



A Virtual Tour of Wabash.



Wabash.



Detchon Center



Detchon Center

Relationship of Nicotine Use and Cessation to Impulsivity and Foraging

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Overview

Decision-Making Processes

Impulsivity is the process by which an individual is motivated by a more immediate reward or delay gratification and waits for a later reward.

Foraging is the process by which an individual either continues a behavior to acquire a different reward than it has characterized fully in the human domain, but in animal models we have evidence for its role in decision making.

In mice, long-term abstinence from nicotine and heroin produce noticeable effects on decision-making.

Do humans who struggle to quit nicotine show similar effects?

Procedure

- This study primarily focuses on individuals who smoke cigarettes or e-cigarettes.
- Participants were recruited through Amazon's Turk.
- Nicotine use was assessed at baseline and again six months after the study.
- Nicotine use: $n = 100$.
- Cigarette users: $n = 67$ (4 quit), E-cigarette users: $n = 33$ (9 quit, 24 did not).

Impulsivity measures:

- Monetary Choice Questionnaire (MCQ) surveys measure impulsivity.
- Participants completed MCQ surveys at baseline and six months.
- MCQ surveys were completed at baseline and six months.

Movie Row Task

Participants were presented with a choice between two movie trailers.

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Initial nicotine status:

- Discounting rates ($\log_e k$): decreased as reward size increased (main effect of magnitude): $F(2,400) = 235.63, p < 0.001$

- Cigarette smokers had the highest discounting rate, followed by e-cigarette users and then non-users (main effect of nicotine use): $F(2,540) = 0.38, p = 0.67$

Initial nicotine status: Foraging

- Percentage of rewards accepted decreased along with post-test rankings of the rewards, as expected (main effect of rank): $F(2,510) = 83, p < 0.001$

- Nicotine use was not related to post-test rankings of the rewards, as expected (main effect of nicotine use): $F(2,510) = 0.01, p = 0.99$

Conclusions

- Nicotine use (cigarettes and e-cigarettes) was associated with higher impulsiveness.
- Less willing to wait for rewards.

Foraging measures were not sensitive to nicotine use.

- Foraging may be better suited as a more natural process to understand "real-world" human decisions because of absence of forced choice options.
- Which often do not represent many everyday decisions we are faced with.

- Nicotine cessation at six-months was not associated with baseline impulsivity or foraging behavior.
- Weak trends for higher impulsivity in those who do quit.

Findings from the foraging task may have implications for understanding of "real-world" decisions.

Directions

- Future research to assess the validity of the foraging task.
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References

- Lawson, J., Wang, Y., Wilson, K., & Schmitzer-Torbert, N. (2023). Relationship of Nicotine Use and Cessation to Impulsivity and Foraging. *Psychology Department, Wabash College*.

Celebration of Student Research



Wabash.



