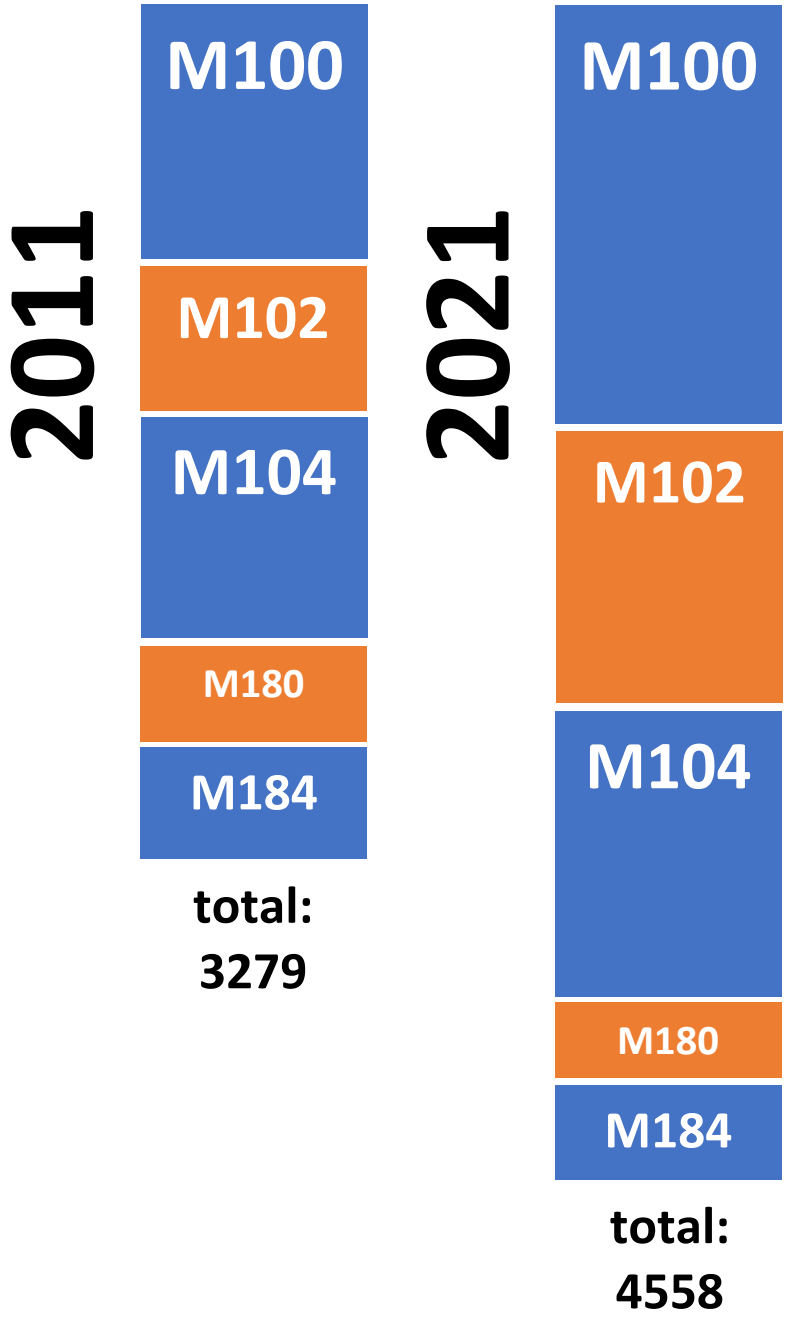
UBC MATH • THE MATH 10X PROJECT

- The changing landscape
- The changing landscape (in M100)
- The intervention
- The intervention (in M100)
- Goals

UBC MATH • THE CHANGING LANDSCAPE

- Let's restrict to Term 1 differential calculus courses, but Term 2 integral calculus courses follow the same pattern and will undergo the same changes
- Around 90% of first-year calculus students take one of five "standard" differential calculus courses in Term 1
- Since 2011, the number of students taking these courses has grown by around 40%
- The number of faculty members, postdoctoral fellows and graduate students has *not* grown by around 40%

