THE COLLEGE OF NEW JERSEY

Mathematics and Statistics

2014

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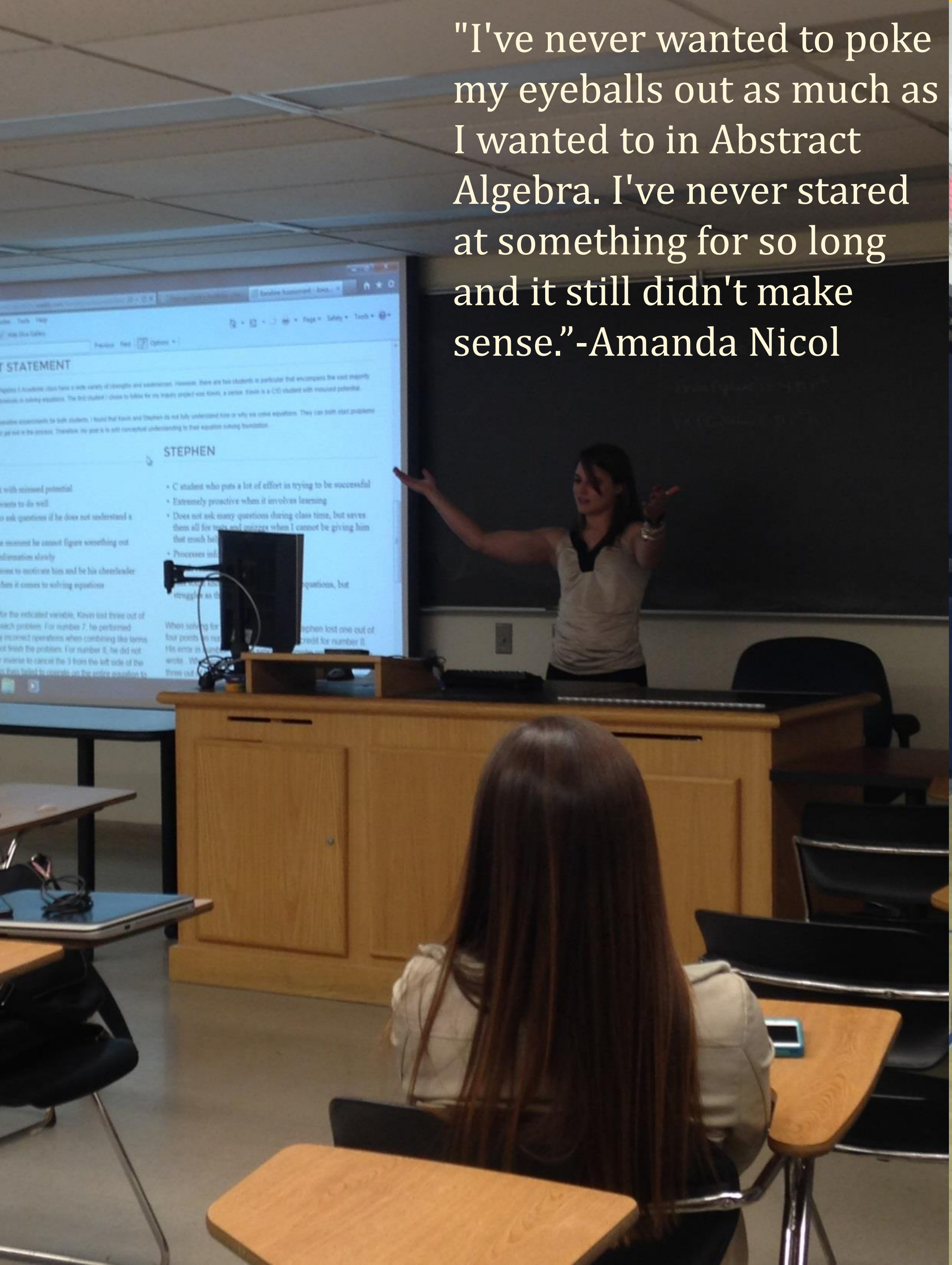
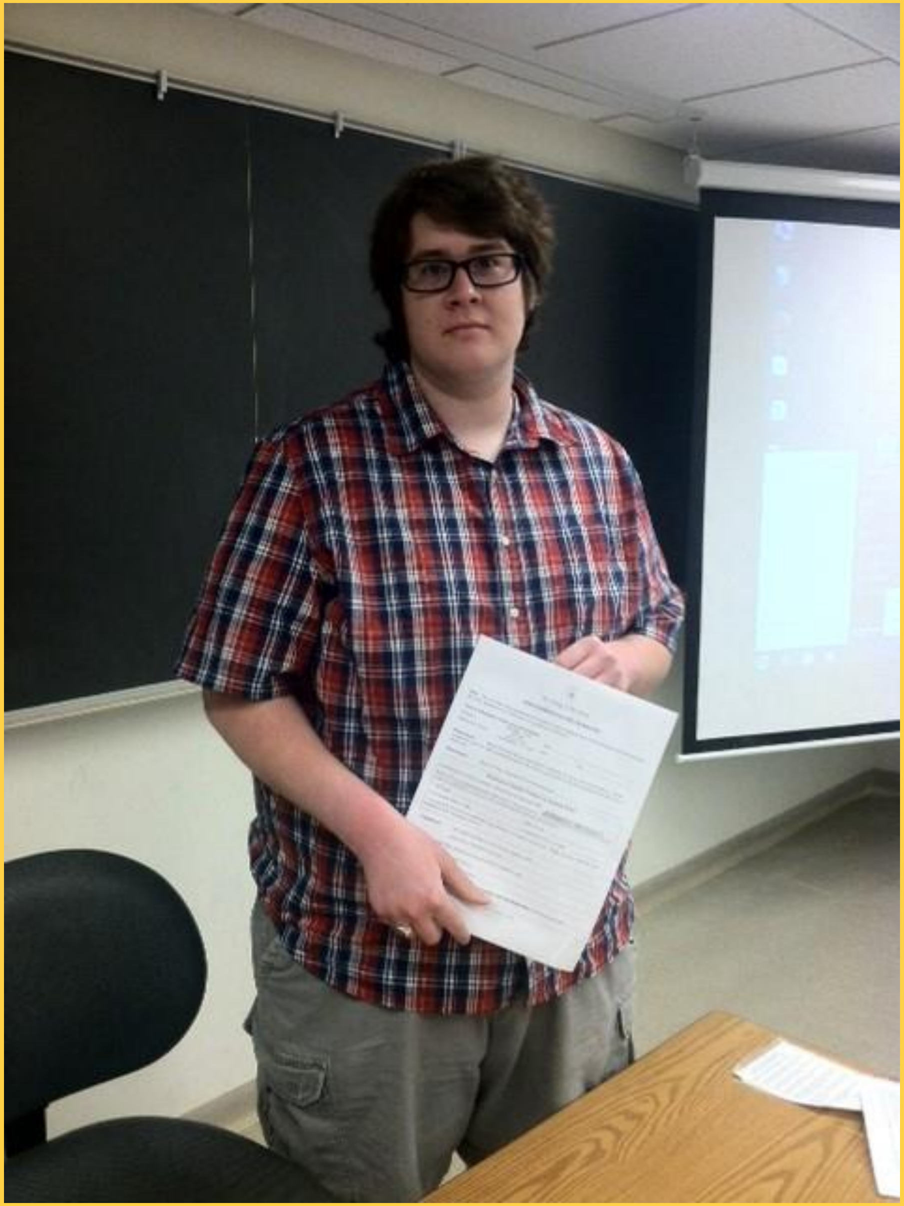
“It's been a great ride. Thanks to all of the wonderful professors and all of the great students in the department. Each and every one of you made this experience so special. Good luck to everyone!“
-Ryan McMichael