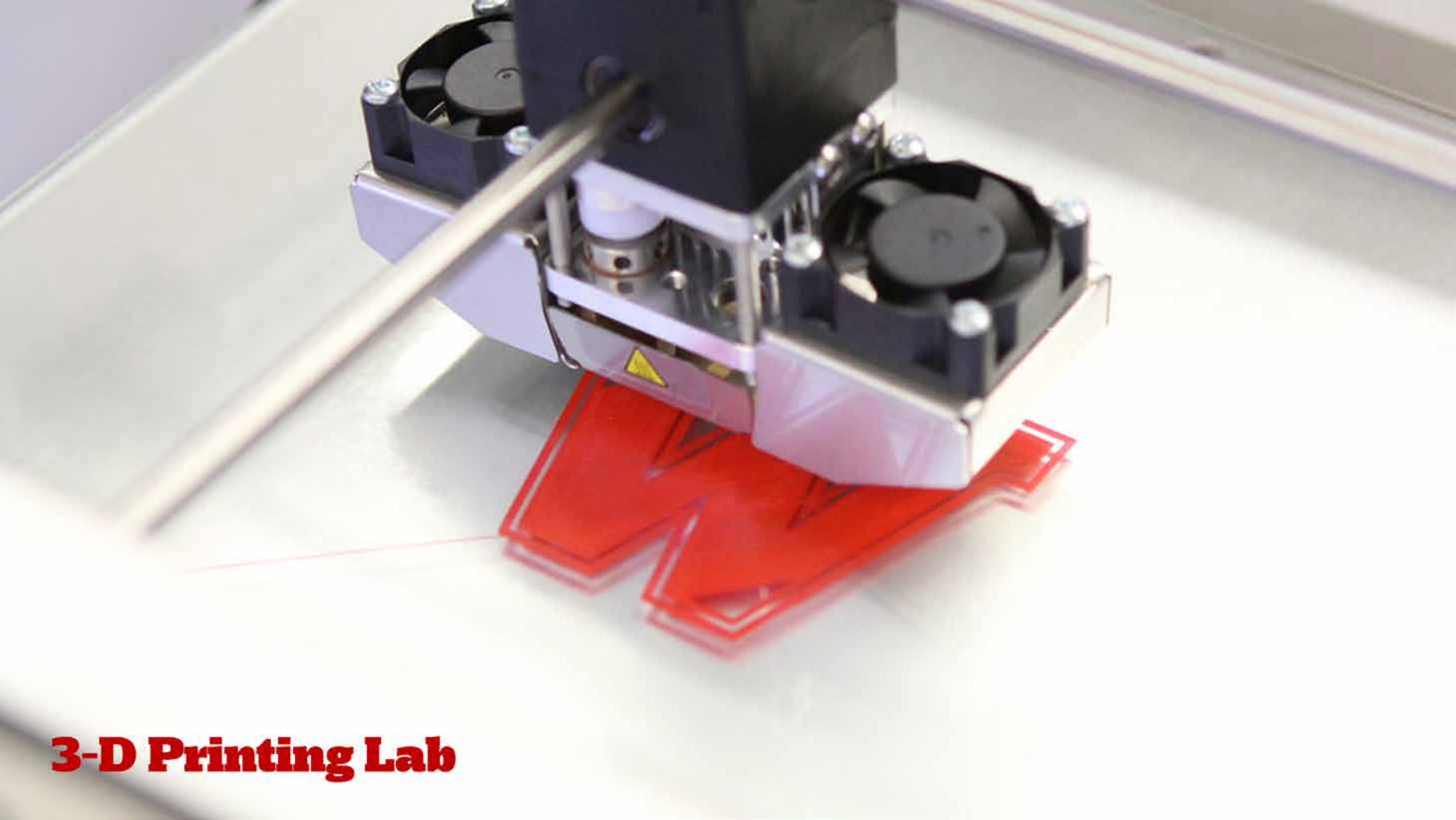
Hays Hall



Chemistry Lab



Biochemistry Lab



3-D Printing Lab



Center Hall

Wabash.



