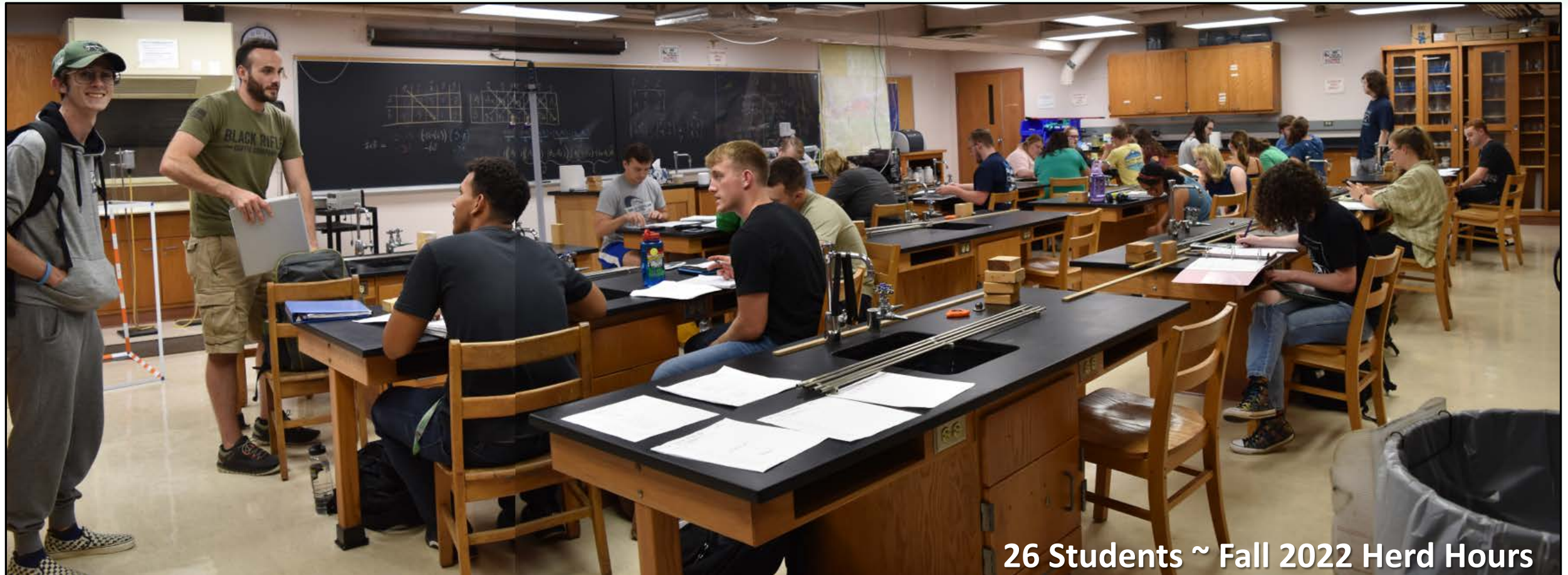


# Herd Hours: What is it and how does it work?



26 Students ~ Fall 2022 Herd Hours

**Dr. Sean P. McBride\* and Dr. Sachiko McBride†**



PHYSICS  
COLLEGE OF SCIENCE

*\*Department of Physics, Marshall University*

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COLLEGE OF EDUCATION  
AND PROFESSIONAL DEVELOPMENT



# What is Herd Hours?

<http://www.science.marshall.edu/mcbrides/teaching/>

- ‘HERD Hours’, is a place where students can come **individually**, or especially in **groups**, and work on homework together in a **non-classroom and non-typical-professor-office-hour setting**. The professor is not hovering in the room.



- It starts by moving your office hours to a **large space** and not calling it office hours.

