

Understanding the Florida Cocktail

Between 2000 and 2007, Governor Jeb Bush implemented "The Florida Cocktail," an intensive mix of accountability, median income, school funding, and unemployment rates impacted student success as measured by graduation rates and school grades.

Accountability Reforms

School Grades

The Florida Comprehensive Assessment Test scores are standardized to measure performance of schools and to assign letter grades according to the guidelines laid out by Jeb Bush's "A Plan for Education," funding given to schools depends upon performance as measured by school grades.

Choice Reforms

McKay Scholarships



McKay Scholarships are vouchers for students with learning disabilities to attend private or public schools that offer programs that meet their unique needs.

Tax Credit Scholarships



The Tax Credit Scholarships are vouchers for low-income families to transfer their children to private or public schools more suitable for their individual needs.

Charter Schools



Virtual Schools



Analysis

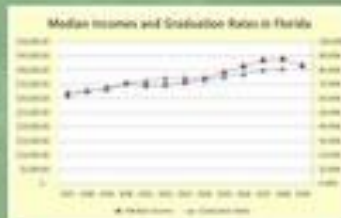
Two to-variable and multi-series analysis were conducted variables on outcomes in schools as measured by school grades and graduation rates. It was determined that median income has a much greater impact on school outcomes than any of the reforms.

Dependent Variables

- Graduation Rate
- Log of Standardized District Grade

Independent Variables

- Charter Schools
- McKay Scholarships
- Virtual Schools
- Tax Credit Scholarships
- Log of Median Income
- Log of Total Funding
- Unemployment Rate



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Recommendations

The Importance of Median Income

Median income was a greater predictor of educational outcomes than any of the reforms comprising the Cocktail. Thus, Florida's success in educational outcomes, such as increased graduation rates, may be attributed to the growing state economy. Overall, education researchers and policy makers across the country should consider situational factors such as median income rather than only focusing on reforms.

Looking Beyond Standardized Exams

Standardized exams cannot capture the value of an education or the ways in which education impacts an individual. Learning conditions are not exactly reflected in standardized test results, but factors such as these can be essential in helping or hindering students from reaching their full potentials. Overall, U.S. educational leaders must consider factors outside of standardized testing when measuring the success of an educational system in need of improvement.

Scenarios Matrix



Protein Structure Core Facility

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ABSTRACT

The UNMC Protein Structure Core Facility (PSCF), founded in 1988, provides information on the primary structure, identification and quantification of proteins for the University of Nebraska System, as well as services outside the system. University of Nebraska facilities, along with fast and sensitive, reliable and validated data. Amino acid analysis is performed with a Waters L-8800. Quantitation and amino acid composition are required. Samples range from purified protein to spent media, and include serum spots for determination of amino acid markers used in screening for. The primary sequence of proteins is analyzed using substructure. Edman degradation of a protein is performed using a Shimadzu Protein Sequencer. The need to determine amino acids of proteins or peptides are required, for identification of changes after experimental manipulations, including the determination of amino acid sequence. A Waters ACQUITY UPLC i-Class System with the ability to run HPLC columns as well as used for peptide and protein purification, and is available for a per hour basis to trained users for analysis (HPLC). Nucleoside/nucleotide electrophoresis with separation by protein size or charge, allowing activity detection is performed on the ProteinChip Reader. Also used is a simple system. The technology allows determination of the phosphorylation state of a protein and quantifies the amount producing publication-ready figures. Visualization of amino signaling pathways is possible in one day/night lab after administration. From testing of the instrument a currently available, and use is scheduled to 2008. Consultation with the core facility director on equipment design and part program submission is available by appointment, and is scheduled by the lab. The PSFC supports the research of investigators throughout the University of Nebraska System and also receives samples from throughout the country.

Simple Western by Size or Charge

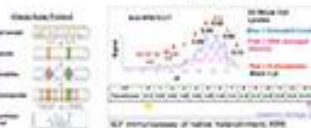


ProteinChip Reader

- Western blotting system
- 48 wells
- Size + Charge
- Charge + isoelectric focusing (pI)
- Can determine pI

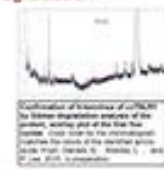
Sample Preparation

- Lysate with complete buffer, cocktail
- Activity, pH level adjustment
- Secondary antibody (primary not used in this system)



Edman Degradation

- Analyze N-terminus of protein
- Determine site of cleavage
- Verify peptide sequence
- Determine amino acid sequence upon non-coded sequences
- Suitable sequence for TMR instruments
- Determine exact start site of novel protein expression



Shimadzu PPSQ-32

- 12 position protein of peptide
- PEPF
- In solution without salt in buffer
- Products available for sequence testing, cloning