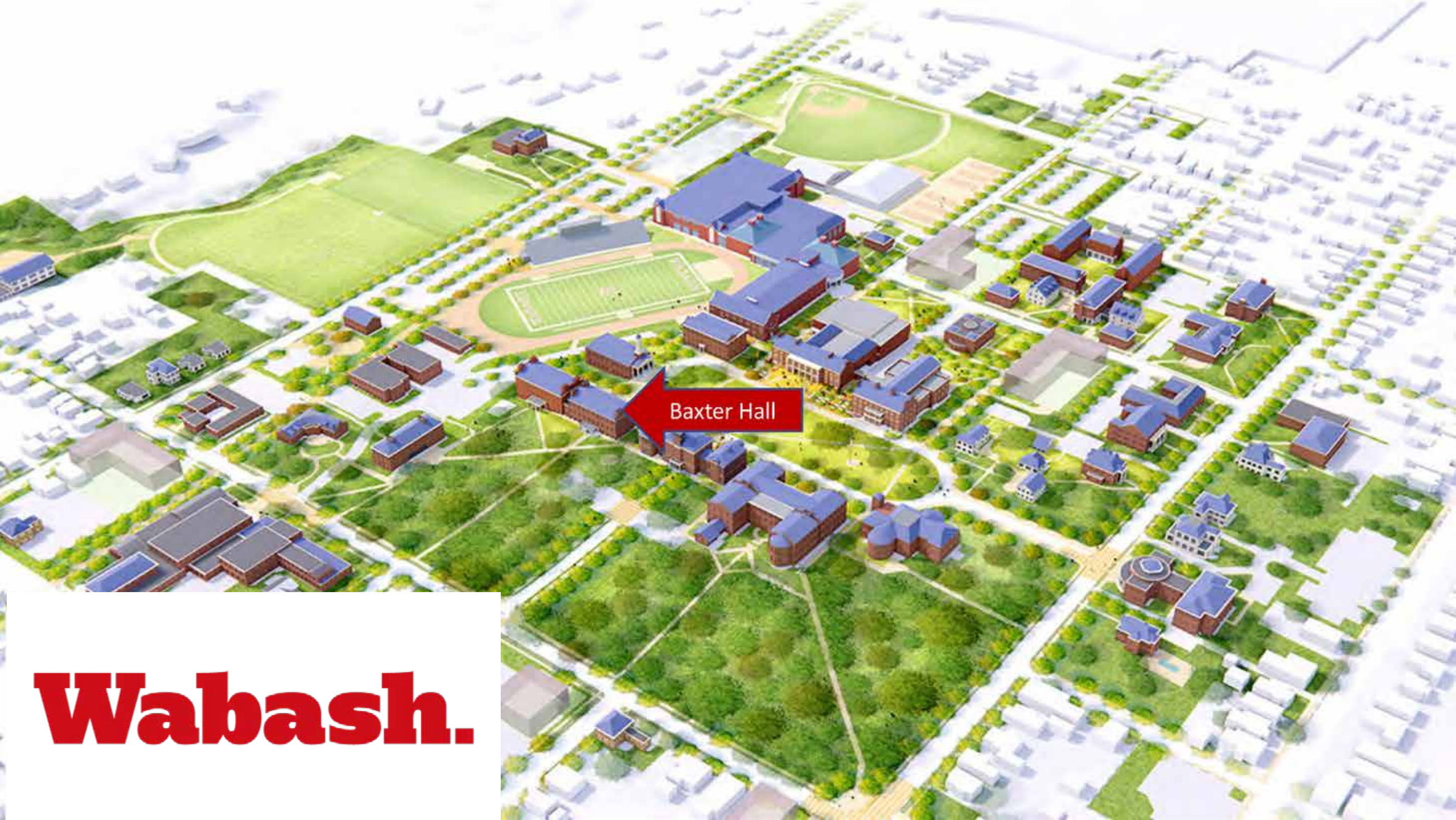
Center Hall and Old Entrance



Center Hall and Milligan Clock



Center 216



Baxter Hall

Wabash.



Baxter Hall



Baxter 101



Fine Arts Center

Wabash.