# What are students told about Herd Hours?

<http://www.science.marshall.edu/mcbrides/teaching/>

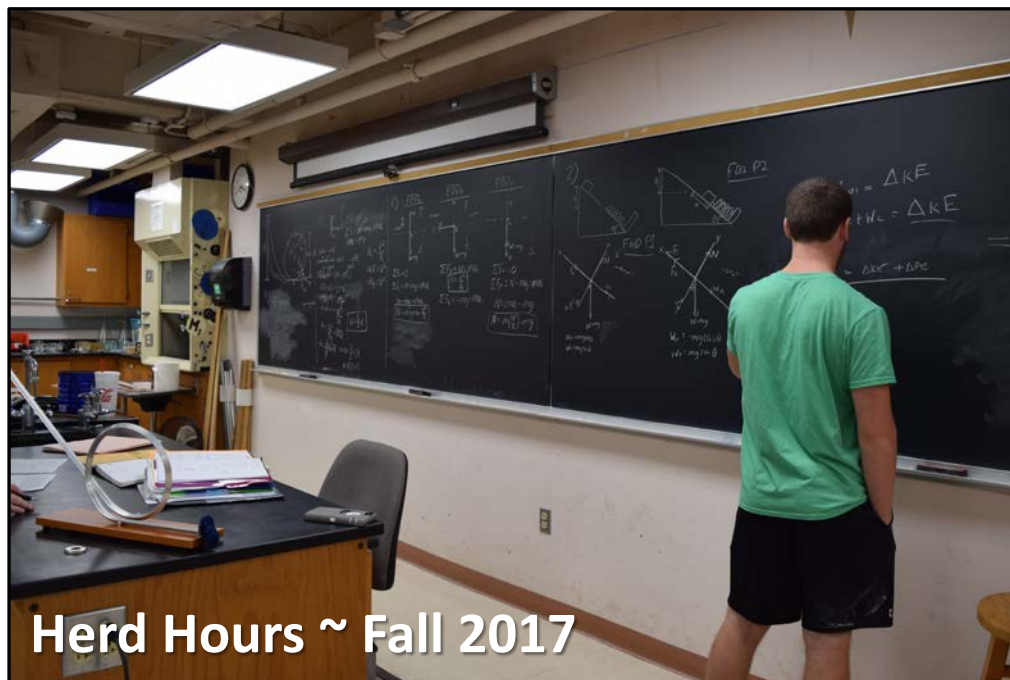
- Simply come by 'HERD Hours' and ask some questions. - **Very informal. Low stress.**
- At 'HERD Hours', **the professor is near by**, but first try to lead each other through peer instruction.
- Struggling, discussing, conquering the problems, and celebrating with your friends and peers is better than being frustrated by yourself and not making progress on the homework. – **Provides an opportunity to make friends.**
- We encourage you all to **work together**, this is allowed on homework. More people around the table with different skill sets and **different approaches** and ideas to **attack the problems.**



# Key aspects of Herd Hours

<http://www.science.marshall.edu/mcbrides/teaching/>

- **Use the chalkboard!** If you think the answer, you got is correct and you are confident in your solution, **try and explain it to your fellow students on the board**, see what they think. Maybe they solved the problem a different way, arriving at a different answer, encouraging you to review and rethink how you solved the problem.
- **Discuss** with each other if you arrive at different answers. **Builds confidence in problem solving and improves their ability to explain their work to others.**



