

# TYPES OF SAMPLING PLANS

CHEM 25 | SDSU

# RANDOM SAMPLING

- **Random sampling** consists of an unbiased selection of samples from the population (difficult to do in reality).
- Approach:
  - Segment sample into grid of batches.
  - Use a random number table (generator) to select coordinates.

## Random Number Table

75061	37674	26320	75100	10431	20418
76831	58678	87054	31687	93205	43685
66558	37649	08882	90870	12462	41810
33266	66583	60881	97395	20461	36742
12032	51414	82384	38370	00249	80709
14063	93104	78483	72717	68714	18048
41701	73117	33242	42314	83049	21933
38605	29341	80749	80151	33835	52602
64516	17971	48478	09610	04638	17141
13015	72907	00431	45117	33827	92873
12138	53010	95601	15838	16805	61004
38224	29301	31381	38109	34976	65692
31199	92558	68368	04985	51092	37780
86210	11808	12841	45147	97438	60022
04689	87130	79225	08153	84967	64539
84987	28759	19177	14733	24550	28067
21283	07044	92729	37284	13211	37485
33226	55903	31605	43817	22250	03918
71168	57609	91510	77904	74244	50940
50414	31966	87912	87514	12944	49862

# JUDGMENTAL SAMPLING

- **Judgmental sampling** is the opposite of random sampling, we use prior knowledge to guide the selection of samples.
- This sampling requires proper understanding of the system being sampled.

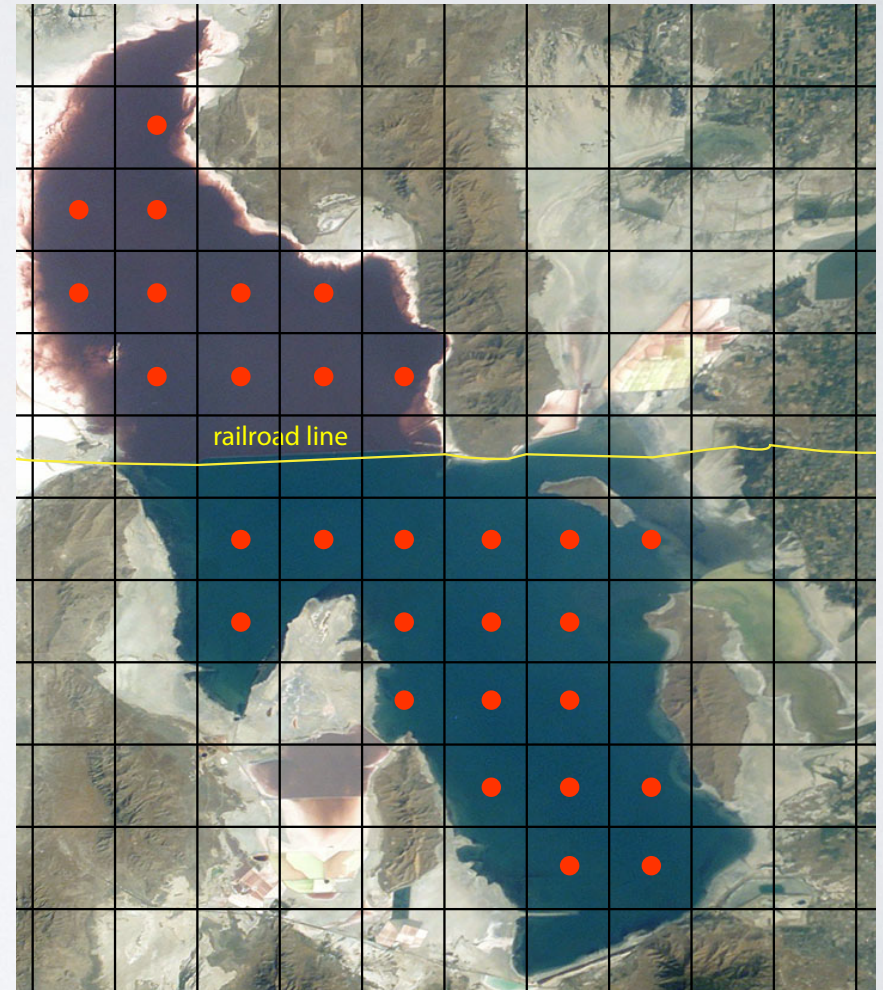


Which sprinter should be tested for steroid abuse?