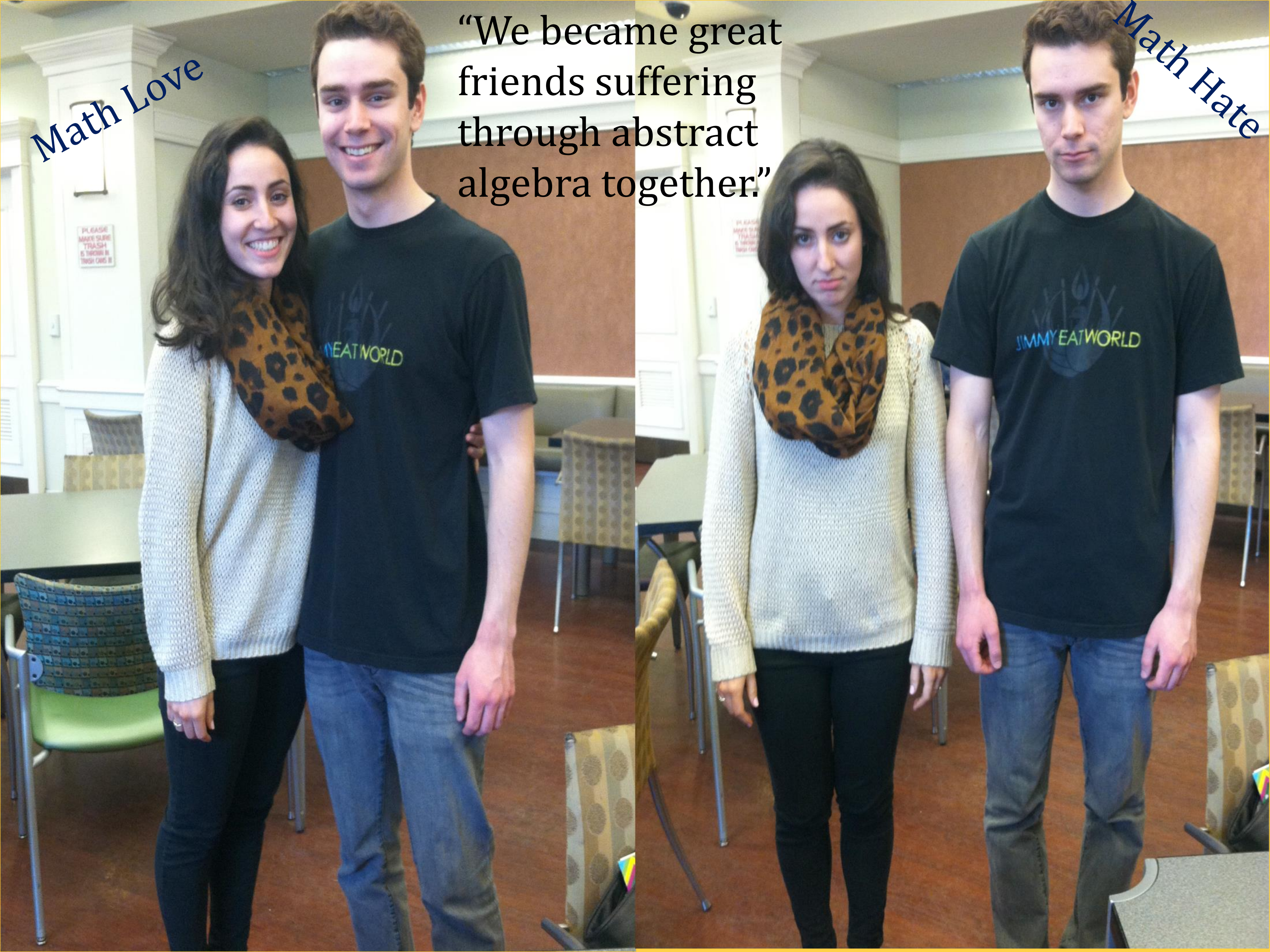

"You say A, but you meant
B, then you write C, yet
the correct answer is D."
eries Analysis
esa Nakra
ege of New Jersey
Results: Stepwise Autoregressive
Conclusions
Future Work