Herd Hours ~ Fall 2017

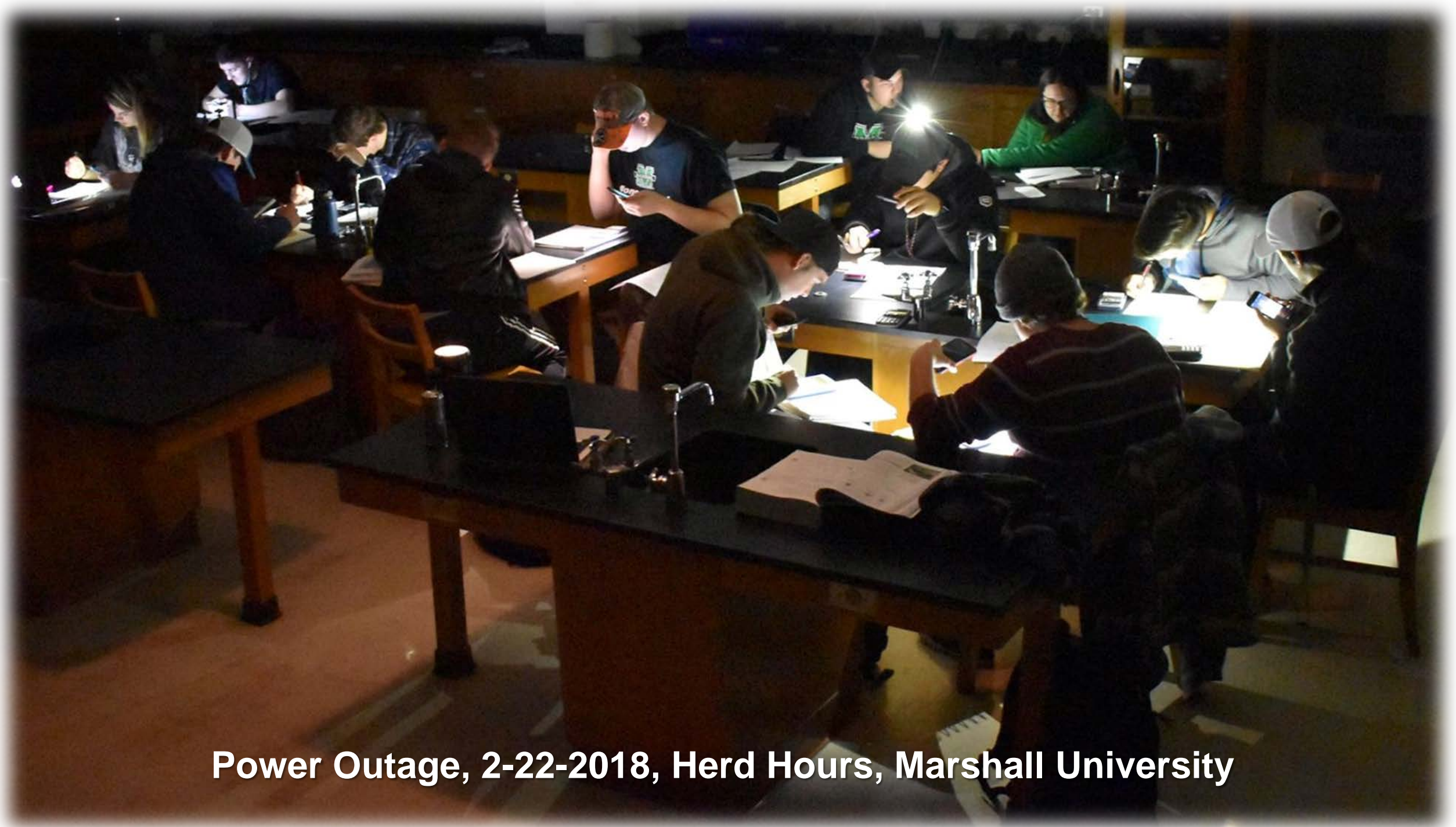


Herd Hours ~ Fall 2017



# Herd Hours must go on.....

<http://www.science.marshall.edu/mcbrides/teaching/>



Power Outage, 2-22-2018, Herd Hours, Marshall University

# Herd Hours alleviates some specific challenges

<http://www.science.marshall.edu/mcbrides/teaching/>

**Space** - Students having to wait in line as multiple students typically cannot fit in traditional faculty office spaces - cramped in the typical office space a professor has with limited to no work space for students,

**Easily intimidated students** - Being too intimidated or shy to ask a professor questions by themselves and not having a friend in the class willing to go with them.

