ACHIEVEMENT-CENTERED EDUCATION: IDEAS FOR AN EVOLVING NATION

University of Missouri January 15, 2009

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Varner Prof Biol Sci
University of Nebraska-Lincoln

How do we turn this group of truly wonderful people into skilled writers, critical thinkers, and habitually analytical citizens with a true understanding of the arts, humanities, social sciences, and sciences?

Sources of Information:

AAC&U and UNL ACE (GEPT/GEAC)

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The Millennials/Gen Y/iGeneration

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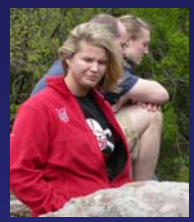

UNL's Cedar Point Biological Station

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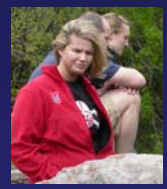
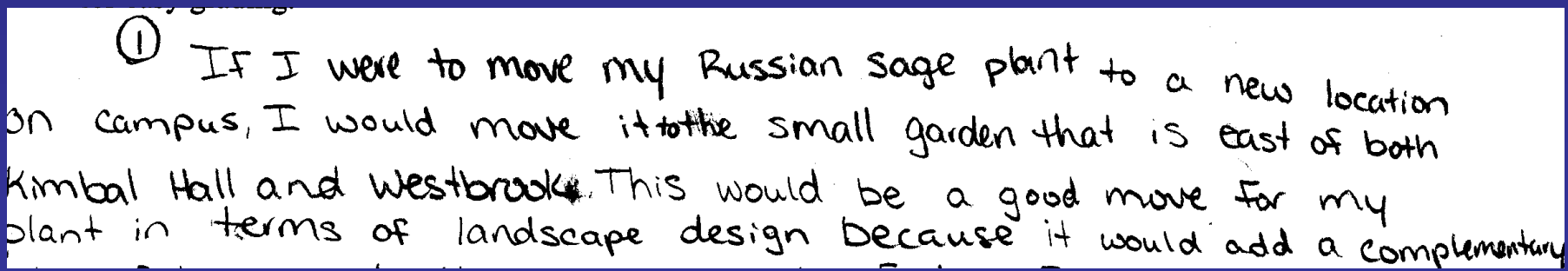


BIOS 101 Information sheets and extemporaneous writing



① If I were to move my Russian sage plant to a new location on campus, I would move it to the small garden that is east of both Kimbal Hall and Westbrook. This would be a good move for my plant in terms of landscape design because it would add a complementary

~8,600 pages, fall, 2008

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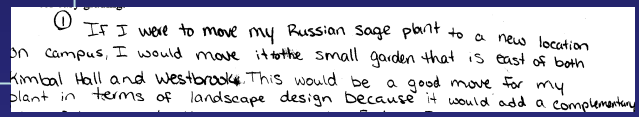


