Implementing the Common Core’s Promise of Bringing Statistical Curricula into Line with Recommendations of NCTM, MAA, & GAISE

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Implementing the Common Core’s Promise of Bringing Statistical Curricula into Line with Recommendations of NCTM, MAA, & GAISE

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Common Core is a new package for not-new ideas

- National Council of Teachers of Mathematics
- Mathematical Association of America
- American Statistical Association
- Guidelines for Assessment and Instruction in Statistics Education
- Common Core State Standards for Math
MATHEMATICAL (STATISTICAL) PRACTICE

- Foster active learning in the classroom
- Stress conceptual understanding, rather than mere knowledge of procedures
- Emphasize statistical literacy and develop statistical thinking
- Use real data
- Use technology for developing conceptual understanding and analyzing data
- Use assessments to improve and evaluate student learning
MATHEMATICAL (STATISTICAL) PRACTICE
# Comparison Chart

<table>
<thead>
<tr>
<th>NCTM Process Standards</th>
<th>CCSS Standards for Mathematical Practice</th>
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| Problem Solving        | • Make sense of problems and persevere in solving them (MP1)  
|                        | • Use appropriate tools strategically (MP5)                     |
| Reasoning and Proof    | • Reason abstractly and quantitatively (MP2)  
|                        | • Critique the reasoning of others (MP3b)  
|                        | • Look for and express regularity in repeated reasoning (MP8) |
| Communication          | • Construct viable arguments (MP3a)                              |
| Connections            | • Attend to precision (MP6)  
|                        | • Look for and make use of structure (MP7)                       |
| Representations        | • Model with mathematics (MP4)                                   |
Consequences for K-12 Statistics Curriculum
Consequences for Collegiate Statistics Curriculum
CONSEQUENCES FOR COLLEGIATE MATHEMATICS EDUCATION CURRICULUM
Recommendations

• In-service mathematics teachers will need extensive professional development in creating relevant activities and assessment tools to accommodate less reliance on calculations.

• College mathematics departments will need to create two entry level statistics classes: 1) for mathematicians and statisticians and 2) for everybody else.

• Pre-service teachers will need to be taught how to develop lessons that will entice students to use data in decision making.
RESOURCES FOR ACTIVITIES

- CAUSE resources [causeweb.org]
- AIMS resources [www.tc.umn.edu/~aims/index.htm]
- WISE applets [wise.cgu.edu]
- Publishers’ Software
REFERENCES


• [http://www.corestandards.org/Math/Practice/](http://www.corestandards.org/Math/Practice/)