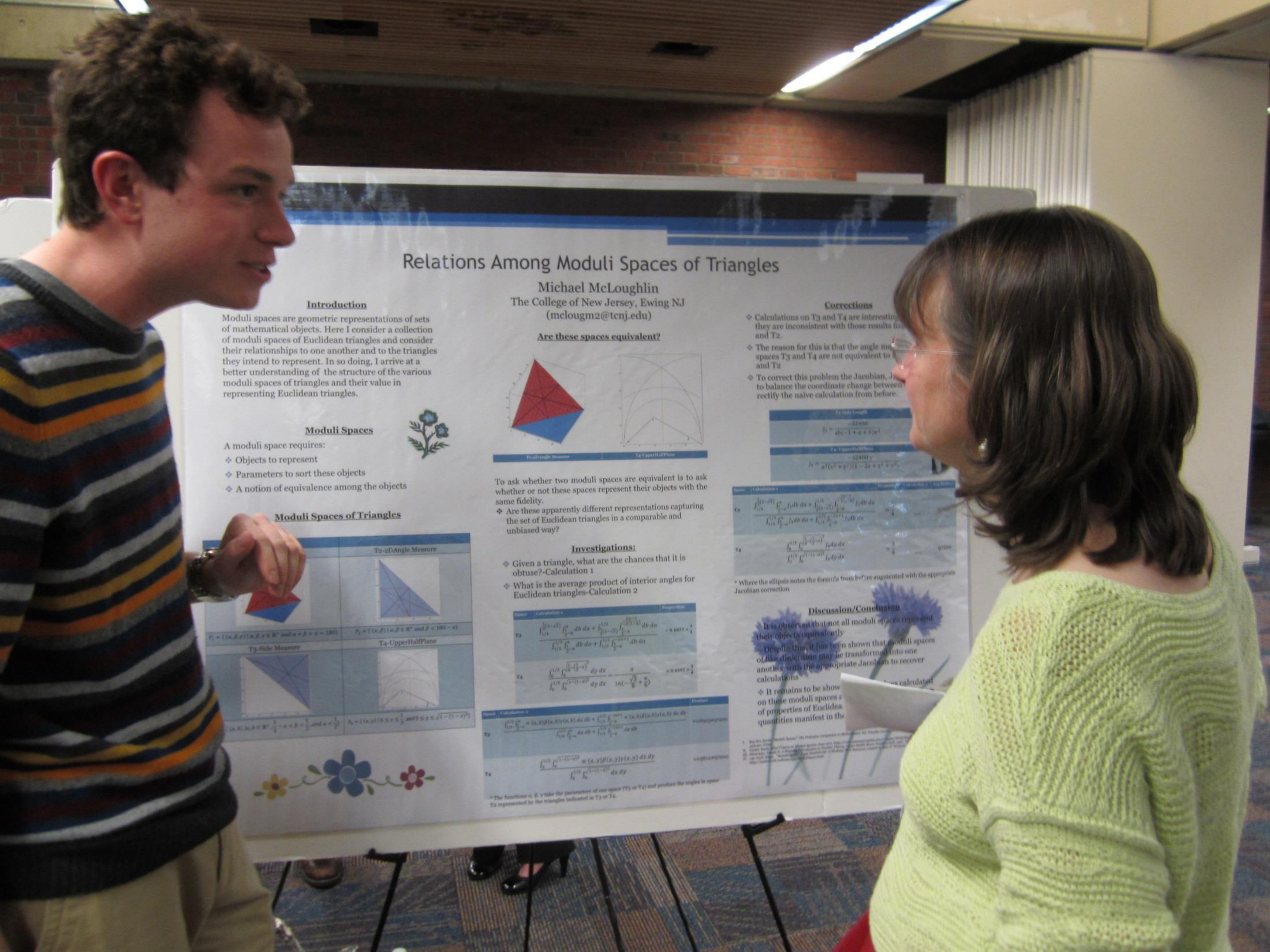
"I've never wanted to poke my eyeballs out as much as I wanted to in Abstract Algebra. I've never stared at something for so long and it still didn't make sense."-Amanda Nicol