Fine Arts Center



Ball Theater



Chamber Orchestra in Salter Concert Hall



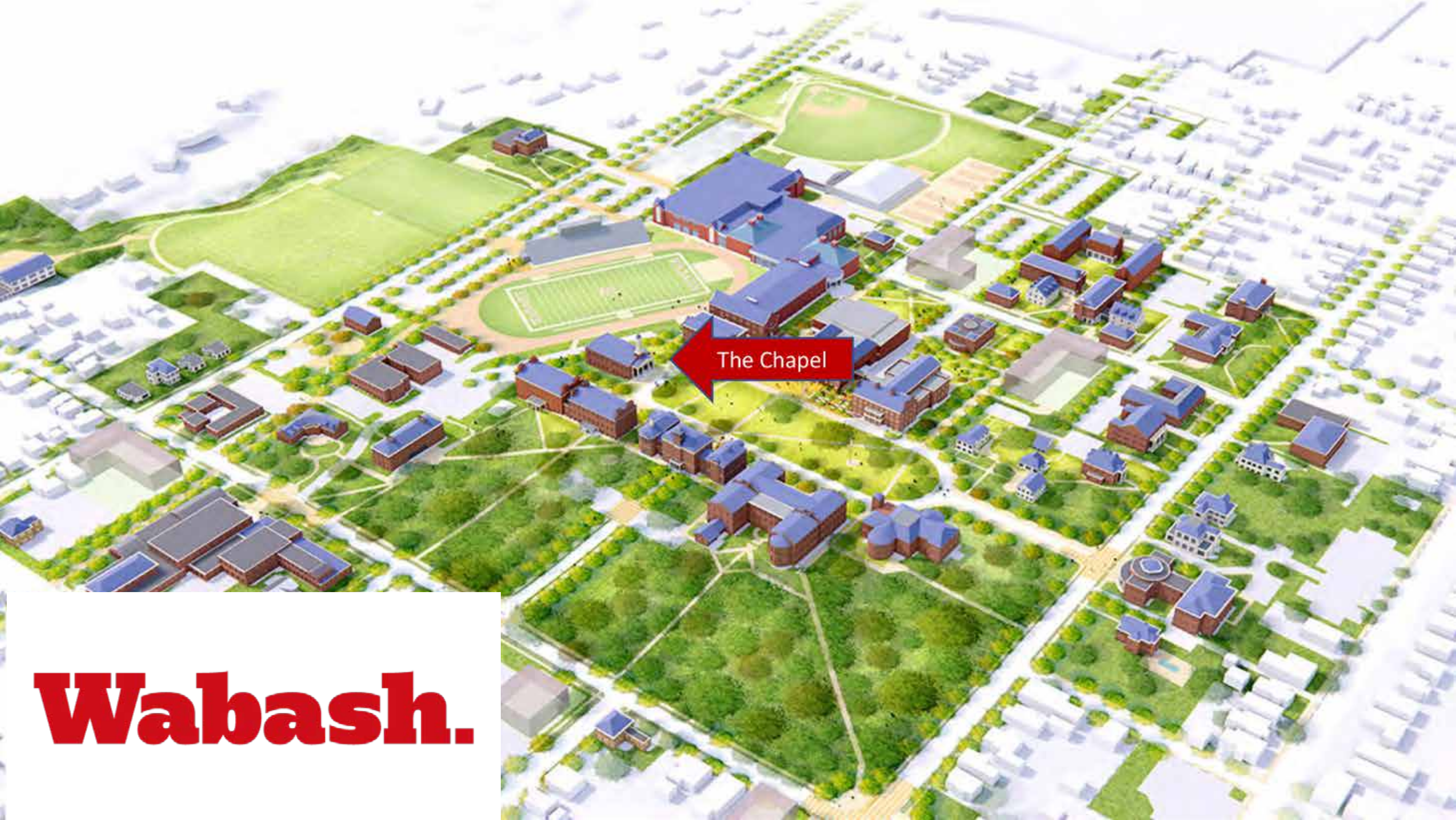
Glee Club in Salter Concert Hall



Digital Filmmaking Studio



Moot Court in Salter Hall



The Chapel

Wabash.



