

# Enhancing Student Engagement

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## Part 1 - My Educational Philosophy

Already aligned with Kuh's High-impact Practices

Problem with my Philosophy and a Solution

## Part 2 – A Lesson Plan for Deep Learning: Bi/tri-nomials

Deep learning := Concrete/Kinesthetic/Peer/Visual/R-W

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Collaborative Project

Writing-intensive Courses

Undergraduate research

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Undergraduate research

Already met in 2007 and 2008 versions of

**STAT 218: Computational Methods in Statistics**

See student Research Reports **UCDMS 2008/5** and **UCDMS 2009/5**

(including a **recent submission** to a peer-reviewed Stats. Ed. Jnl.!)

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- ▶ **learning community** (extra-curricular **numb3rs club**)

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Lec 1. Quincunx History (Galton late 1800s, UC student-built07)

Lec 2. Peer-learning with Quincunx (guided chit-chat 10 mins.)

Lec 3. Mathematical Description of guided chit-chat (30 mins.)

Lec 4. Algorithmic Description for weekly lab (10 mins.)

Lab 5. Interactive **Visual Cognitive Tool** to reinforce Lec 3&4

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Hopefully, this will achieve the goal of deep-learning where the students are confident in a co-operative mathematical/statistical analysis of problems they may encounter in their professional careers as Statisticians from fundamental principles.