“The My Teacher is a Butt-Head form.”
– Dr. Clifford

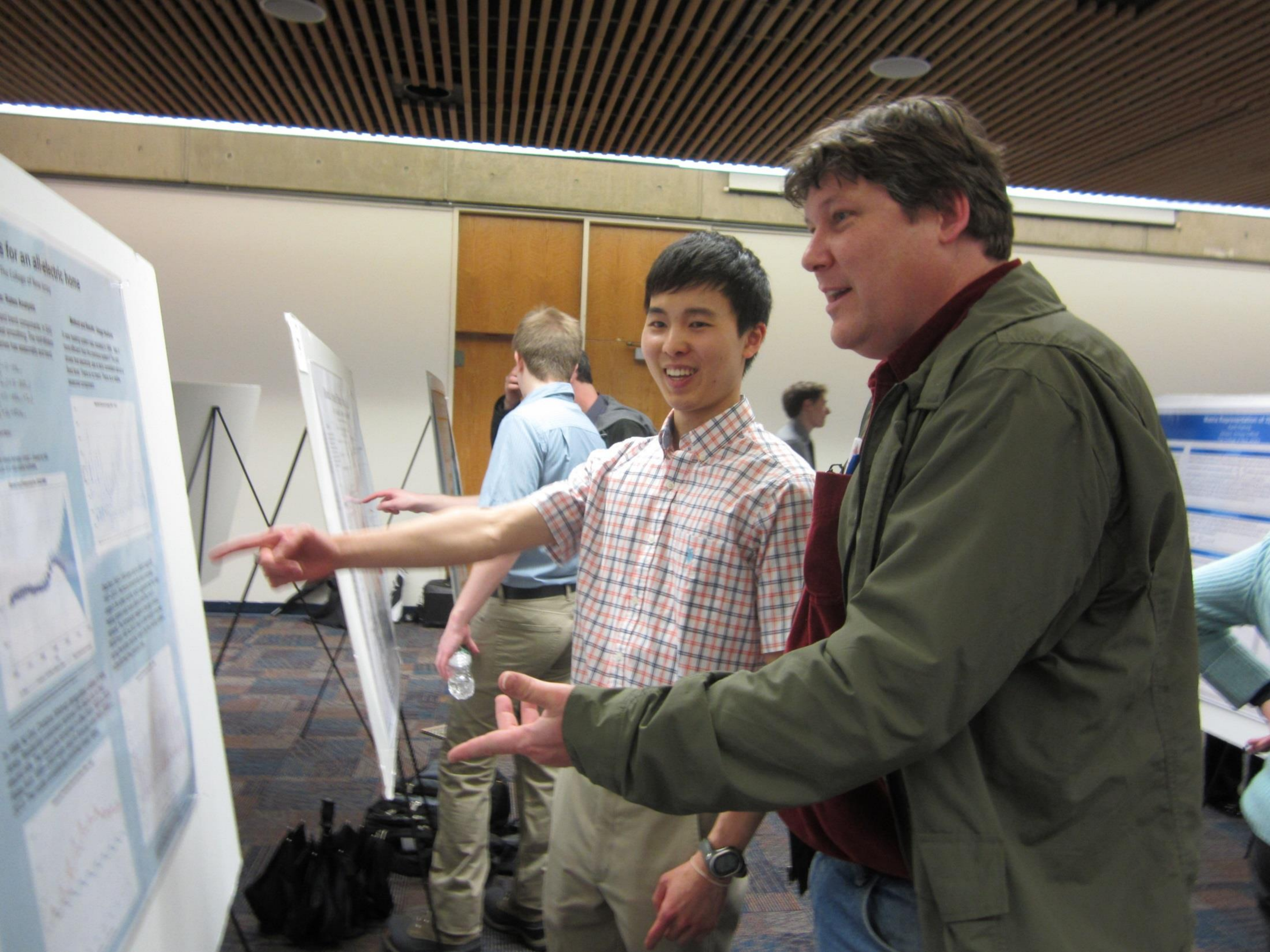

Math Love
"We became great friends suffering through abstract algebra together."
Math Hate
JIMMY EAT WORLD