Friday Coffee

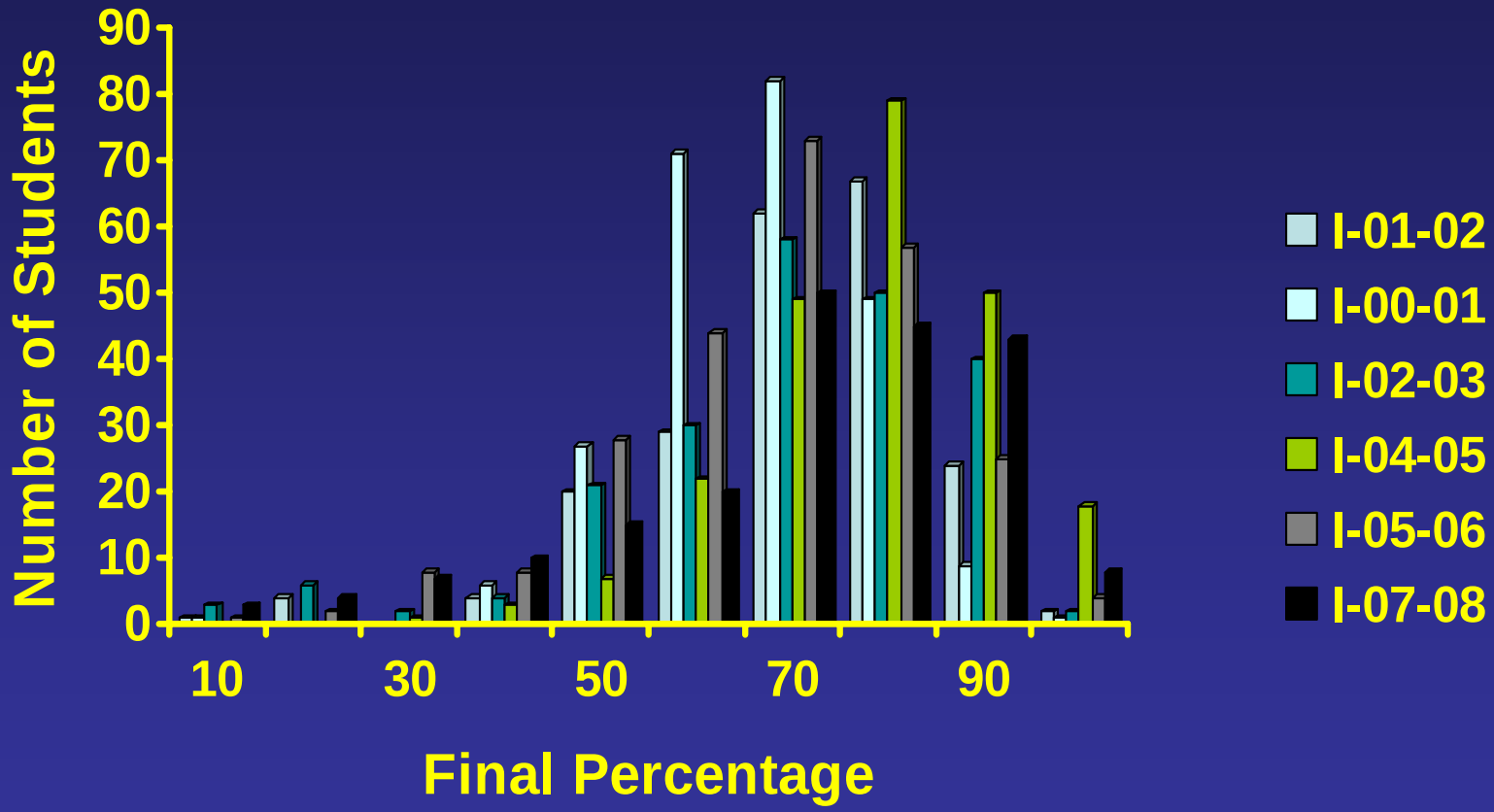
Barry's Bar and Grill

What do you see, hear about, and learn from all this academic and social activity over the course of a career?

- Success
- Failure
- Romance
- Words from 10,000+ future citizens
- Kids who will be doctors that operate on your own children
- A microcosm of your evolving nation

A portrait of my evolving nation as seen from the trenches:

Frequency distribution of grades in a sample of JJ's BS101 classes:



Portrait of an evolving nation:

- There is no statistical difference between any of these classes.*

*If you exclude I-04-05, ave = 82%; first year of clickers; too many points for attendance.

