



Prog 21 Environmental Epidemiology 2020-2021AD: Online and Hybrid Editions

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2020AD

For the 2021 online version of Environmental Epidemiology, a series of videos were created to introduce each week's material and key learning objectives. The videos were created to appear as transmissions from an alternative America that implemented a coordinated and highly resourced response to the COVID-19 pandemic. The goal was to create a weekly viewing event that brought the students to the course web page and engaged the students in the coming material.



What We Did: Teaching assistants from past years, who had graduated and are working epidemiologists, were recruited to act in the videos, as were a frontline Emergency Department physician and Pfizer's Head of Safety Surveillance Research, who was overseeing vaccine safety. Lastly, we hired Marky Ramone, drummer of The Ramones, and Sawborg Destructo, from the twice Grammy Award-nominated horror metal band, GWAR. Each video depicted a transmission from a pandemic response bunker, or Pfizer's vaccine development coordination submarine, in alternative America. The transmissions were plagued with static in which ghosts of other transmissions can be seen. These ghost transmissions act as a "film within the film," suggesting that all is not as it seems. Building upon clues throughout the series, the finale reveals that the current course TA is a Matrix Agent who has been masterminding the course

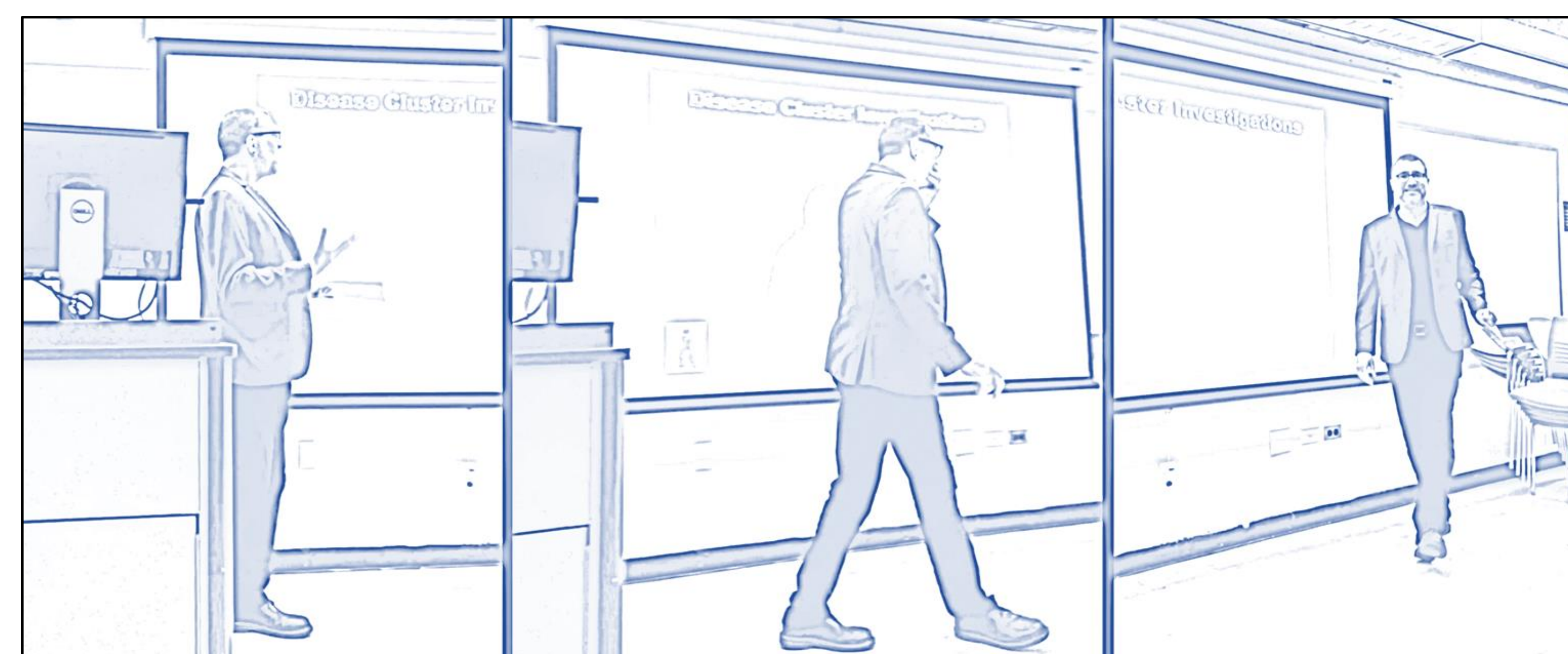
and that "Dr. Rundle" is merely an app in the Matrix.

Impact: These ideas were implemented on the fly in a short time frame, and so a formal evaluation was not conducted. Viewing data from CourseWorks and student course evaluations suggest that these introductory videos were a source of engagement with the material that delivered key learning objectives for each course session.

Lessons Learned: High-end green screen, video compositing, and video morphing technology are cheaply or freely available. Celebrities can be hired on CAMEO.com for affordable prices, and the fees can be paid via Columbia faculty discretionary accounts.