Courtesy of Matthew Rusay



Relations Among Moduli Spaces of Triangles
Michael McLoughlin
The College of New Jersey, Ewing NJ
(mclougm2@tcnj.edu)
Introduction
Moduli spaces are geometric representations of sets of mathematical objects. Here I consider a collection of moduli spaces of Euclidean triangles and consider their relationships to one another and to the triangles they intend to represent. In so doing, I arrive at a better understanding of the structure of the various moduli spaces of triangles and their value in representing Euclidean triangles.
Moduli Spaces
A moduli space requires:
Objects to represent
Parameters to sort these objects
A notion of equivalence among the objects
Moduli Spaces of Triangles
T2-2DAngle Measure
T3-Side Measure
T4-UpperHalfPlane
Are these spaces equivalent?
To ask whether two moduli spaces are equivalent is to ask whether or not these spaces represent their objects with the same fidelity.
Are these apparently different representations capturing the set of Euclidean triangles in a comparable and unbiased way?
Investigations:
Given a triangle, what are the chances that it is obtuse?-Calculation 1
What is the average product of interior angles for Euclidean triangles-Calculation 2
Corrections
Calculations on T3 and T4 are interesting
they are inconsistent with those results
and T2.
The reason for this is that the angle m
spaces T3 and T4 are not equivalent to
and T2
To correct this problem the Jacobian, J
to balance the coordinate change between
rectify the naive calculation from before.
Where the ellipsis notes the formula from before augmented with the appropriate Jacobian correction
Discussion/Conclusion
It is observed that not all moduli spaces represent their objects equivalently
Despite this, it has been shown that moduli spaces of like dimension may be transformed into one another with the appropriate Jacobian to recover calculations
It remains to be show
on these moduli spaces
of properties of Euclidea
quantities manifest in th

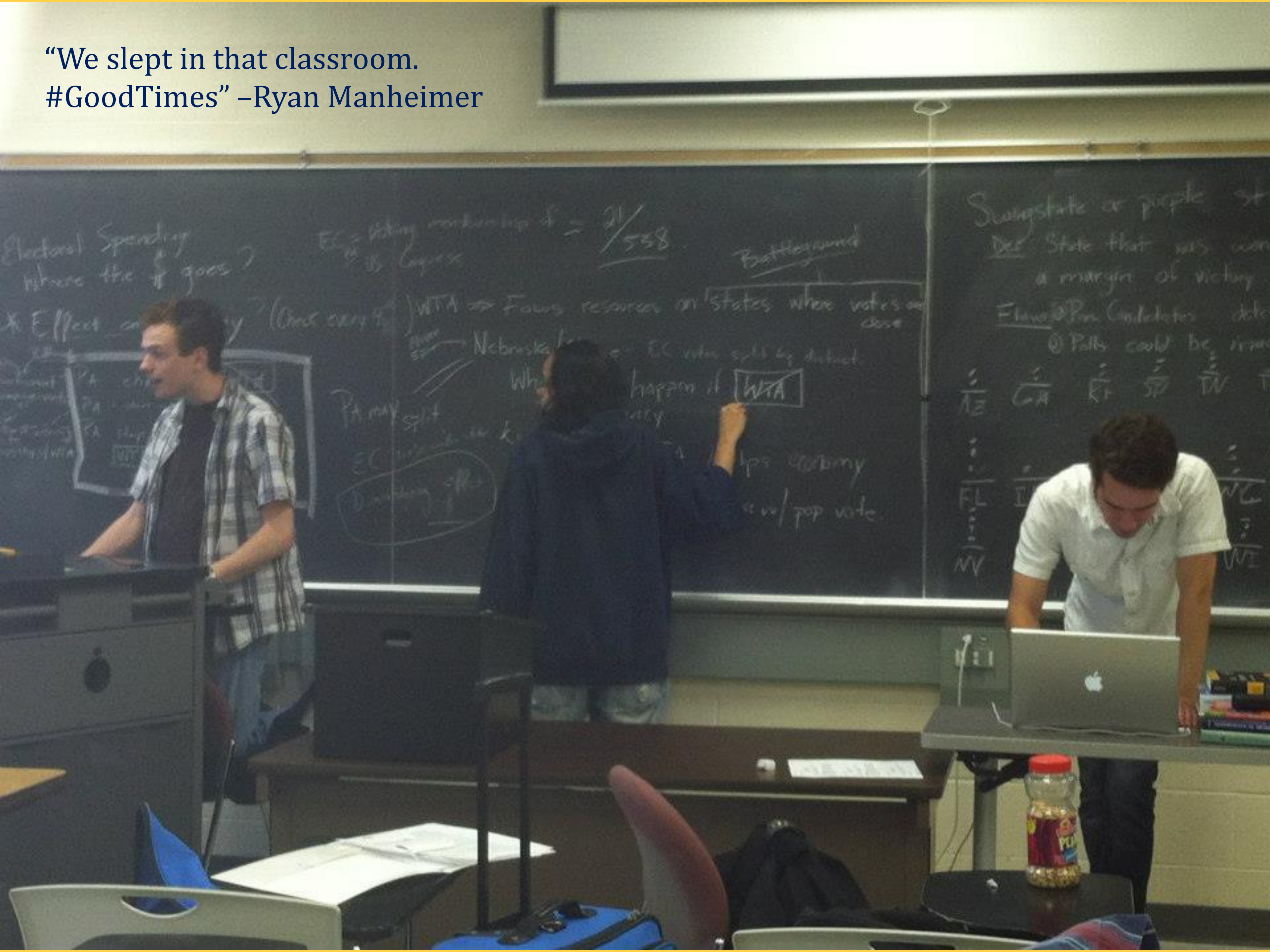
"I love this department so much, I let Beth bake cookies while I wore an apron."– Ryan Manheimer


