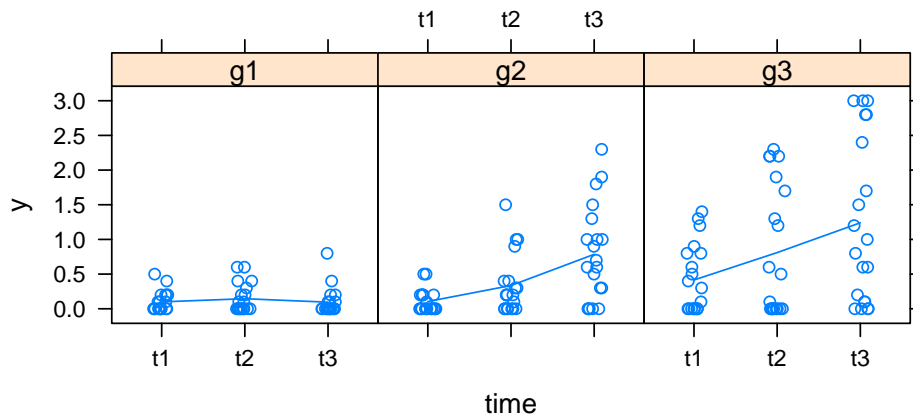**Case Study 2**
for February 5

Your client is a pediatric psychologist who is studying differences in development between normal children and children with two different developmental disabilities. To measure this, she is considering the following study. The parents of 60 children (20 per group) are to be given surveys at three different ages. These surveys have 10 questions each, and for each question, the parents can answer "no trouble," "a little trouble," "some trouble," or "lots of trouble." These are to be coded 0-3 and the average score recorded for each child for each of the three ages.

The resulting data is expected to look somewhat like the following. Group 1 (g1) is the normal children; groups 2 and 3 (g2 and g3) are the children with the two types of developmental disabilities. It's jittered on the x-axis for clarity. Note that there are many 0's in this data set (45% of the total); 0's occur when the parents answer "no trouble" for all 10 questions. The fitted line is the arithmetic average for each time point.

See the next page for groups and specific questions to discuss and present.

Groups 1 and 2 should answer these questions:

Is 20 children per group a sufficiently large sample size? If you need more information, what information would you need? Assume you have this information. How would you calculate the necessary sample size? Would you suggest any changes to the researcher's design that might result in additional power?

Groups 3 and 4 should answer these questions:

How would you analyze the resulting data? Consider both simple and sophisticated methods. Would you suggest any changes to the researcher's design to make the analysis easier to perform and interpret?

Group 1:

Name	Email
Yi Yang	yang1138
Xiao Zhong	zhong072
Qing Mai	maixx034
Gang Cheng	chen2285
Danning Li	lixx0700
Yi Wang	wangx857
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Group 2:

Name	Email
Chun Pu Song	songx183
Eric Graalum	graal002
Andy Wang	wang1074
Craig Rolling	roll0204
Changqing Ye	yexxx058
Teng Zhang	zhang620

Group 3:

Name	Email
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Pamela Sweeney	swee0003
David Zepeda	zepe0003
Heng Zhang	zhang440
Cindy Houser	house109
Ka Young Park	parkx748

Group 4:

Name	Email
Shanshan Ding	dingx056
Wei Qian	qianx029
Shu Ding	dingx099
Jing Yang	yang1387
Ying Lu	luxxx255
Lingzhou Xue	xuexx041

The chair for this week is David Zepeda.

Actual calculations are not expected, but if you'd like to play with the data from this graph, it is available on the website.