

1116-L1-1388 **sarah-marie belcastro*** (director@mathily.org), **Max Engelstein**, **Jonah Ostroff** and
Thomas C. Hull. *Scheduling the Week of Chaos*. Preliminary report.

We have a problem. At MathILy, MathILy-Er, intensive summer programs for talented high-schoolers, we have a Week of Chaos during which 10–15 courses are offered across 5 time slots (with 2–3 classes per time slot). We are only given instructor-course pairings and students’ semi-ranked topic preferences. At base, this is a partition problem, as each student must be assigned a class in each time slot and we optimize student preferences. However, there are two wrinkles: (1) We simultaneously assign classes to time slots and students to classes, and (2) there are additional non-obvious constraints for class size, student preparation, instructor/student exposure, instructor/instructor exposure, and student/student social dynamics.

This situation—even with our small data sets—is too complex for straightforward scheduling algorithms, but it is amenable to ad-hoc approaches augmented with elbow grease. We will describe the code we use to reveal features of the data, and then compare/contrast two human-executable algorithms we have used to solve the problem. We will also describe a reframing of the problem that promises to simplify the production of solutions, and what happens when we ask some Week of Chaos students how *they* would set up the scheduling problem. (Received September 19, 2015)