The Mall



Pioneer Chapel



Special Events in the Chapel



Chapel Talk



Ring-In Ceremony in the Chapel



Commencement at Little Giant Stadium

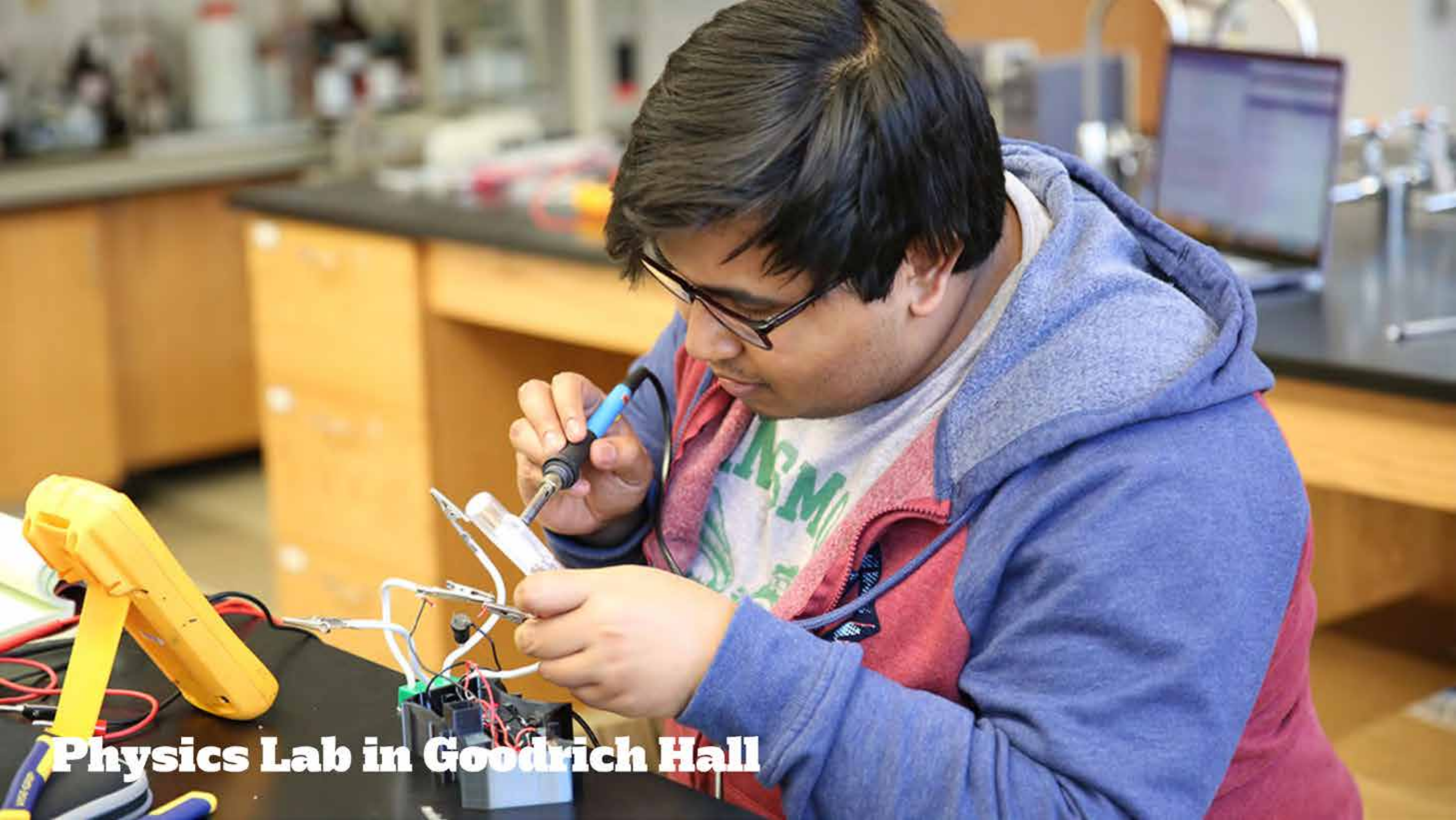


Goodrich Hall

Wabash.



Goodrich Hall



Physics Lab in Goodrich Hall



Allen Center

Wabash.