Portrait of an evolving nation:

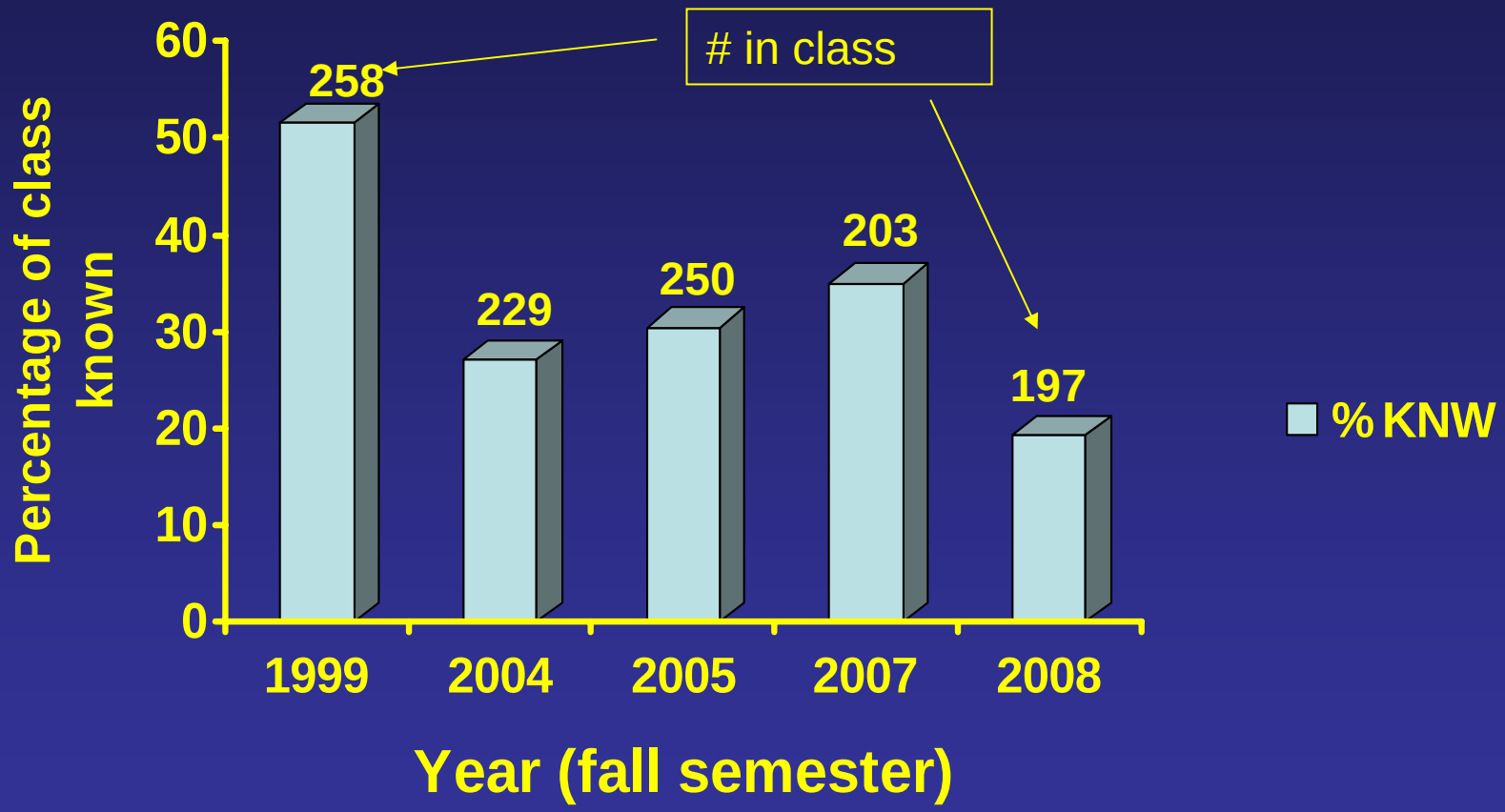
- There is no statistical difference between any of these classes.*

- Each of those years, starting in 2001, I gave students increasing numbers of the actual exam questions in advance, up to at least 75% of them.

*If you exclude I-04-05, ave = 82%; first year of clickers; too many points for attendance. Check for possible Blackboard demo of 2008 questions.