for an all-electric home


EXIT


EXIT

"We slept in that classroom.
#GoodTimes" –Ryan Manheimer




I ♥ MATH


Strategizing the Adjusted Winner Procedure in a Con
Christopher Falk
Dr. Andrew Clifford
TCNJ
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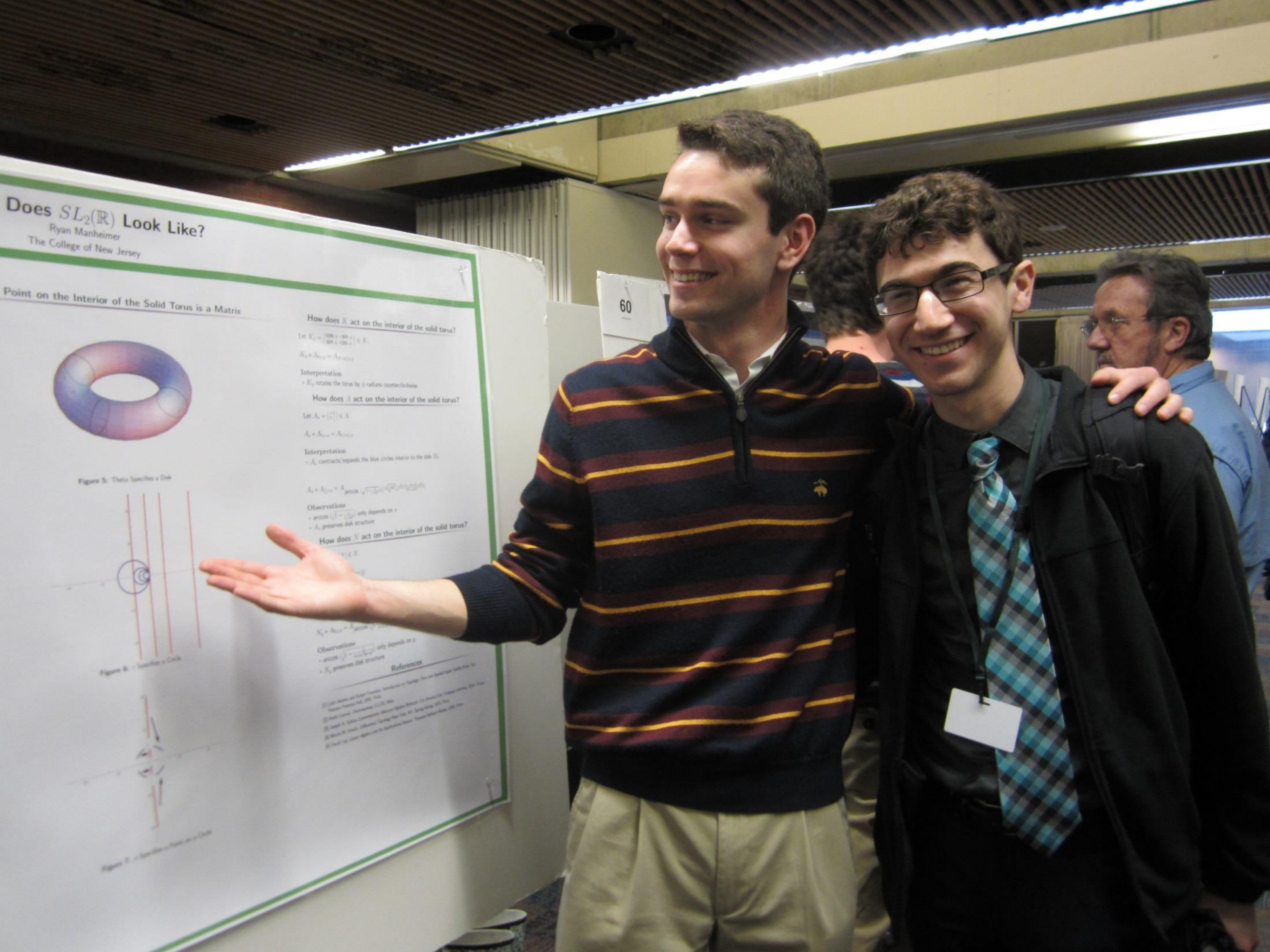
Abstract
2. Transfer stage
So far, Sancorp won 40 points, Tech Co won 35. Transfer the tied goods to Tech Co.
Tech Co becomes the Temporary Winner. Analogously, Sancorp becomes the Temporary Loser.
Analysis by Point Ratios
Definition – Tech Co's Point Ratio for a good is Tech Co's valuation of the good divided by Sancorp's valuation.
If Tech Co's point ratio for a good is X, we say, "Tech Co values the good X-times more than Sancorp."
Transfer goods to Sancorp in ascending order of Tech Co's point ratios (lowest PR's → highest PR's)
Sancorp
Tech Co
Company name 40
Primary location 25
Chairman 10
CEO 30
Immunity to EE layoffs 15
Totals 55 65
3. ★ Equitability adjustment ★
This step is crucial. The equitability adjustment is unique to the AW procedure, and guarantees equitability with absolute certainty.
Equitability means that each player values their allocation exactly equal to the other.
This is often difficult to achieve with fair division schemes.
Solving for p
Definition – p is the percentage of the CEO good Sancorp needs to receive to achieve an equitable allocation.
55+30p=35+30(1-p)
→ p = 1/6
Company name 40
Primary location 25
Chairman 10
CEO 30(1/6) = 5 30(1 - p) = 25
Immunity to EE layoffs 15
Totals 60 60
a Example
oint assignments
Tech Co
20
25
10
30
15
100
Othe
2. Hon
Consider the
Company
Primary loc
Chairman
CEO
Immunity to
Totals
Co. name
Location
Chairman
CEO
EE layoffs
Totals
Conclusion