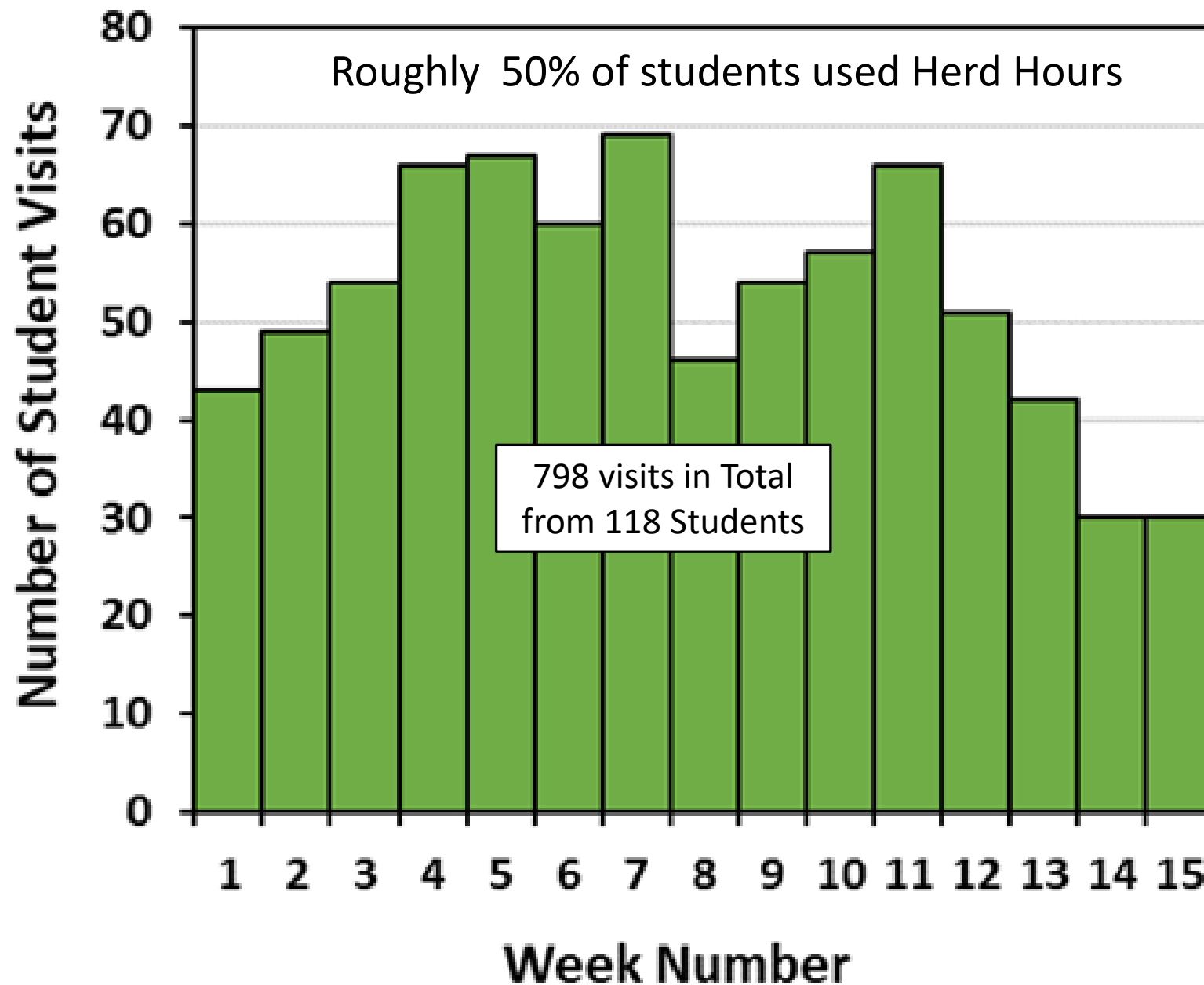
**Not alone in asking questions** - feeling embarrassed to ask fundamental questions, asking questions in front of other students who may also be waiting in line and are within hearing distance.

**Large block of time (6 hours on Friday)** - simply having a full schedule and cannot come to the specific 1-2 hour time slot on specific days when a professor chooses office hours to be.

