

# Can we teach Science without Lecturing?

Science and Mathematics Teaching  
and Learning

University of Manitoba

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Peta White

Michael McCoy

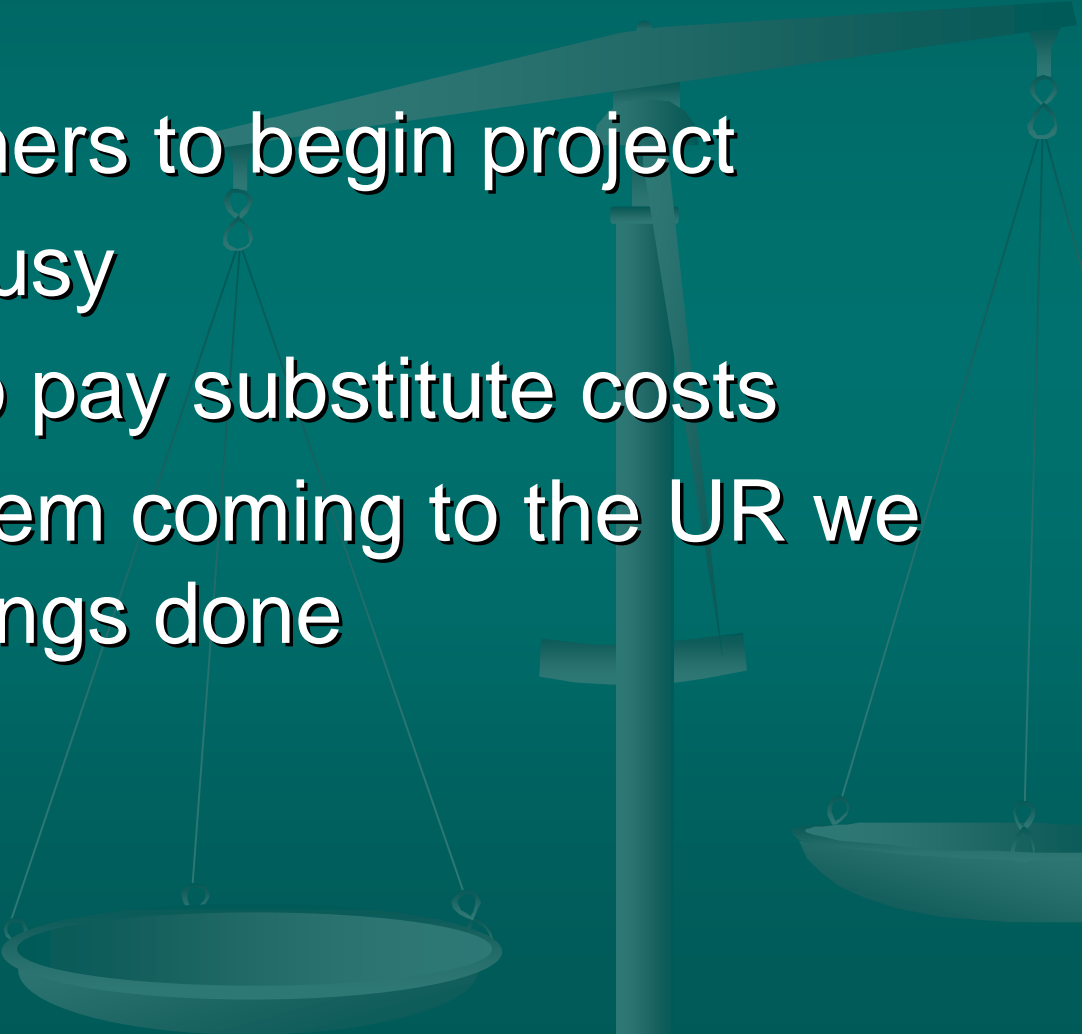
Warren Wessel



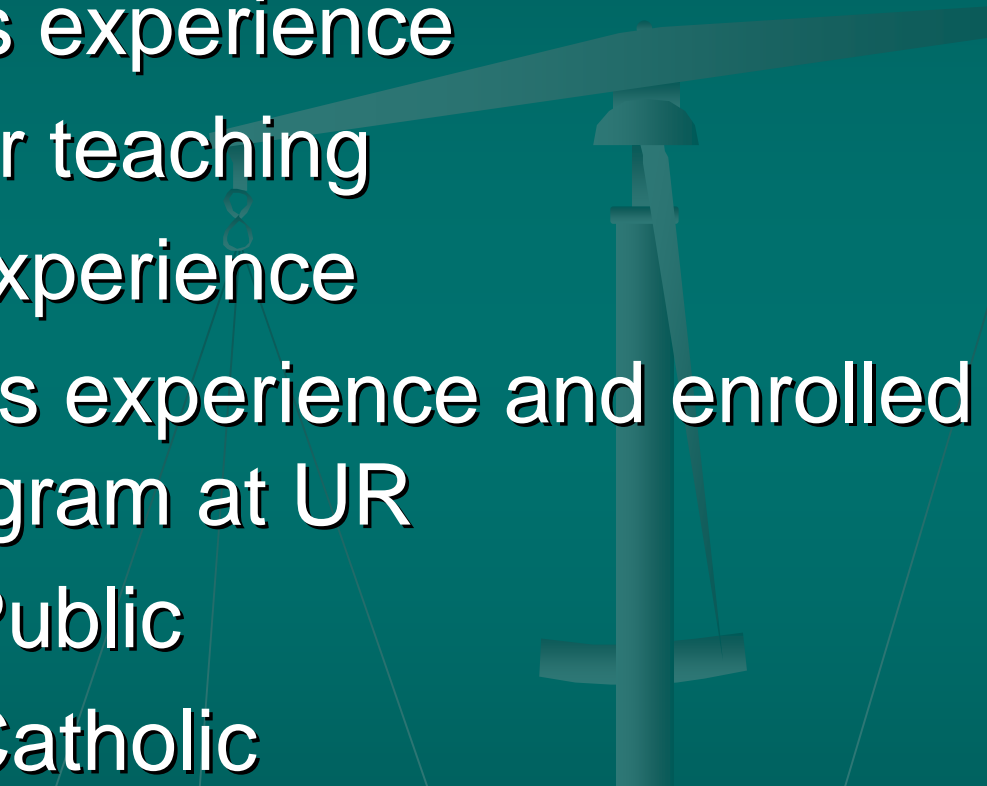
# Research Says Interesting Things about Science Teaching

- Aikenhead (2006) presents a wonderful range of research to assist us in deciding how to improve science teaching
