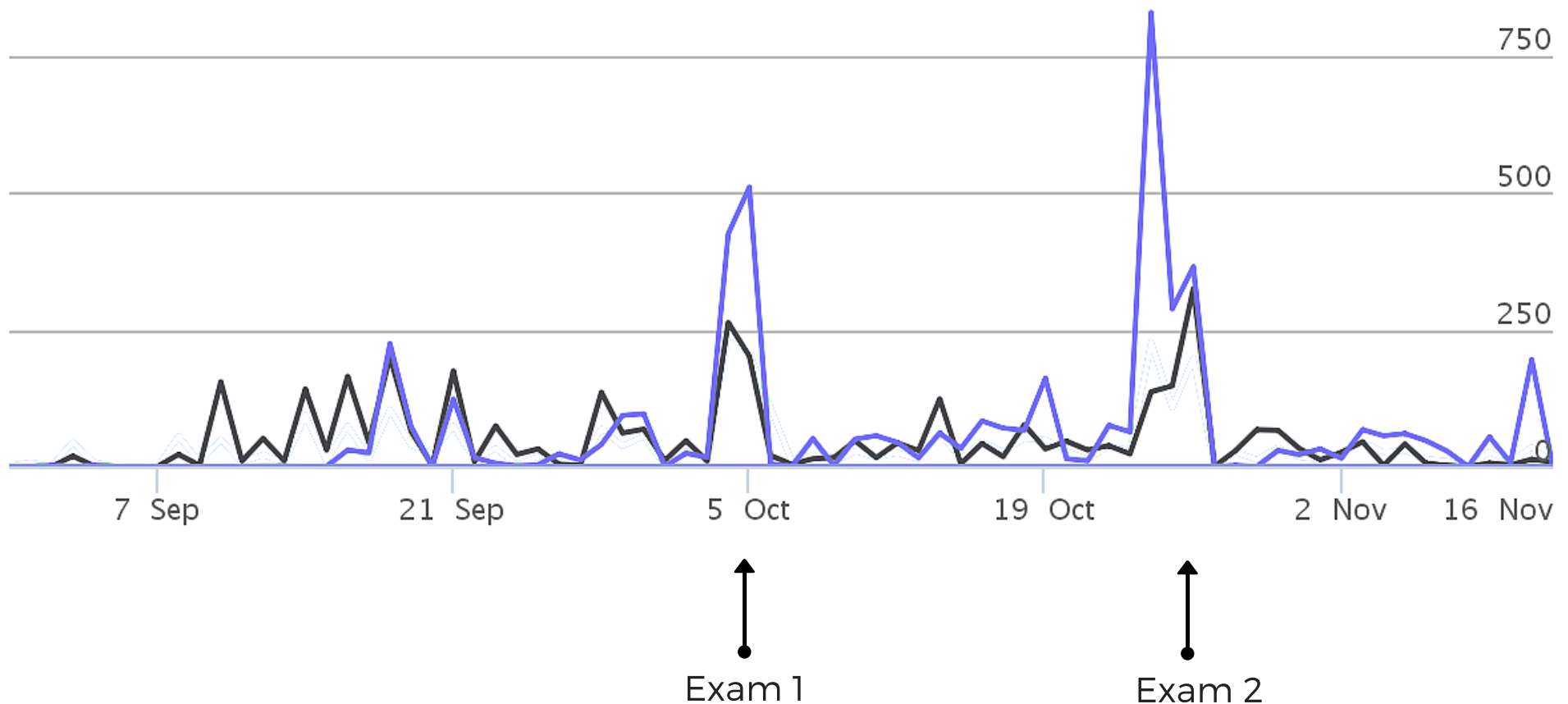
Only uses MITx site (no separate Stellar site)

MITx

7.06 Cell Biology 2015 Site Activity

Purple = video events

Black = discussion forum events
about 100 students



Thank You

7.06 Fall Faculty

Frank Solomon

Adam Martin

MITx Bio Team

Sera Thornton

Ceri Riley

Nathaniel Schafheimer

Theresa Wasylenko

Megan Warner



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