Amino acid Analysis

- Waters L-8800
- 1 to 12 samples of protein
- 200 to 2500 picomoles of peptide



Quality Controls for Amino Acid Analysis

- 99.7% RSD (repeatability) with each run
- Average error for % of each amino acid: 4.3%
- RSD for amino acid: 1.8%
- Blank standards are run with each sample set



UPLC/HPLC Analysis

- Waters ACQUITY UPLC i-Class System**
- Bio rack, two path
 - 15 minutes software
 - Secondary gradient
 - Precision Collection Autosampler
 - Dual wavelength UV/Vis Detector
 - Available by the hour



Services Available

- Protein/Peptide Sequencing by Edman Degradation
- Amino acid analysis
- Simple Westerns by Size or Charge
- Consultation with the director on sample preparation, experimental design and data interpretation

Chargeback

The PSFC is a chargeback fee for services facility. Costs for materials within the University system are partially subsidized.

Acknowledgements

The UNMC Protein Structure Core Facility receives partial support from the NE Medical Center (UNMC) grant program, National Institutes of Health, and the Nebraska Research Initiative.

SCIENCE INFOGRAPHIC FLAT BACKGROUND

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Cellular and Molecular Neuroscience Core Laboratory



WAISMAN
CENTER

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Cellular Imaging Facilities and Support

LASER SCANNING CONFOCAL MICROSCOPY

Nikon A1R-Si INVERTED

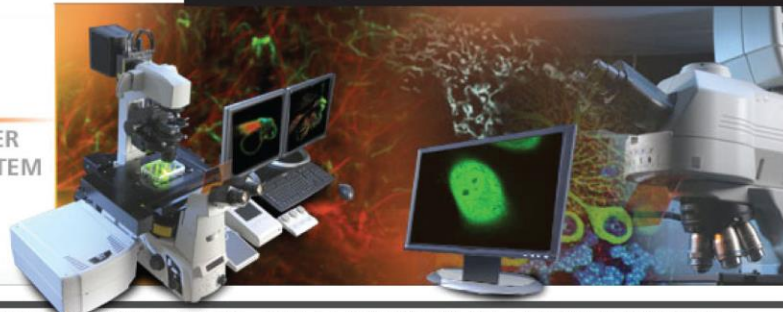
Inverted TiE microscope
Fully motorized stage and piezo Z-focus drive
Perfect Focus infrared image stabilization
Lasers: 405 nm, 458, 488, 514, 561, 640
High Speed Resonance scanhead
Spectral imaging with 32 channel Si detector
High NA Objectives (+ 1.5x zoom):
Dry: 10x/0.45 na, 20x/0.75 na
Multi: 20x/0.75 na
Oil: 60x/1.4 na, Water: 60x/1.2 na
Transmitted Light Detector and DIC optics
Incubation chamber for Live Cell timelapse
NIS Elements-Advanced Imaging Software



Nikon C1 UPRIGHT

Easy to use Nikon E600 upright microscope
4 Lasers (fluorophores) /3 PMTs =4 Channels
405 nm (DAPI/Hoechst)
458, 488, 514 nm (AlexaFluors, FITC, GFP)
543 (AFs, Cy3, Texas Red...)
633 (AFs, Cy 5, ToPro...)
Obtain 3D (x,y,z) data with the Z focus control
High NA objectives:
Dry: 10x/0.45 na Plan Apo
Oil: 40x/1.3 na Plan Fluor, 60x/1.4 na Plan Apo, 100x/1.4 na Plan Apo
Epifluorescence filters: DAPI, FITC, TRITC
\$60/hour*

A1
CONFOCAL LASER
MICROSCOPE SYSTEM



EPIFLUORESCENCE AND QUANTITATIVE MICROSCOPY

Zeiss Axioplan 2 Upright

Brightfield and Epifluorescent imaging
Motorized Stage
Epifluorescence filters: DAPI, FITC Rhodamine, Cy5
High NA objectives: 2.5X, 10X, 20X, 40X, 100X
Simple image Acquisition - \$40/hour*
-Zeiss Axiovision software v8.7
Stereology (Quantitative cell counting)- \$48/hour*
-MicroBrightfield Stereoinvestigator software v9.1
-Virtual Slice: montage image production



Our goal is to support cellular imaging needs in the Waisman Center and beyond. We provide experimental design and problem solving guidance, and we train our users so they can use our equipment independently.

(*training costs \$67/hour)



Contact
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with any questions!

Waisman Center Investigators receive a subsidy to use CMN equipment and services.
We welcome UW and off-site investigators to use our facility at published costs.

www.waisman.wisc.edu/cores/cmn

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