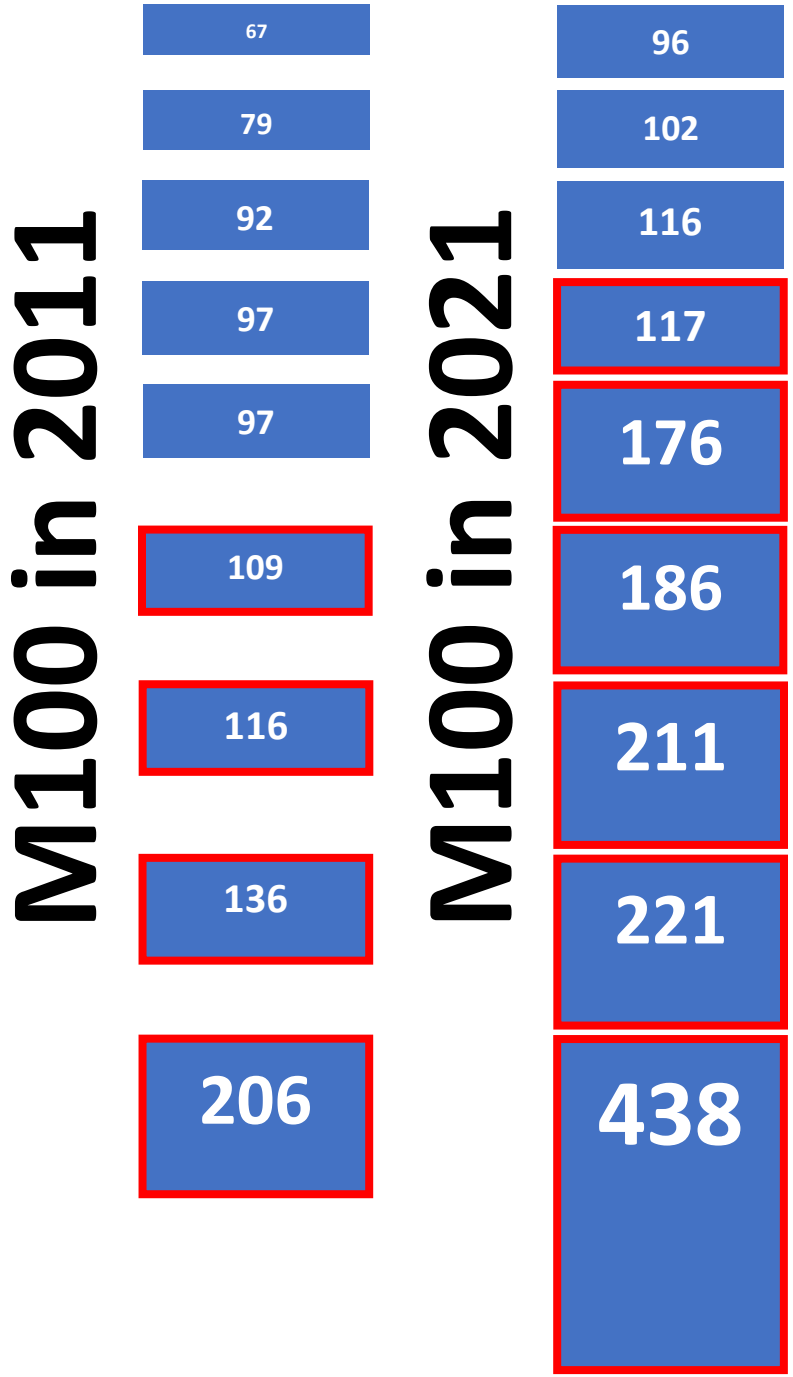
UBC MATH • THE CHANGING LANDSCAPE



UBC MATH • THE CHANGING LANDSCAPE

- All sections have gotten larger
- Since we are committed to giving novice instructors (postdocs, grad students) a reasonable teaching experience, there are more faculty-taught sections…
- …and the novice instructor teaching experience is still pretty difficult
- The student experience varies wildly, and even with an apex instructor, the student-instructor ratio is lousy