Allen Athletics and Recreation Center



“Chadwick Crazies” in Chadwick Court



Class of 1952 Fitness Center



Weight Room



Class of 1950 Natatorium



Johnson Track in Knowling Fieldhouse



Little Giant Stadium and Huntsman Track



Fans at Little Giant Stadium



University

WABASH
College

WABASH TENNIS
University

WABASH
TENNIS

Collett Tennis Center



Wabash Soccer at Fischer Field



Fans at Fischer Field



Lacrosse on Fischer Field



Goodrich Ballpark



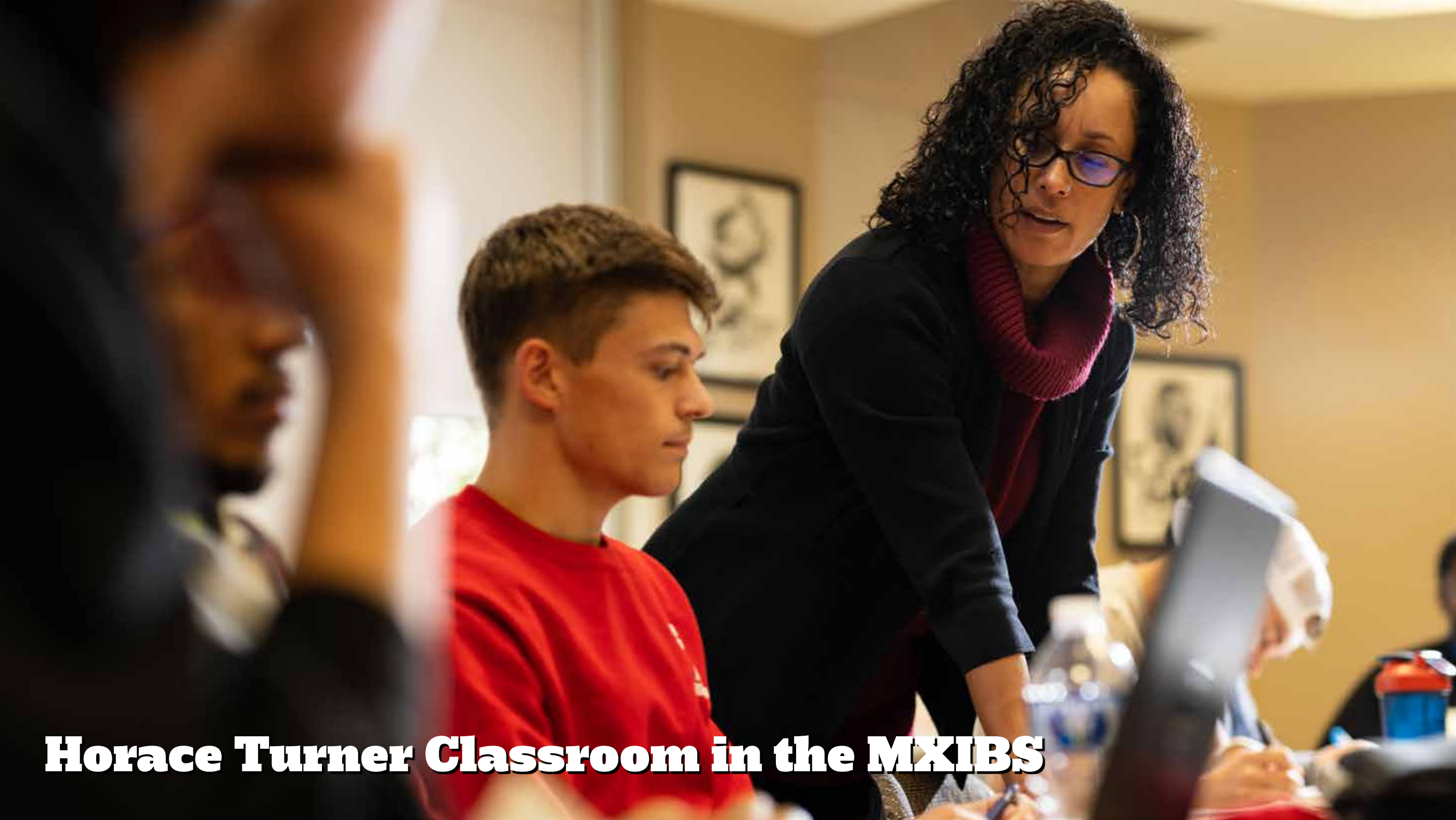
Shelbourne Wrestling Center



Wabash.



Malcolm X Institute of Black Studies



Horace Turner Classroom in the MXIBS



Nathaniel Mary Quinn '00



Sparks Center

Wabash.



