



# Lewis & Clark College

## Department of Mathematical Sciences

### Problem of the Week #5 (Spring 2018)

An airplane has seats numbered  $1, 2, \dots, 100$ . One hundred passengers are assigned seats and are about to board, with Alice going first and Bob last. But the first 99 passengers simply take random unoccupied seats.

Bob wants his assigned seat. If it is unoccupied, he sits in it. If it is occupied, he insists that the occupier move to his or her assigned seat. The displaced person must then move in the same way, perhaps displacing another person. This continues until all displaced people are seated.

What is the probability that Alice has to move? Please justify your answer.

- Solvers should include their name, address, and status at the College. Solutions can be mailed to MSC 110 via campus mail or placed in Yung-Pin Chen's mailbox in the Math Department Office. Solutions to the above *Problem of the Week* should be received by 5:00 p.m. Monday, February 26, 2018.
- Arthur Drobot (fr.), Falcon Garfein (fr.), and Sam Raphael solved *Problem of the Week #4*. Congratulations to them.