- Many “conclusions” have been determined by research. The main problem is how to apply them to a regular classroom with 30 or so students.
- We wanted to help our teachers use research to inform their practice.

# 2006 - 2007

- Met with 6 teachers to begin project
  - They are very busy
  - Found money to pay substitute costs
  - Once we had them coming to the UR we did get some things done
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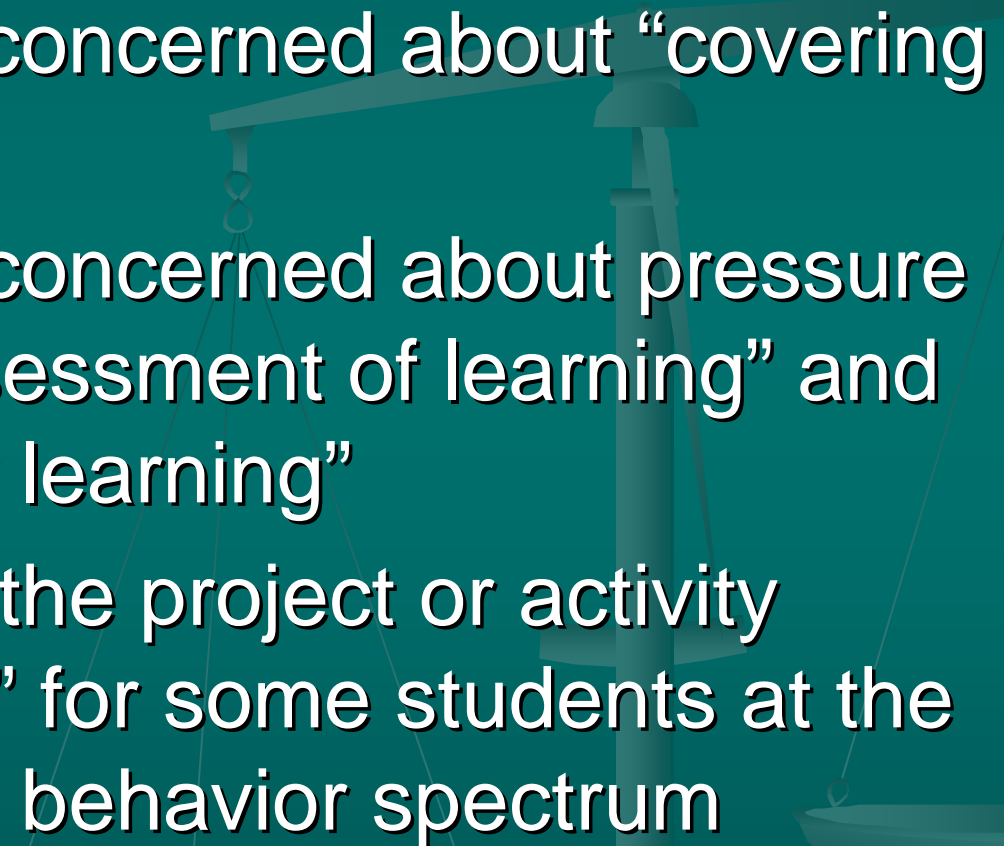
# Our Teachers

