Neuromorphic Technology Outline

1. Thesis – Advancements in technology have helped scientists gain a better understanding of the human body, and now neuroscience is giving computer scientists insight into building more advanced computers.
	1. Scientists are working on developing computers that operate like a human brain.
	2. Building these kinds of computers will also give insight into how human brains function.
2. Computers do not work as efficiently as people tend to assume.
	1. A human brain has the ability to do a lot more with a fraction of the power that it would take a computer.
	2. Computers require lots of specialized programming and instruction.
3. There are many institutions that have been working to advance neuromorphic technology.
	1. Carver Mead is an engineer considered the father of neuromorphic computing.
	2. The Human Brain Project aims to build a simulated brain by the year 2023.
4. There are a few criticisms against neuromorphic technology.
	1. There are thousands of different neurons working inside our bodies, so it would be virtually impossible to directly imitate all of them.
	2. This research is time-consuming and expensive.
5. Conclusion – As neuromorphic technology continues to develop, it could bring about many benefits and changes to the world.
	1. Making computer more efficient could lead to the development of many other innovative tools.
	2. This research will help humans understand themselves better.

References

Calimera, A., Macii, E., & Poncino, M. (2013). The Human Brain Project and neuromorphic computing *Functional Neurology*, *28*(3), 191 – 196 .

Hof, R. (2014, November 18). Qualcomm’s Neuromorphic chips could make robots and phones more astute about the world | MIT technology review. Retrieved 28 October 2015, from <http://www.technologyreview.com/featuredstory/526506/neuromorphic-chips/>

Orchard, G., Basu, A., & Thakor, N. (2013). Building a Silicon Nervous System Neuromorphic Engineering. *Innovation*, *12*(1), 25-30.

The Machine of a New Soul. (2013, August 3). Retrieved 28 October 2015, from <http://www.economist.com/news/science-and-technology/21582495-computers-will-> help-people-understand-brains-better-and-understanding-brains

Waldrop, M. M. (2013). Neuroelectronics: Smart connections. *Nature*, *503*(7474), 22-24.