

March 17th, 2012

COMM 101
Informative Speech
Condensed Outline

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1. Introduction

- a. Exponential scientific data growth
- b. CPU computer power cannot keep up
- c. Huge emerging gap between researchers and results
- d. Big problems will remain unanswered
- e. Less investment in computing equipment, more in staff

2. Exponential data growth

- a. Doubling every 2 years [1]
- b. U of I IBEST data is ~33 TB, growing
- c. <10% data used in final research [2].

3. The death of Moore's Law

- a. Back in 1965, Moore's Law declared [3]
- b. Transistors density doubled every 2 years
- c. CPU power roughly the same
- d. Growth continued for 40 years
- e. Transistors approach to size of atom
- f. Who boldly declared the law dead?

4. Conclusion

- a. High Performance Compute Clusters
- b. Groups of computers, one huge CPU
- c. Amazingly powerful and complicated

Bibliography

1. Szalay, Alex; Gray, Jim. "2020 Computing: Science in an exponential world". *Nature* 440, 413-414 (23 March 2006)
2. Foster, James. *Visualizing Human Microbiome Ecosystems*. University of Idaho: Computer Science Colloquium, December 7th 2010. Seminar.
3. Manek Dubash (2005-04-13). "Moore's Law is dead, says Gordon Moore". *Techworld*. Retrieved 2006-06-24