Technical Report #002

**CREATING SCENARIO FOR SCHOOL + Long Term Care + Bar**

**The following sequence of steps should be followed:**

1. **Define the Universes that are to exist**
   1. **Define the critical times (start and duration) at which significant transitions happen**
2. **Define the populations that are to go to the Universes at the transitions and durations**
3. **Use MingleFactor to specify the degree of infection that would happen in the Universes**

**SCHOOL SITUATION**

**The congregate management situation at schools is not just classrooms, even at university. Here we take a set of activities that might be in Elementary or Junior High:**

* **classroom sitting down time**
* **playground time**
* **lunchroom time**
* **hallway/bathroom time**
* **study/project time**

**Students might form different mixes going to these, but for the initial model, we can use three groups of equal size that do not mix anywhere. We can evolve this model to introduce mingling between the groups say at playground, lunchrom and hallway time. Note that in playground, we consider an outdoors venue, whereas gym/sports are often indoors, so that is a separate category not present in the above.**

**Not to boil the ocean, we will use this initial model, and learn from it to generalize to kinds of spaces, though this generalization makes time-based movement between them more difficult.**

**There are teachers, and there are volunteers, parents, and there are administrative and maintenance people in addition to students. These interact with students, and with each other, at different levels. In general, students tend to interact mainly with teachers and with one another. So we could have a distinct universe for administration and take teachers from them to classrooms at transitional times.**

**LONG TERM CARE SITUATION**

**Residents, direct care staff, visitors, administration, maintenance people (including kitchen and servers) are the primary components. We could have visitors spaced throughout the day, with parents of school children, and children, visiting during the day and after school hours.**

**OTHER UNIVERSES**

**If we used the 5 School Universes, and a Long Term Care Universe, we have 3 remaining. We can have HOME, in which there is the mingling of children with parents, and some HOME residents may be elderly vulnerable persons. The HOME universe can also be a parking garage, so that anyone not doing anything specific can be at HOME.**

**This leaves two others, one for high mingle indoor recreation areas such as bars, cocktail parties, dances at weddings and clubs; it is uncertain whether large indoor crowds with little mingling such as arena-based spectator sports have the same.**

**The other is for office work. This would be a high-density but relatively low mingle Universe, though some offices with poor ventilation might have an intrinsic mingle factor added to that of everyone present.**

**We might ask about shops, clinics, hospitals, shopping malls, restaurants, concerts, outdoor gatherings including football games, athletics, parks, parades.**

**For now, we will use the Multiverse as defined above:**

* **Five School Universes**
* **One LTC**
* **One Bar**
* **One Office**
* **One HOME**

**POPULATIONS**

**We could have 30 students in three groups of 10 – A, B, C**

**We could have 10 teachers and admin staff**

**We could have 20 residents in LTC**

**We could have 14 shift1 LTC non-patients (7am – 7pm)**

**We could have 6 shift2 LTC non-patients (7pm – 7am)**

**We could have 10 office workers**

**We could have 5 bartenders and other bar workers**

**We could have 5 elderly at HOME**

**That makes up 100 persons**

**SIGNIFICANT TRANSITIONS**

**The following represents a feasible schedule for A,B,C groups of students during the school day:**

**FTF CLASSROOM PLAYGROUND LUNCHROOM STUDY/PROJECT HALL/washrom**

**09-10 A C B**

**10-11 B A C**

**11-12 C B A**

**12-13 B A C**

**13-14 B C A**

**14-15 A B C**

**15-16 C A B**

**Using this schedule, we can assign the teachers and staff to the classrooms, playground, projects, etc there being only 3 activities going on simultaneously – so they can be 3/3/4 or 4/4/2 as desired.**

**After school, students go HOME, then to visit LTC in the evenings or afternoons, or go HOME with different mingle factors as the after-school day progresses.**

**The office workers may have a higher mingle factor at 10, 12 and 3 (two coffee breaks, and one lunch break). Some of them may have higher mingle factors than others (say there is a meeting between 8-10).**

**There are 30 persons who are eligible to go to the bar in staggered times – because 30 students, 30 LTC persons, and 10 evening LTC staff cannot go. We can also vary the amount of mingling they do.**

**This will do for a start.**

**METRICS**

**The question is: what are we going to measure? What does the inter-mingling and traffic flow tell us? What level of detail do we need to get the desired information?**