***Name:\_Kathryn Atherton\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Description****: Twice throughout the semester. Teams must meet during the lab prep on Mondays and present their products to each other. Afterwards, the team must choose which report from the group should be presented in front of the whole class. The presentation should include a Power Point Slide with information about the selected product or process. The team member who wrote the report will get extra credit points, and will need to present their report to the whole class. After all of the class presentations, everyone will vote which team had the best report. Extra credit points will be assigned to the winning team.* **Everyone must turn in a report during lab. Every group must select their favorite report to be presented in class on the above dates. As engineers (and people), it is important to think and analyze things on your own, plagiarism will be reported. Your sources must be included at the end of the report.**

This report must highlight a new bioproduct, bioprocess, food process, or food product. The key here is to choose something that has to do with bio/food-process engineering. A few examples will be presented before the reports are due.

**Topic:** LSTS Method developed by Purdue Food Science Professor

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| **Summary in your own words:**  Over the summer, Purdue Professor Bruce Applegate in the Department of Food Science found that increasing the temperature of milk by 10 degrees for less than a second kills over 99% of the bacteria left over after pasteurization. This can add up to seven weeks of shelf life to cold milk. For now, the process is a supplement to pasteurization, but does not add energy to the system, which can reduce waste and bring milk to places where the transportation time with only pasteurization only allow milk to have a shelf life of a few days. |

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| **How is this new and innovative?:**  The process uses new technology developed by Millisecond Technologies in New York. It kills even more bacteria after pasteurization and will allow more access to milk in locations where it takes a long time to deliver milk. It does not compromise taste or nutrients. |

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| **Critical analysis (environmental impact, shortcomings, replacement of other products, market size):**  I think this new process and technology is incredible. If it does everything that it promises by reducing the waste of milk and keeping the energy consumption the same as pasteurization, it seems to have no shortcomings. The company has created the technology to easily be integrated into small and large scale pasteurization process equipment. The cost of the equipment may be expensive for some small-scale farms to add to their process, but in the long run, the prevention of waste of product will pay for itself. |

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| **Additional comments:**  My favorite part of this process is the fact that it was a study done by a Purdue professor. |

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| **Source(s):**  INTEGRATING MST. (n.d.). Retrieved November 13, 2016, from http://millisecondtechnologies.com/about-mst/integrating-mst/  Meyer, P., Parker, K., Zhu, T., Morgan, M., & Applegate, B. (2016, May 31). The effect of a novel low temperature-short time (LTST) process to extend the shelf-life of fluid milk. Retrieved November 13, 2016, from http://springerplus.springeropen.com/articles/10.1186/s40064-016-2250-1  Rapid, low-temperature process adds weeks to milk's shelf life. (2016, June 19). Retrieved November 13, 2016, from https://www.purdue.edu/newsroom/releases/2016/Q3/rapid,-low-temperature-process-adds-weeks-to-milks-shelf-life.html |