

Thesis Project Portfolio

Breaking Down the Barriers Inhibiting the Introduction of Emerging Industries into Central Appalachia

(Technical Report)

Redefining the Role of Pharmaceutical Companies in the Appalachian Opioid Crisis

(STS Research Paper)

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Sociotechnical Synthesis

Appalachia is a region well known for its high poverty and unemployment rates as well as high rates of drug overdose. This portfolio works to draw attention to and provide more information regarding these devastating issues as central Appalachia is an area most severely affected by the named problems. The capstone project and STS research address unemployment rates in Appalachia and the Appalachian opioid crisis respectively. Research shows that unemployment, poverty, and drug use can be cyclically correlated and this can be observed in central Appalachia. The problems addressed have an apparent effect on each other, and thus, the nature of their relationship is illustrated throughout both projects.

Breaking Down the Barriers Inhibiting the Introduction of Emerging Industries into Central Appalachia

Historically, unemployment rates in Appalachia – particularly central Appalachia – have ranked among the lowest in the nation. Unfortunately, the fall of the coal industry, a leading industry in the region, has only contributed to such statistics. While the loss of one of its leading industries has hit its economy hard, there is a future in Appalachia. This future, however, will not be dependent on only one industry as there likely never will be another coal industry in Appalachia. The future of Appalachia is dependent on the introduction of multiple industries.

Appalachia has the capacity to take on emerging industries but in order to ensure their success in the region, people must be open to the work. As, many times, people do not consider working in sectors different from the one they have historically worked in, the given task can be difficult. However, due to the decline in coal jobs across the area, miners must begin to consider other work and behavioral insights can be used to help them do so.

Companies electing to use choice architecture as well as other behavioral insights could be an important part of their recruitment processes across Appalachia. These strategies can be applied to the many stages of recruitment including: advertisements; job descriptions; application and CV screening; shortlisting; as well as interviews. However, to best apply the concept of choice architecture in recruitment, it will be important that new industries appeal to the displaced workers' identities. This research aims to provide important characteristics of displaced Appalachian workers, particularly miners, for companies to utilize in their recruitment processes across the region. The future of Appalachia depends on new industry and employing its people; behavioral science could be a part of that solution.

Redefining the Role of Pharmaceutical Companies in the Appalachian Opioid Crisis

The combination of new industry and behavioral science could improve upon employment and poverty statistics in central Appalachia. However, in order to begin recovering from the opioid abuse which has impacted the region, the causes of the opioid epidemic must first be explored. In 1996, Purdue Pharma released OxyContin, the first form of Oxycodone which allowed dosing every 12 hours. A controlled-release medication, the drug was marketed as being less addictive, less prone to tolerance, and less prone to abuse than other opiates, and was targeted for non-cancer patients with chronic pain. Due to the density of blue-collar workers in central Appalachia as well as the history of high prescription rates of pain relievers in the area, Appalachia became a market worth pursuing in the eyes of drug companies. Naturally, the presence of the companies in Appalachia expedited the progression of the opioid crisis there. The consequences following the launch of OxyContin devastated Appalachia and thus, the following research question must be addressed: What is the role of drug companies in the Appalachian opioid crisis? Given the controversy surrounding the launch of the technology and its effect on

the people and communities of Appalachia, Purdue Pharma's release of OxyContin will be analyzed through two Science, Technology and Society frameworks: technological fix and technological determinism. The research described aims to better appropriate blame for the progression of the Appalachian opioid crisis and bring awareness to epidemic that is the crisis itself. Additionally, this research will provide yet another example of technology's ability to shape the progression of society due to the inevitable consequences that accompany its release.

The capstone project and STS research focus on real problems in Appalachia. Unemployment and high rates of overdose are statistics which oftentimes coincide. Thus, conducting both the capstone and STS research simultaneously was of great value. Sources from one project proved to be valuable sources for the other project and vice versa. Furthermore, the overlap between the subjects produced more informed projects as a result. As research conducted on central Appalachia is scarce, this portfolio, in full, serves as a call for action.