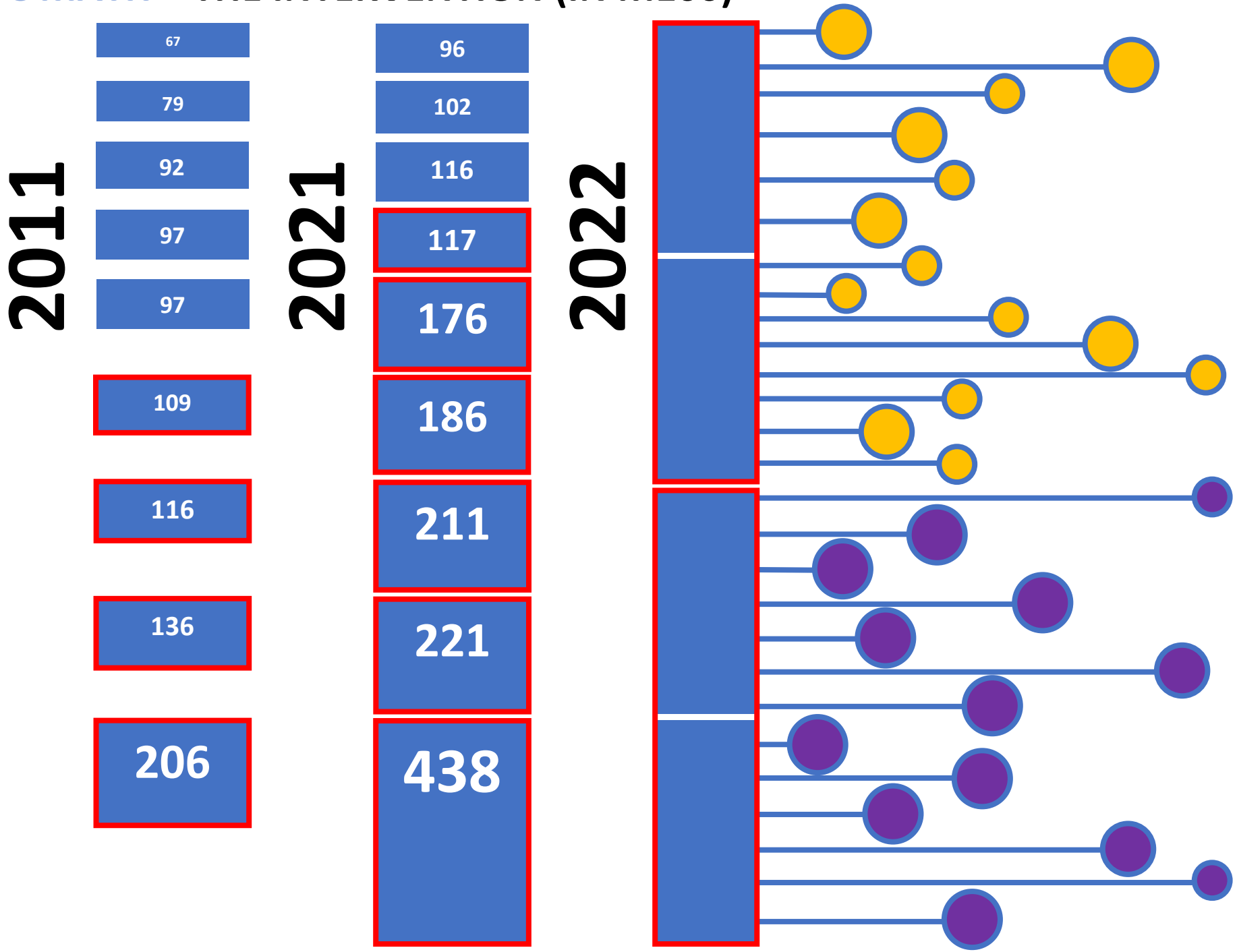
UBC MATH • THE CHANGING LANDSCAPE (IN M100)



UBC MATH • THE INTERVENTION

- Consolidate courses into a single differential calculus course, with flavours
- Use the *small class model*: instead of 3 hours of lecture per week, a student attends one 2-hour lecture and one 1-hour small class
- 2-hour lectures are large and faculty taught: they lay out theoretical groundwork and canonical examples
- 1-hour small classes are small(ish) and taught by a novice instructor and TA: students learn new material in an active, group-based, problem-based setting

UBC MATH • THE INTERVENTION (IN M100)



UBC MATH • **GOALS**

- For *students*: a more active and authentic learning experience
- For *novice instructors*: a more structured and supported teaching experience
- For *faculty instructors*: a more teaching-focused (and less administrative) experience
- For the *department*: a simpler course with roles that work better at scale
- For *programs*: more opportunities for customization and cohort-building
- For *registration*: more transparency
- The small class model was first run in UBC Math in 2014, and has been shown to be effective (Radzimski, Sargent, L—)