# SYSTEMATIC SAMPLING

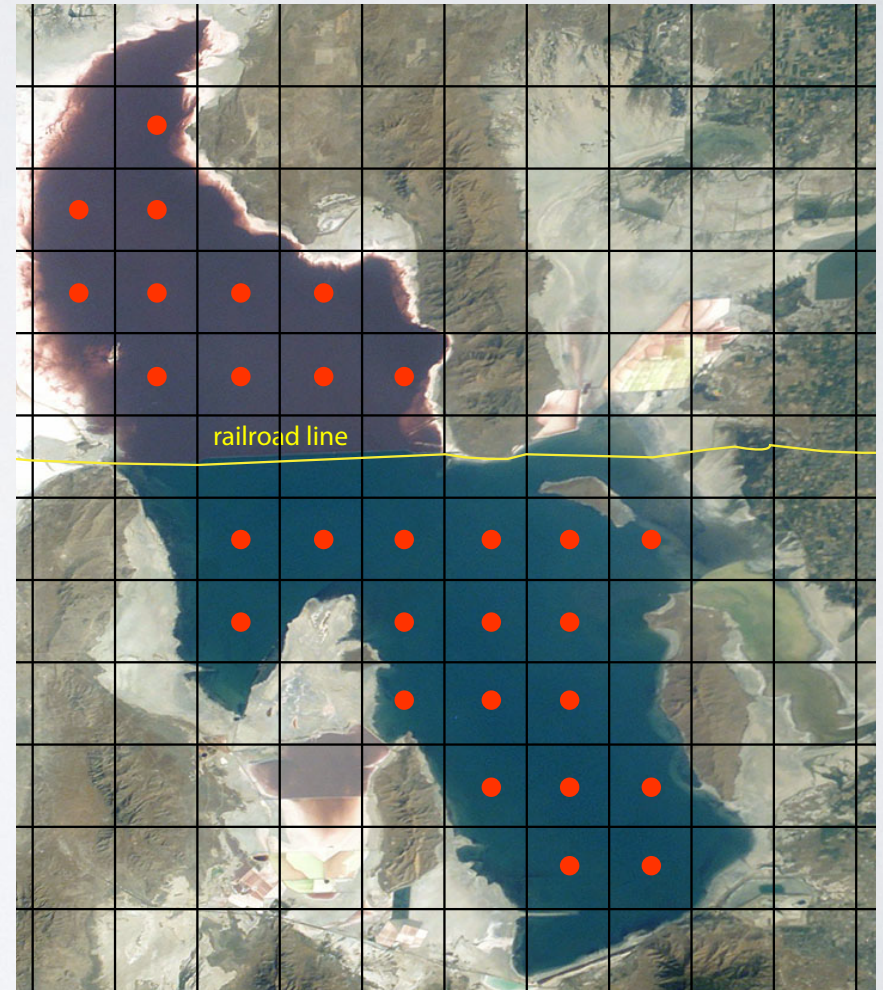
- **Systematic sampling** is performed by dividing the target population into regular intervals of space or time.
- The sampling is then performed equally within each of these intervals.





# SYSTEMATIC -JUDGEMENTAL SAMPLING

- **Systematic-Judgmental sampling** uses prior knowledge to guide the systematic sampling.
- If we know that a pollutant of interest is in the lake north of the railroad line, there is no point sampling south of the line.



# STRATIFIED SAMPLING

- **Stratified sampling** separates the population into strata (zones, layers...) and perform random samplings in each.
- Pool the means of each strata to obtain the overall mean for the population.
- Often results in lower variance compared to random sampling when strata are distinct from each other.