Relay For Life


ABSTRACT

They didn't break their egg!



Does $SL_2(\mathbb{R})$ Look Like?
Ryan Manheimer
The College of New Jersey
Point on the Interior of the Solid Torus is a Matrix
How does K act on the interior of the solid torus?
Interpretation
How does A act on the interior of the solid torus?
Interpretation
Figure 5: Theta Specifies a Disk
Observations
How does N act on the interior of the solid torus?
Observations
References
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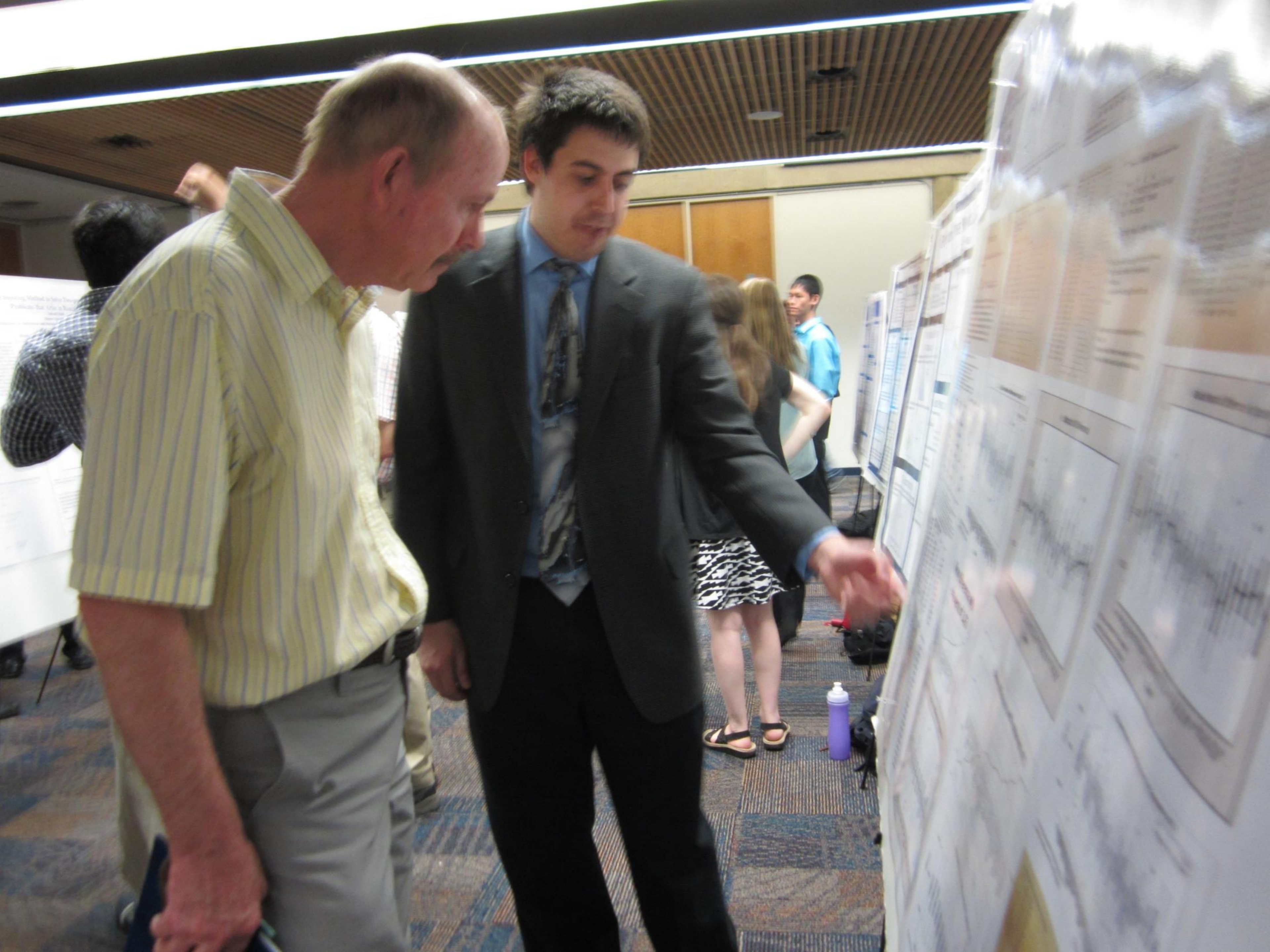
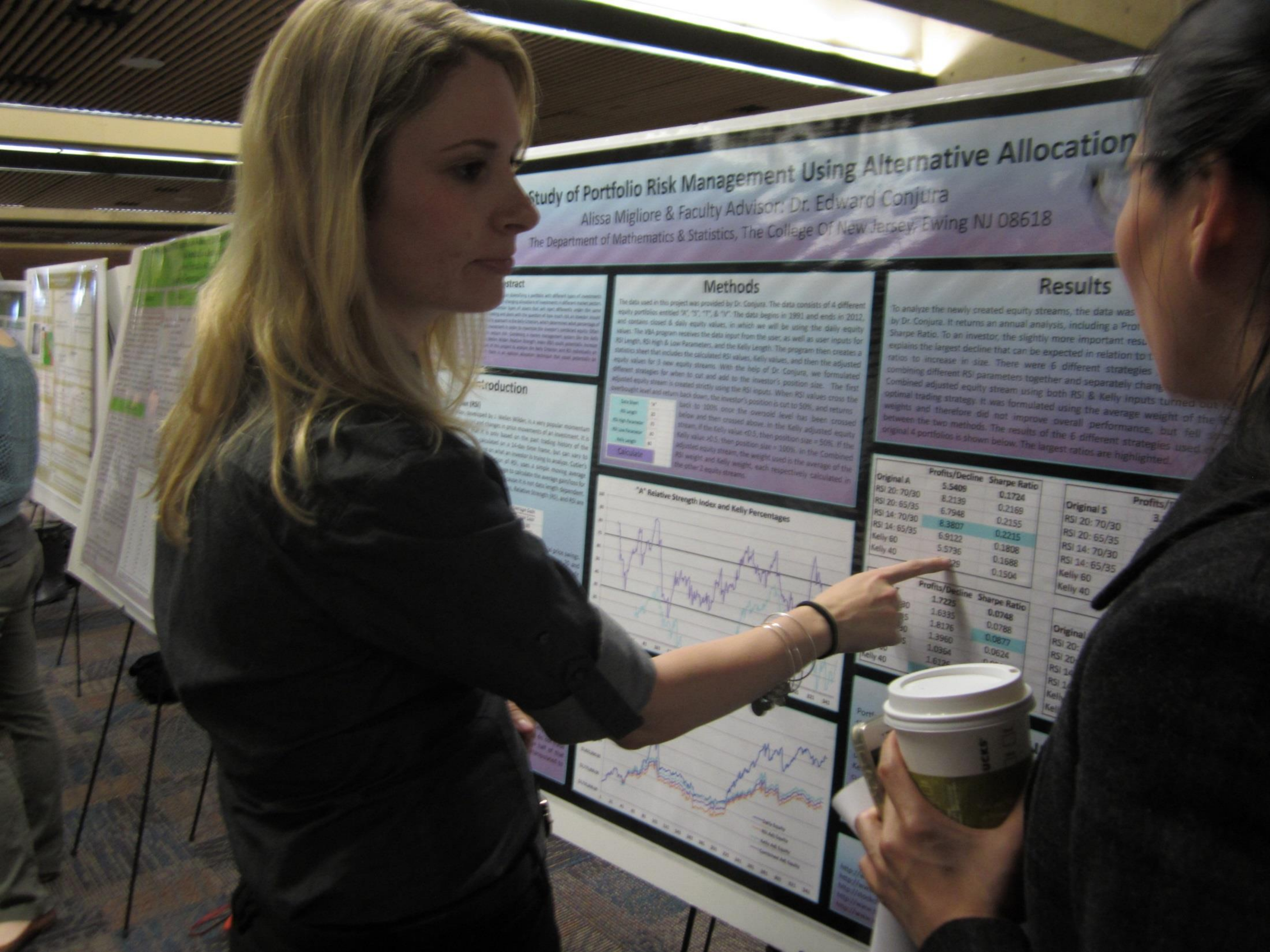


"GSUMC: We do math as a recreational sport."
–Ryan Manheimer


56
the US Dollar
Faculty


The Golden Calculator


Study of Portfolio Risk Management Using Alternative Allocation
Alissa Migliore & Faculty Advisor: Dr. Edward Conjura
The Department of Mathematics & Statistics, The College Of New Jersey, Ewing NJ 08618
Methods
Results
"A" Relative Strength Index and Kelly Percentages
Original A
Profits/Decline
Sharpe Ratio
RSI 20: 70/30
RSI 20: 65/35
RSI 14: 70/30
RSI 14: 65/35
Kelly 60
Kelly 40
5.5409
8.2139
6.7948
8.3807
6.9122
5.5736
0.1724
0.2169
0.2155
0.2215
0.1808
0.1688
0.1504
Original S
Calculate

CONGRATULATIONS!