



CASPiE in the Community College Classroom

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Harold Washington College
City Colleges of Chicago
March 28th - ACS

Harold Washington College

- Community College in downtown Chicago.
- One of a seven college system.
- One full time chemistry lab with space for 36 students.
- Credit enrollment of 11,155 (4,703 FTE)
- Minority Serving
 - 43% African-American
 - 21% Hispanic
- Non-traditional students
 - 42% between 21-30.
 - Average age is 30 years old.

Survey of Organic and Biochemistry

- Chemistry 212. One offered per semester.
- Pre-requisite of 1 semester of College Level Chemistry.
- Currently 30 students
 - 5 male
 - 4 African-American
- Geared towards students transferring into Allied Health.
 - Nursing
 - Nutrition
 - Mid-wife



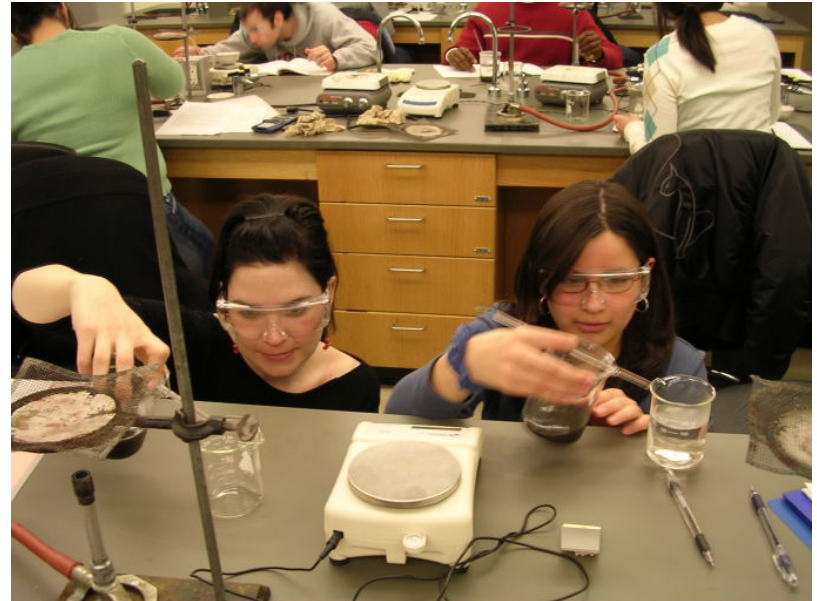
Phytochemical Antioxidants

- Five week investigation.
- Students work in groups as large as three.
- Produce a single report.
- Work with a peer leader.
- Work in 3 hour lab sessions.
- Third semester offered.
- Fourth section to feature CASPiE labs.



Weeks 1 & 2 Skill building

- Week 1
 - Solution preparation
 - Quercetin
 - Epicatechin
 - Trolox
 - ABTS radical cation generation.
- Week 2
 - TEAC analysis
 - Serial dilutions
 - Total phenolics assay



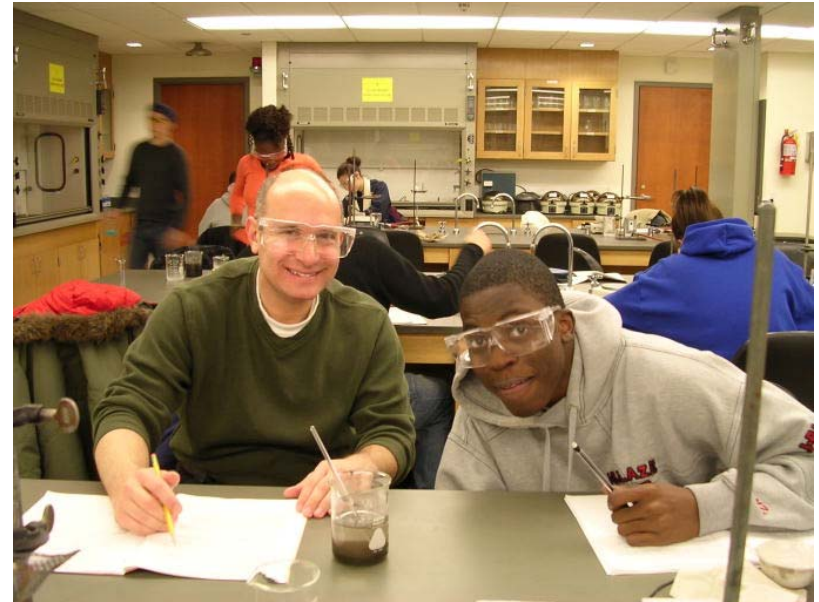
Week 3 - Brainstorming

- Students work in groups to develop their own unique project.
- No work done in lab.
- Coffee and music provided.
- Students fill out a form that encourages ‘casting a large net’
- Narrow down a study
- Literature search