**Low stress** – the student is not being directly supervised every minute. Allowing the students to have the opportunity to freely explain and discuss their ideas and problems in groups without the fear of being judged by their professor, and importantly allowing the students to make memorable mistakes to learn from.

# How often students use Herd Hours?

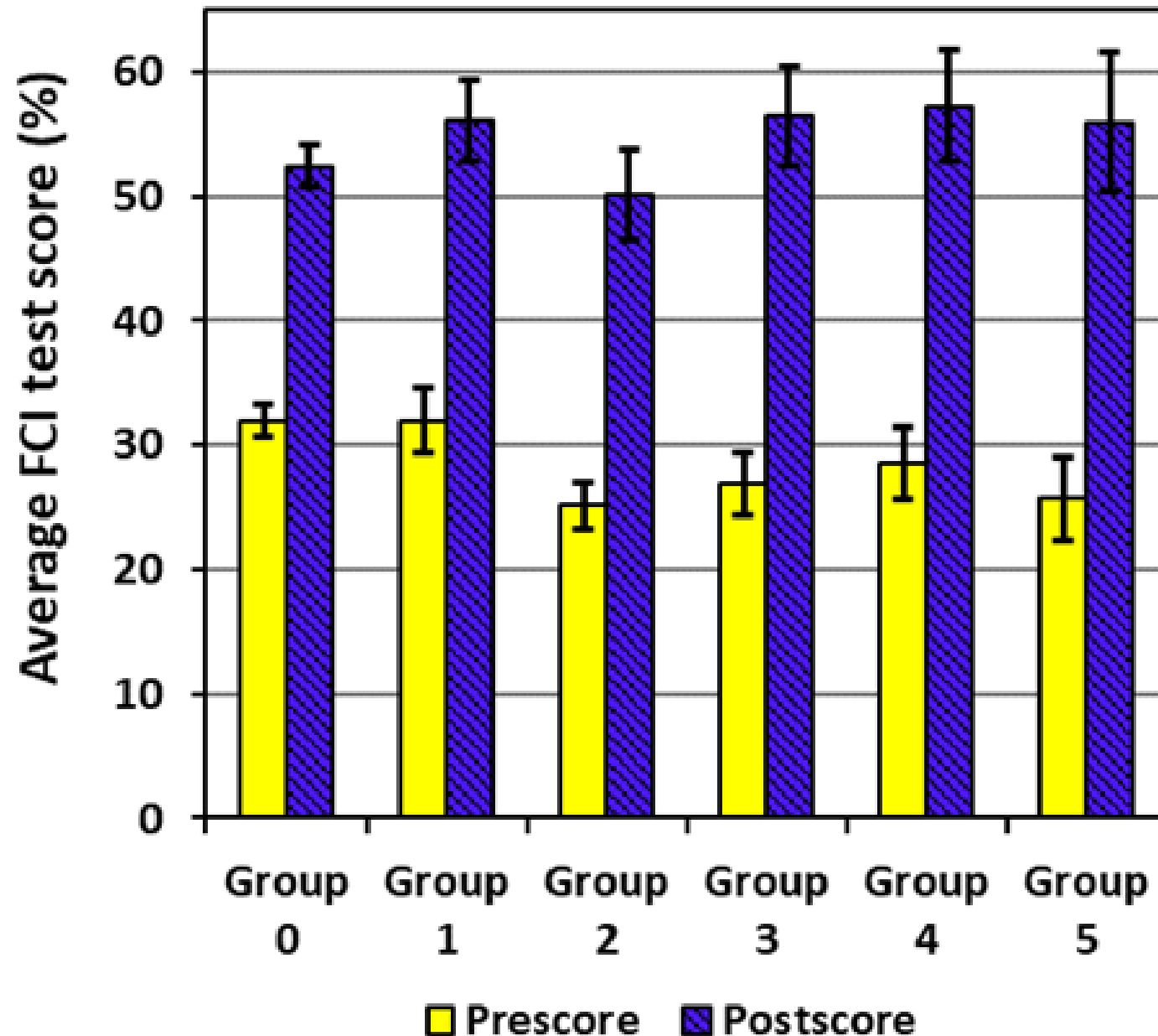
- **248** students in total took both pre and post FCI test between spring 2017 to fall 2019 in Drs. Sean and Sachiko McBride's sections.





