

AFTER DEATH: IMPLEMENTING SUSTAINABLE FUNERARY PRACTICES IN THE UNITED STATES

Introduction: Approximately 2.5 million people die within the United States each year, which leads to an environmental impact that is not often examined. The two main funerary practices, traditional burial and cremation, pose environmental issues including contamination of the water table through the leaching of embalming fluid, the excessive use of resources for casket construction, energy consumption through burning which adds to climate change effects, and the need for space. This project focuses on alternatives that could be implemented within the U.S. to mitigate the environmental issues associated with the two main funerary practices. The **research question of this project is “what is the most effective and sustainable way to deal with the dead under current laws in America?”**



Figure 1: Traditional Burial Service

Figure 2: Headstones in a Cemetery



Methods: For this project, an analysis of different funeral technologies around the globe was undertaken and those that had the highest register of social and legal acceptance within the United States were chosen. An analysis of peer reviewed articles relating to each different funeral technology that was deemed culturally and socially acceptable, along with analysis of different laws on each was also conducted. Using this research, a comparison of these different funeral technologies was conducted using criteria such as space considerations, legality, cost, emissions and energy used in the process, and the likelihood of being culturally accepted.

Method	Cost (\$)	Energy Requirements	CO ₂ Emissions (lbs)	Space Requirements	Legal
Resomation	2,395	low	moderate	low	Yes*
Promession	2,000	low	low	low	No
Natural Burial	8,300	moderate	moderate	high	Yes*
Traditional Burial	9,500	moderate	moderate	high	Yes
Cremation	2,395	high	high	low	Yes

Table 1: Comparison of different funeral technologies
Note - * not legal everywhere

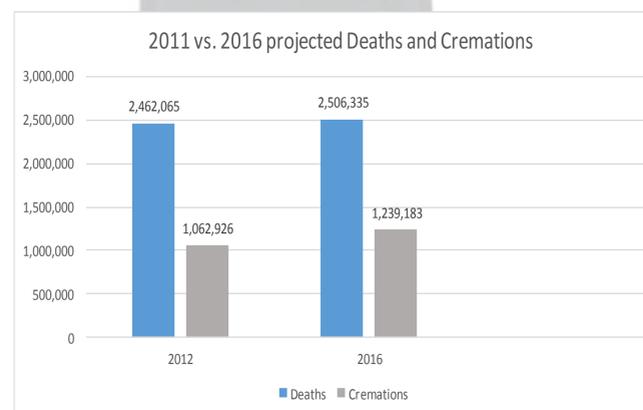


Figure 3: 2012 vs. 2016 Projected Deaths and Cremations within the U.S.

Results: The current funerary practices have many costs. 3.5 gallons of embalming fluid is used to embalm the average adult. About 2 million Americans are embalmed each year which means 7 million gallons of formaldehyde are being deliberately placed in American soil each year. Cremation is energy intensive and has an emissions impact of 6.8 million metric tons annually. Alternate funerary practices that could be adopted include:

- **Promession**-freeze drying the body and then vibrating it to shatter the remains.
- **Resomation**- dissolving the body in a basic solution so that only the bone fragments remain.
- **Natural Burial**-burying the body without embalming chemicals, in a biodegradable shroud or wood casket.



Figure 4: Bone Fragments inside a Resomator

Figure 5: A Resomator



Conclusion: The findings indicate that viable alternatives to traditional burial and cremation exist. The **most sustainable, yet culturally acceptable alternative that can currently be adopted to reduce some of the issues related to conventional burial and cremation is the implementation of natural burial and resomation** on a wider scale. The major barrier to these is that there may be cultural resistance due to personal preferences and religious beliefs. The way the body is dealt with in certain cultures is very significant which plays a crucial role on individuals decisions when deciding on a funeral technology to use for a loved one.