Frank Hugh Sparks Center



The Great Hall in the Sparks Center



Sparks Center



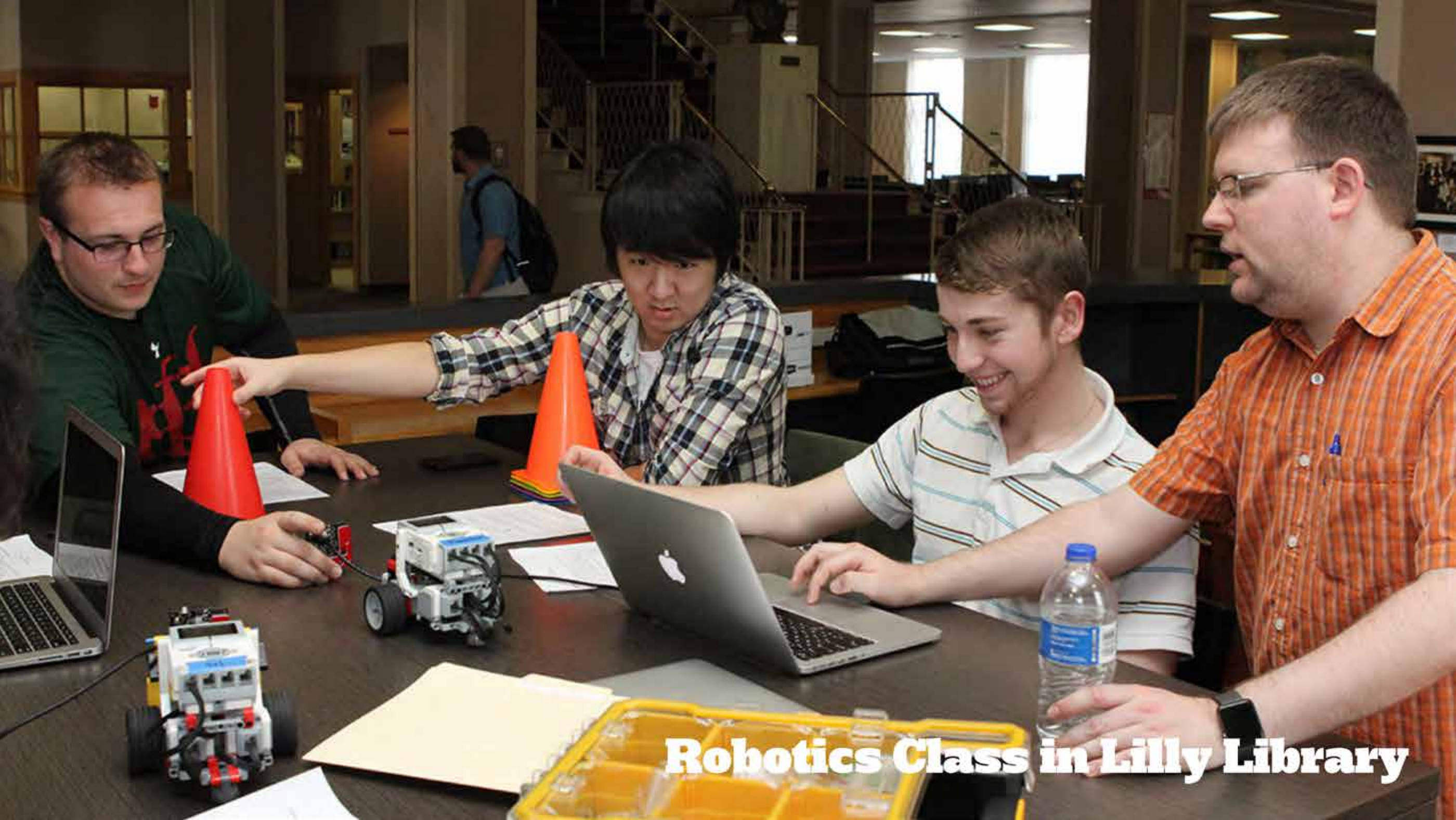
Wabash.