# Effectiveness of Herd Hours?

- **Group 0 has higher pre-test scores** than the most of the groups, but **most groups have higher post-test scores than the Group 0.**

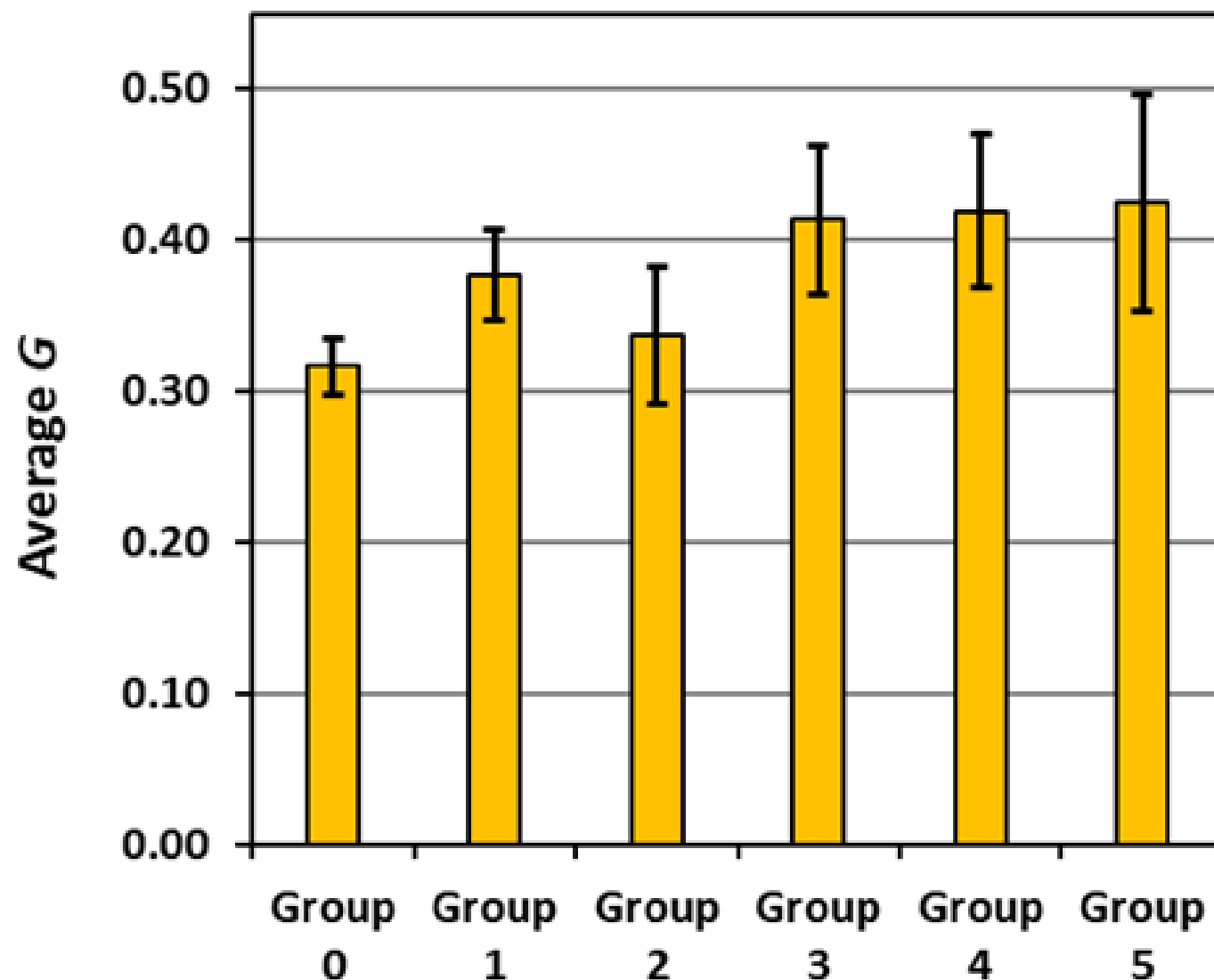


	# of visit to HH
Group 0	0
Group 1	1 - 3
Group 2	4 - 6
Group 3	7 - 9
Group 4	10 - 12
Group 5	13 - 15



# Effectiveness of Herd Hours?

- **Students in the Group 3, 4, and 5** had lower pre-score than the students in the Group 0; however, their **ING is 9 % to 10 % higher** than the Group 0 at the end of semester.