- 2 with 20+ years experience
  - 1 in her first year teaching
  - 1 with 4 years experience
  - 2 with 7-10 years experience and enrolled in an M.Ed. Program at UR
  - 4 from Regina Public
  - 2 from Regina Catholic
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# The first findings

- Teachers are driven by many forces including: provincial curriculum, provincial and local assessment, PISA results (indirectly), diversity in the classroom, conflicting messages from division, province, nation and worldwide pressures
- Did not accept our ideas for change easily, but wanted to.

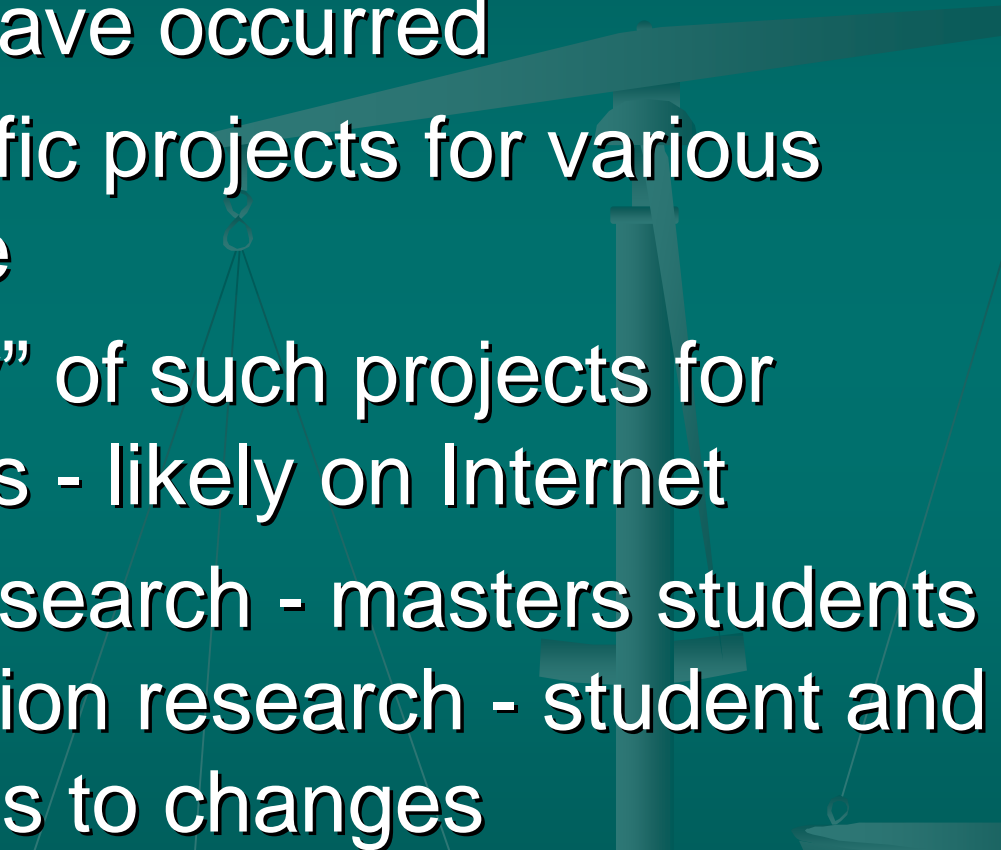
# More Issues

- Teachers were concerned about “covering the curriculum”
  - Teachers were concerned about pressure to carry out “assessment of learning” and “assessment for learning”
  - Concerned that the project or activity would not “work” for some students at the lower end of the behavior spectrum
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# Things we had to do first!!

- Convince them that projects/activities were not time stealers.
- It may seem obvious but we had to state for classroom teachers that projects were designed to cover material in the curriculum and that they did not have to “catch up” once the project was done
- Fortunately we had a couple of exceptional examples - The Souper Solar Heater and The Accelerometer

# 2007 - 2008

- First meetings have occurred
  - Designing specific projects for various areas of science
  - Create a “library” of such projects for science teachers - likely on Internet
  - Some related research - masters students working with action research - student and teacher reactions to changes
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# Thanks for Listening

- The NSERC CRYSTAL grant has allowed our group to do research that will produce interesting results but change takes time!

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