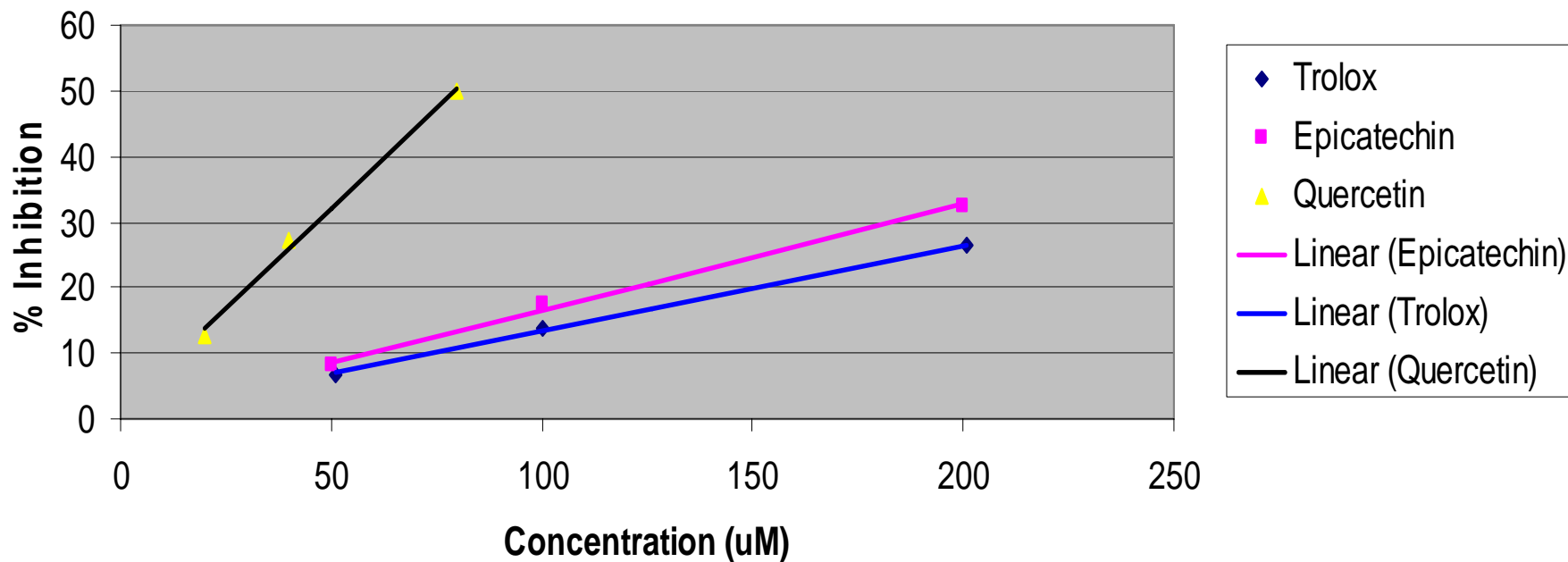
Weeks 4 & 5 – Original Experiments

- Open the lab a little early.
- Students prepare their own samples.
- Prepare sample dilutions.
- Replicate TEAC analysis and Phenolics assay



