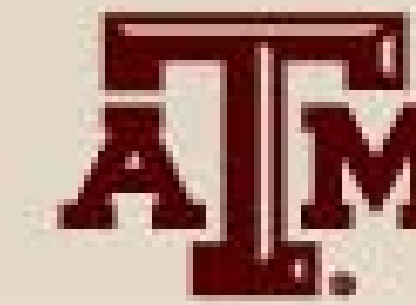




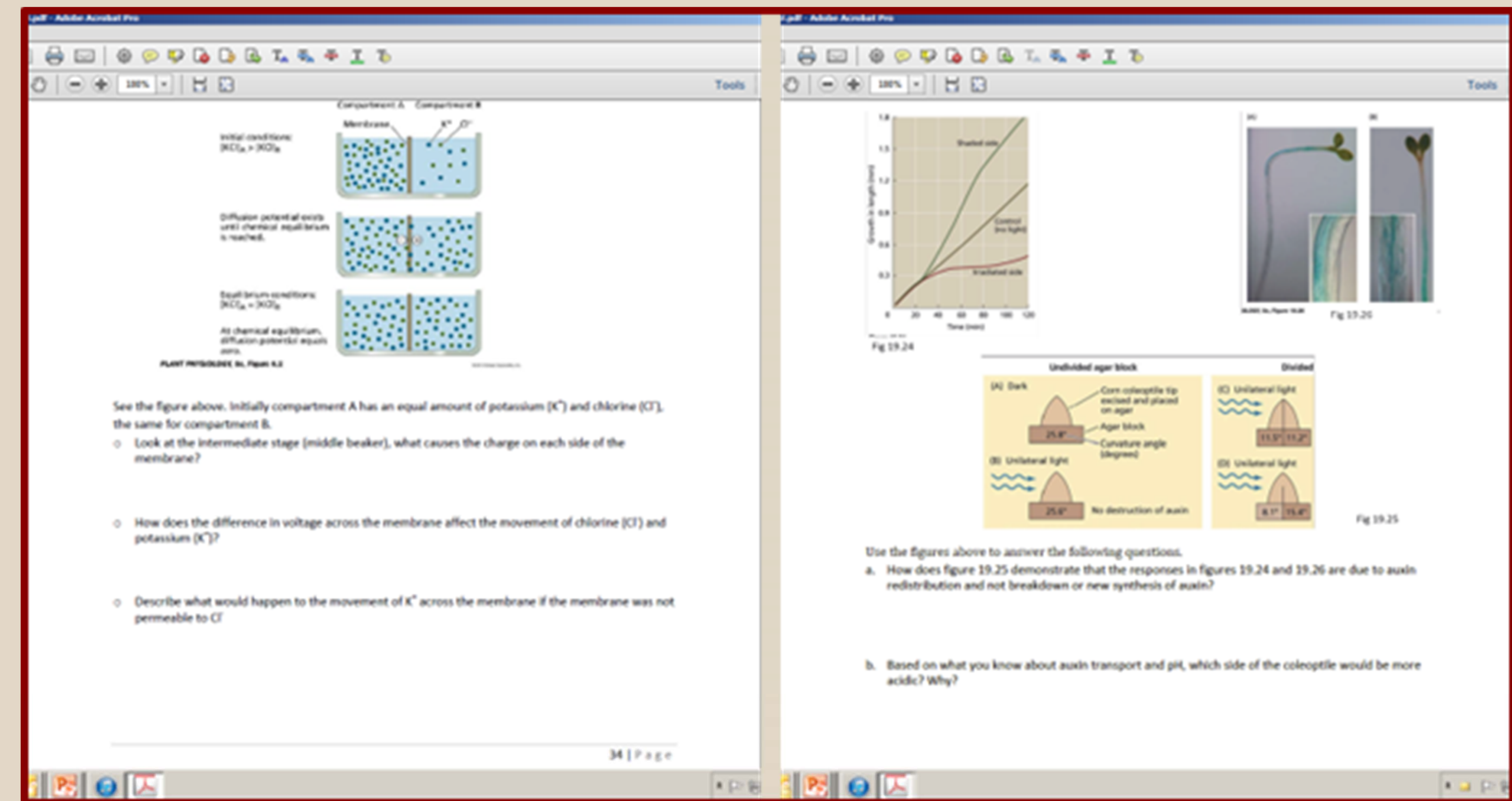
Montague – CTE Scholar Astrid Volder (2010-2011) Agriculture and Life Sciences



Students in Introduction to Plant Physiology commented that they enjoyed the course, but were struggling with the transition from multiple choice quizzes to short-answer exams as well as the sheer volume of material.

The Montague-CTE scholar award was used to develop an online workbook with a simple explanation and sample questions for each topic.

In addition, weekly quizzes were made much more difficult. Students were explicitly encouraged to work together on both the quizzes and the workbook.



The PDF version of the workbook was first used in the Fall of 2012 and average course evaluation increased from 4.15 to 4.45. Students indicated they found the workbook very useful in mastering the material.

The next steps will be to:

1. Make the workbook interactive so students can check their answers and self-correct
2. Increase the percentage of students actively using the workbook
3. Partially flip the course and devote one hour of class time on working through some of the more difficult questions

Outline:

Test 1

- Chapter 1: Plant cells
- Chapter 3: Water and plant cells
- Chapter 4: Soil, Plant, Atmosphere Continuum (SPAC)
- Chapter 5: Mineral nutrition
- Chapter 6: Solute transport
- Chapter 7: Light reactions

Test 2

- Chapter 8: Carbon reactions
- Chapter 9: Physiological and ecological considerations
- Chapter 10: Translocation in the phloem
- Chapter 11: Respiration

Test 3

- Chapter 12: Assimilation of mineral nutrients
- Chapter 13: Secondary metabolites
- Chapter 14: Signal transduction
- Chapter 15: Cell walls
- Chapter 16: Growth and development
- Chapter 17: Phytochrome
- Chapter 18: Blue light responses
- Chapter 19: Auxin

Final exam study materials-

(This is a comprehensive exam and will include materials covered in the first 3 exams in addition to the following.)

- Chapter 20: Gibberellic acid
- Chapter 21: Cytokinins
- Chapter 22: Ethylene
- Chapter 23: Abscisic acid (ABA)
- Chapter 25: Flowering



Workbook outline and Teaching Assistant Catherine Simpson