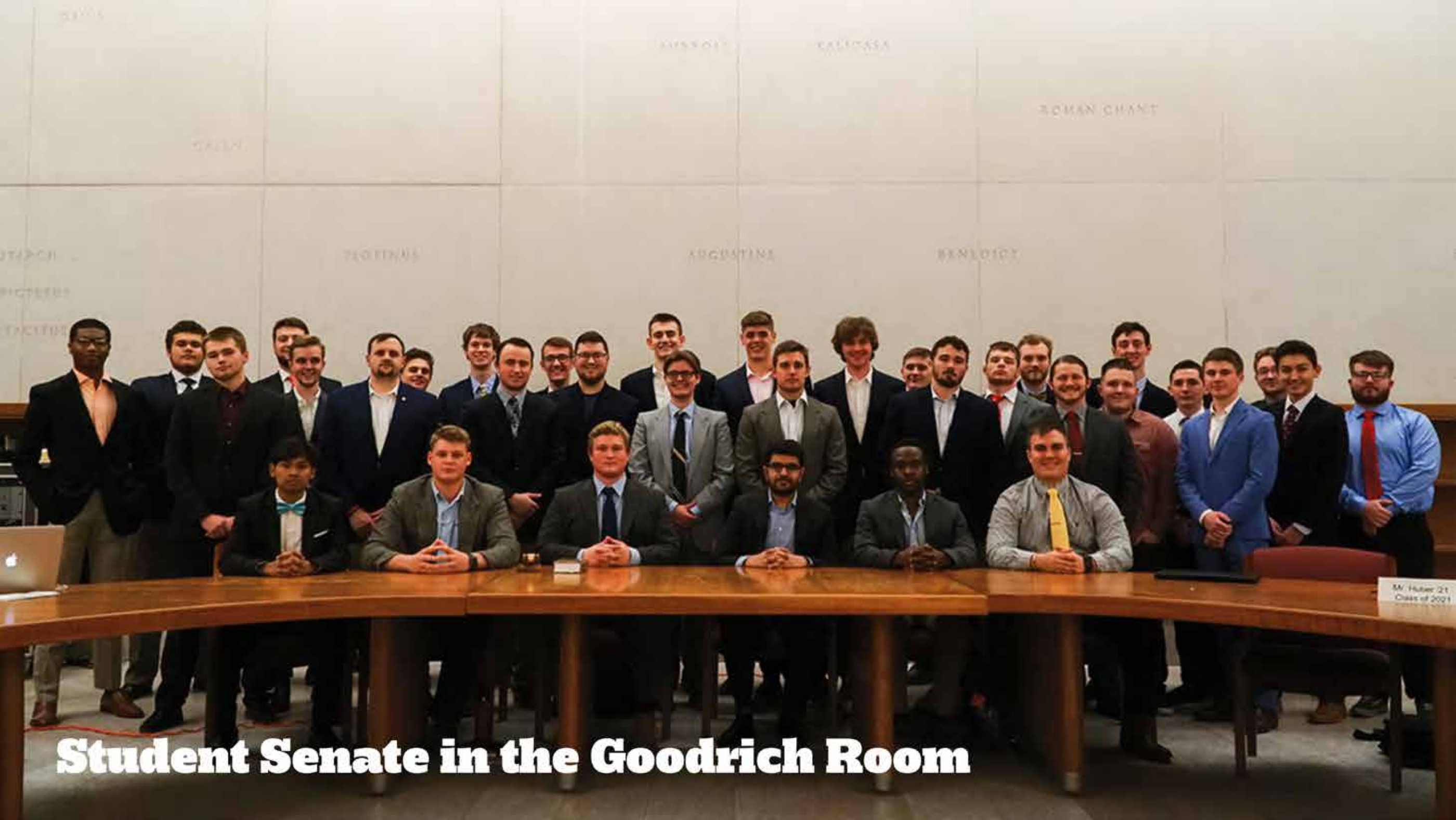
Lilly Library



Rare Books Seminar Room



Robotics Class in Lilly Library



Student Senate in the Goodrich Room



Academic Support



Wabash.



Forest Hall



Trippet Hall

Wabash.



Byron K. Trippet Hall

Wabash.