2021AD

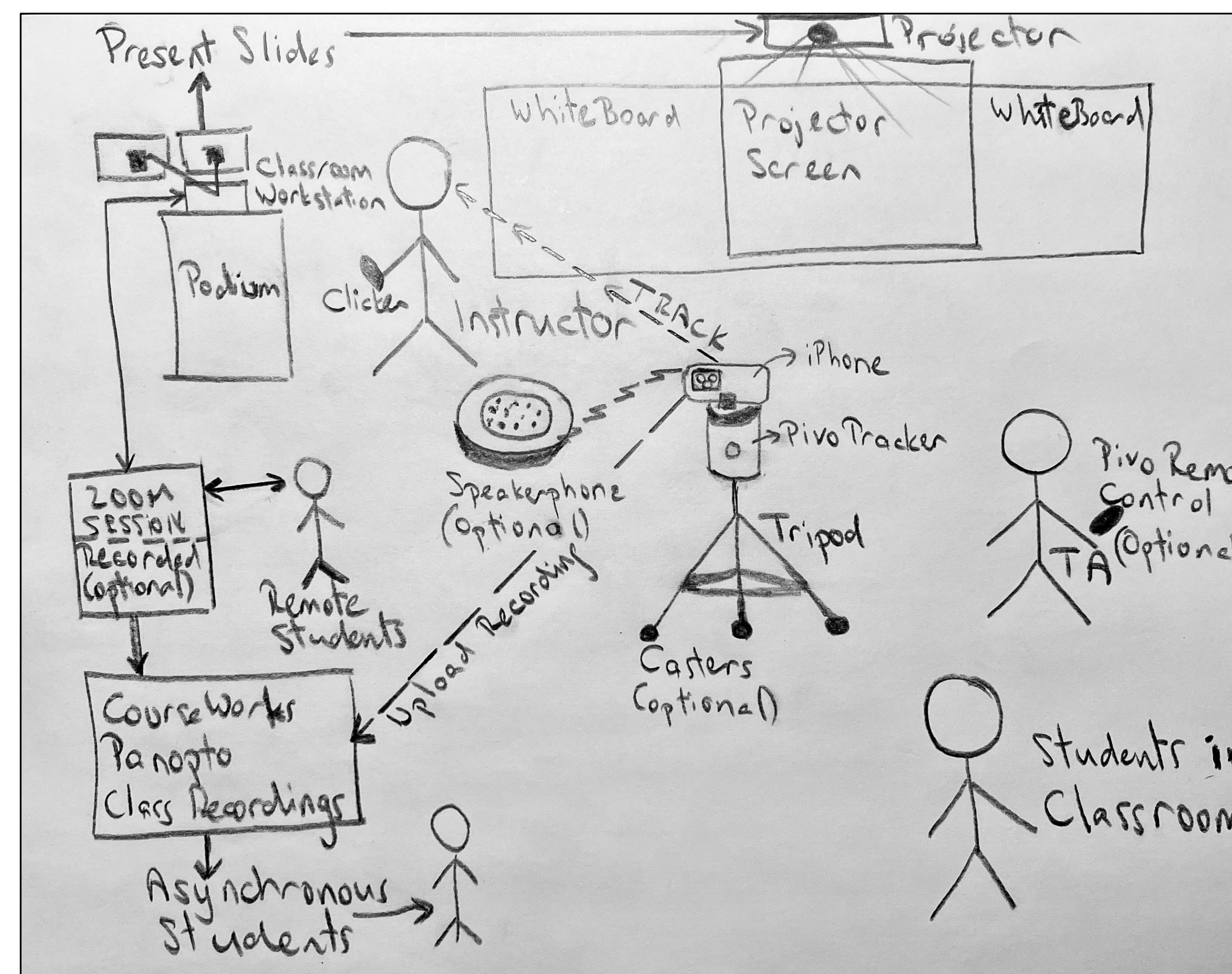
With the return to in-person learning in the fall of 2021, we faced three challenges that necessitated providing class videos; a. Students with illness or exposure requesting to participate, b. Instructors with exposure and other reasons having to move class to online format, and c. Students missing class due to family care or mental health reasons. Every scenario required fast reaction and availability of lecture content to the students in less than 24-hours after class to continue learning without delay. The classroom we were teaching in did not provide adequate built in-room video capability, necessitating a DIY approach.



What we Did: We recorded the face-to-face synchronous class sessions on a tripod mounted iPhone that automatically tracked the instructor's movements around the classroom and we uploaded videos into Panopto. We combined these videos with Zoom recordings when classes moved online. Students missing in-person classes watched the recordings. Additionally, we offered a Zoom link for students to participate in classes in real-time.

Impact: The integration of in-person, live zoom, recorded video improved the flow of the Hyflex approach to teaching. When students had to miss the class, they could catch up with the classroom experience—additionally, recorded materials allowed students to review content retrospectively and enabled asynchronous learning.

Lessons learned: A smartphone attached to a low-cost tripod is the most basic solution. An iPhone mounted on a consumer grade motion tracker (e.g., Pivo)



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allows the instructor to walk in class yet keeps them in the center of the video frame. The class filming does not interfere with delivery of class content; the automated video tracking allows the instructor to teach the class as they normally would and forget about the filming. The classroom experience, combined with consistently recorded in-class and Zoom sessions, is delivered to all students at the same level. The costs (hardware and additional TA time) are justified for a highly scalable and engaging learning experience. We predict that this Hyflex mode will be our new standard for a while.