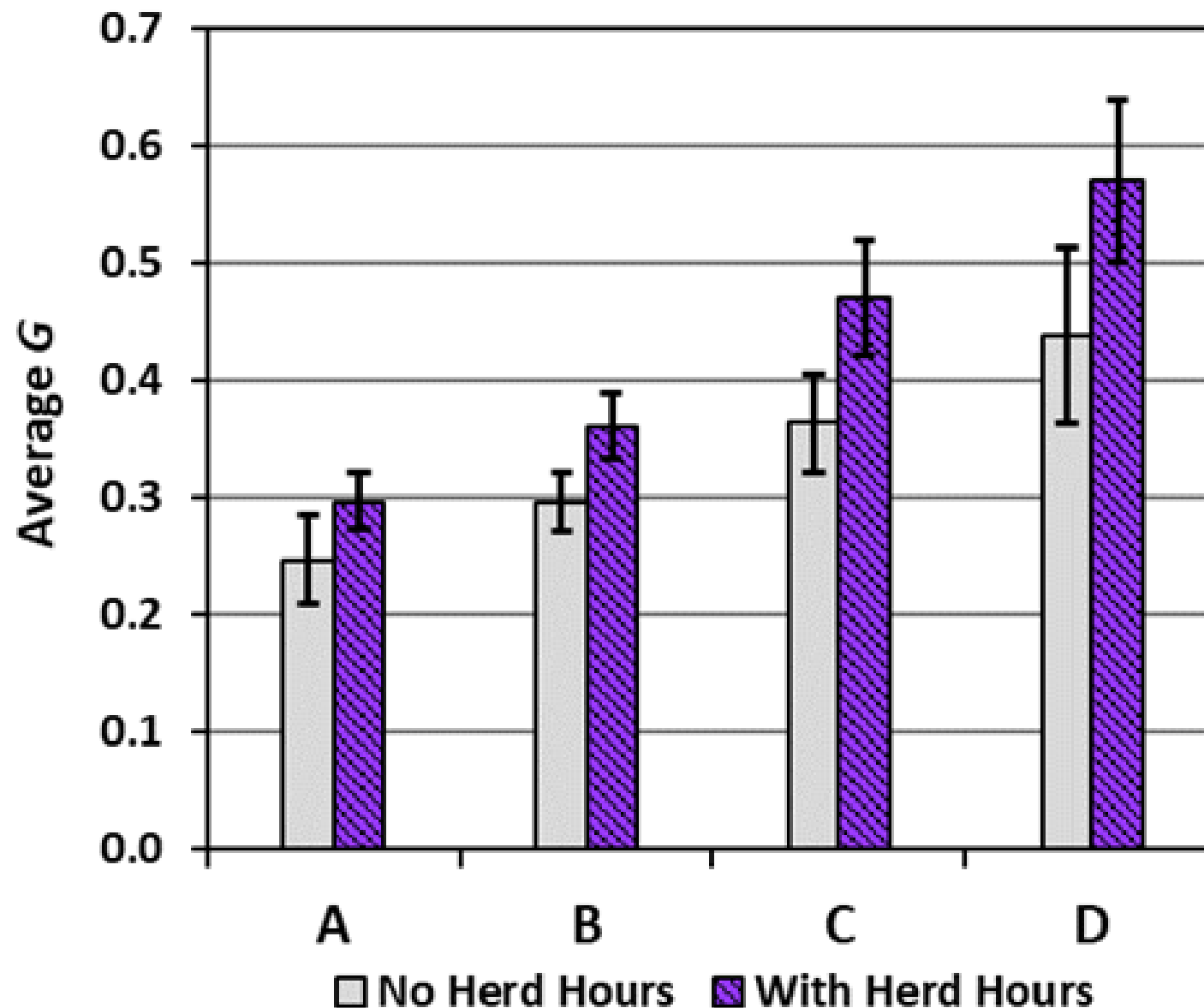


	Average ING
Group 0	0.32 +/- 0.02
Group 1	0.38 +/- 0.03
Group 2	0.34 +/- 0.05
Group 3	0.41 +/- 0.05
Group 4	0.42 +/- 0.05
Group 5	0.42 +/- 0.07

$$ING = \frac{(\% \text{ postscore}) - (\% \text{ prescore})}{100 - (\% \text{ prescore})}$$

# Effectiveness of Herd Hours?

- Students that attended **Herd Hours** earned nearly **5-14% higher average ING** than the students that did not attend Herd Hours.