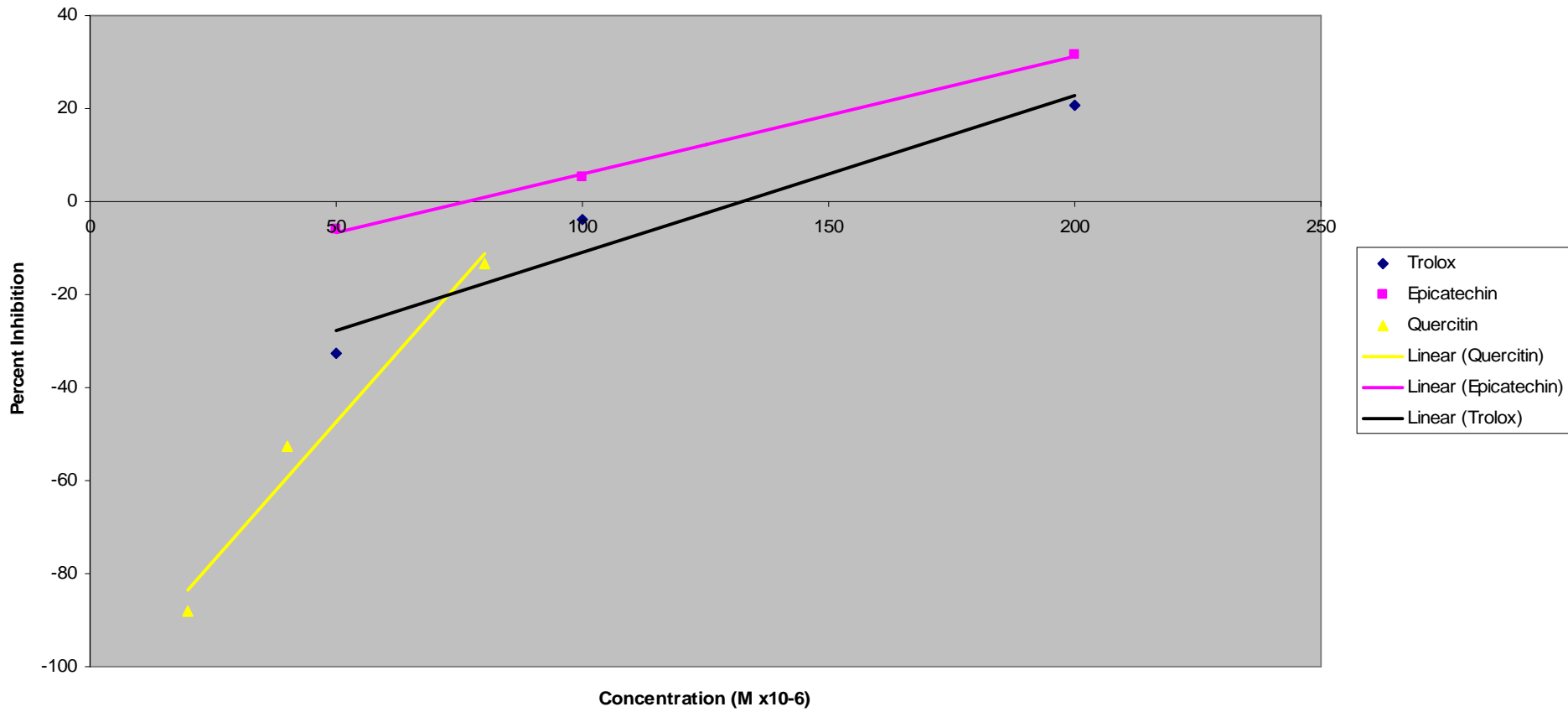
Idealized CASPiE Data

Effect of Antioxidant Concentration on ABTS Radical Cation Absorbance



Actual Student Data

TEAC Analysis



M.B. Mokris – 3-21-07

CASPiE Concerns

- Poor technique leads to poor results.
- Results in frustration.
- Bottle-neck created with only one UV-Vis.
- Chemicals can be expensive (sustainability)
- ABTS cannot be saved for one week.
- Other labs are not being done.
- Solution making is a departure from traditional Organic/Biochem lab curriculum.

CASPiE Advantages

- Anecdotal – Incredible brainstorming when developing project.
- Good results have shown good critical thinking in reports.
- Access to techniques.
- Students enjoy creative approach to labs.
- Students gain good organizational skills.

CASPiE Future Work - HWC

- Further refine the work done in lab.
- Emphasize skills and techniques.
- Emphasize writing.
- Move to another section (Gen. Chem)



Acknowledgements

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 - Fornes
 - Wink
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