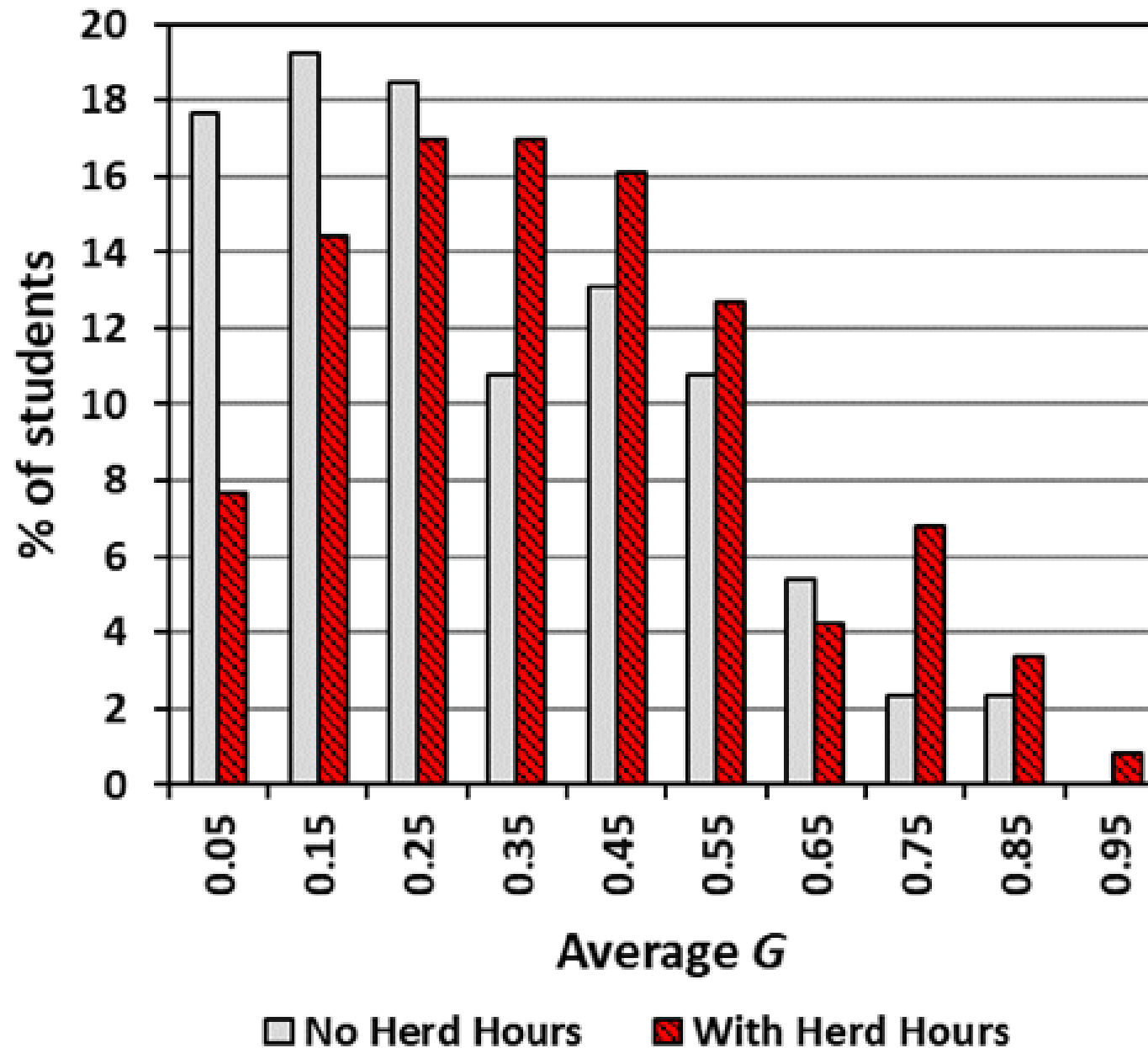


	# of correct answers in pre-score
Group A	0 - 5
Group B	6 - 10
Group C	11 - 15
Group D	16 - 30



# Effectiveness of Herd Hours?

- The normalized gain of students who have visited **Herd Hours peaked around 0.35 compared to 0.15 for non-users!**



# Comparisons of ING for different groups

## From spring 2017 to fall 2019

118 students visited Herd Hours

(89 males - 75.4 % and 29 females - 24.6 %)

130 students never visited Herd Hours

(92 males - 70.8 % and 38 females - 29.2 %).

The declared majors that visited Herd Hours the most:

Engineering (72.9 %) , Biological Sciences (9.3 %), Physics (3.4 %)

## Average G values:

$0.377 \pm 0.220$  (Engineering),  $0.390 \pm 0.150$  (Biological Sciences),  $0.260 \pm 0.161$  (Physics)

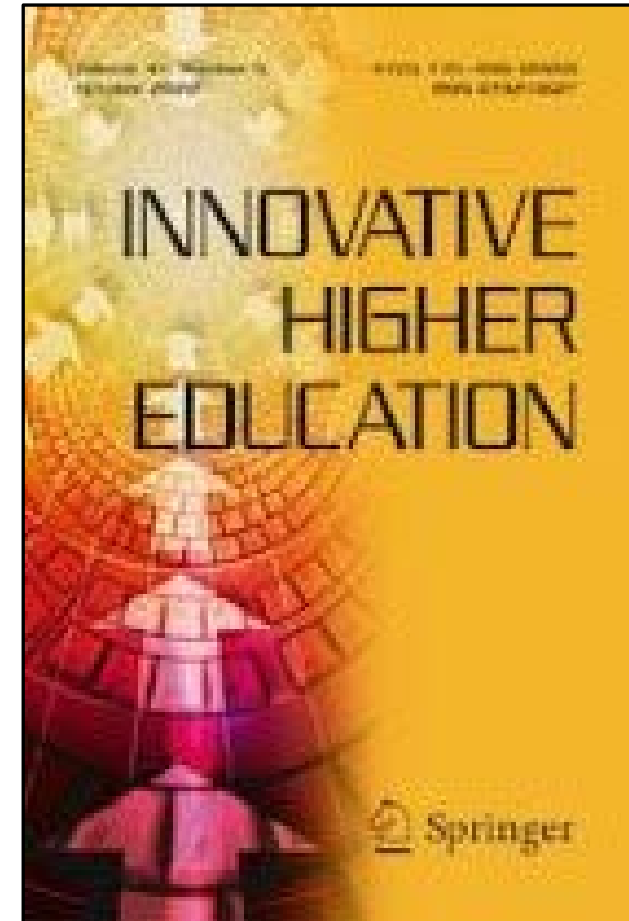
Male students in Herd Hours saw average G values of  $0.412 \pm 0.228$  (no Herd Hours,  $0.360 \pm 0.221$ )

Female students in Herd Hours saw average G values of  $0.314 \pm 0.166$  (no Herd Hours,  $0.211 \pm 0.150$ ).



# Conclusions and Future Work

- Herd Hours users excel by a variety of metrics compared to non-users.
- Herd Hours, for the authors, has made office hours obsolete.
- Will apply similar analysis to post covid data.
- Highly recommend trying to implement such a set-up. Please reach out to us if there is anything we can do to assist.



(Currently under review)

# Thank you for your time. Questions?

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