A portrait of our evolving nation (cont'd):

Percentage of students recognized outside of class by the end of October:



(Over this ~decade, the interpersonal interaction has dropped by almost half)

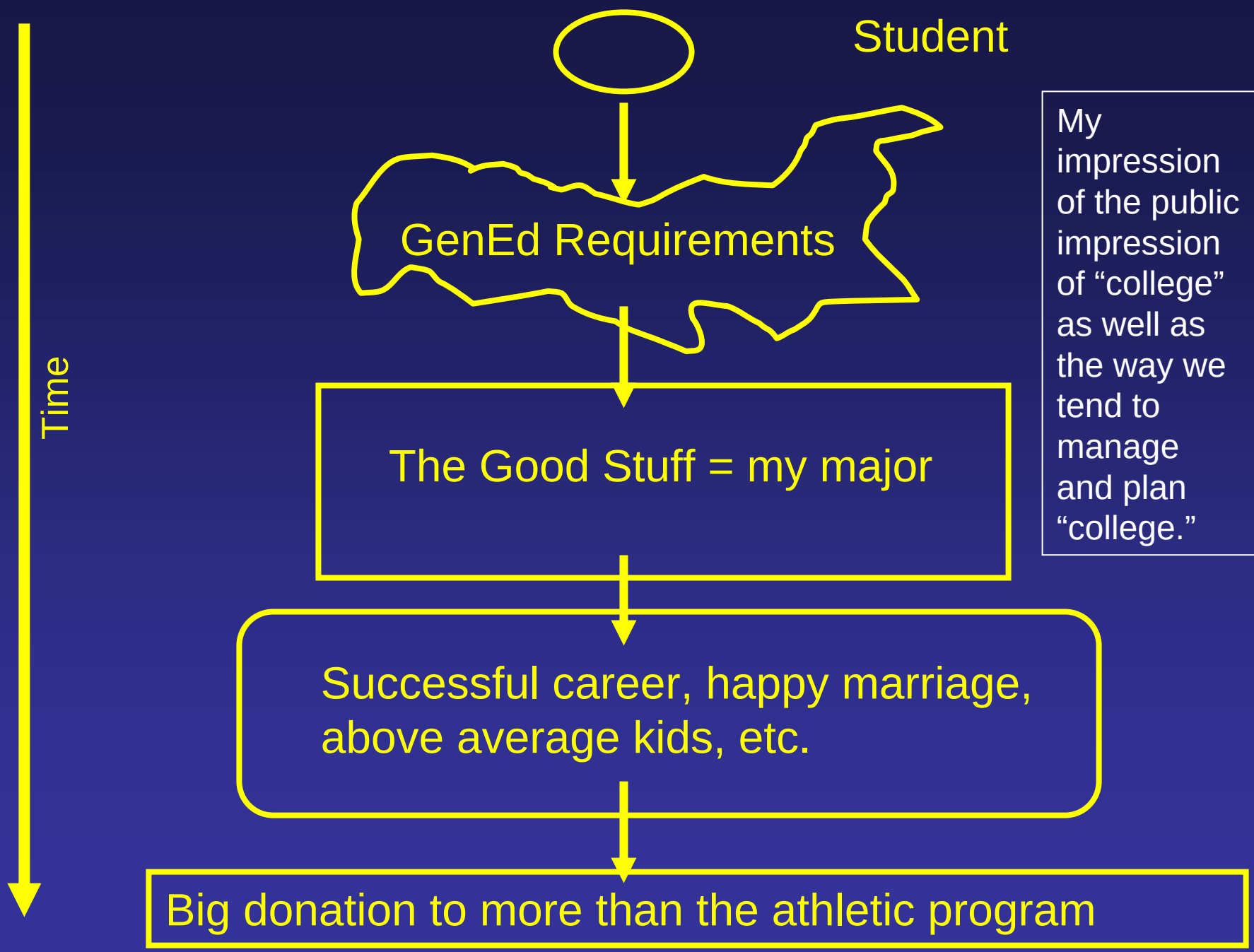
Stop for questions?

The factors at work:

- Complexity of the institution
- Heterogeneity in the student population
- Information age culture

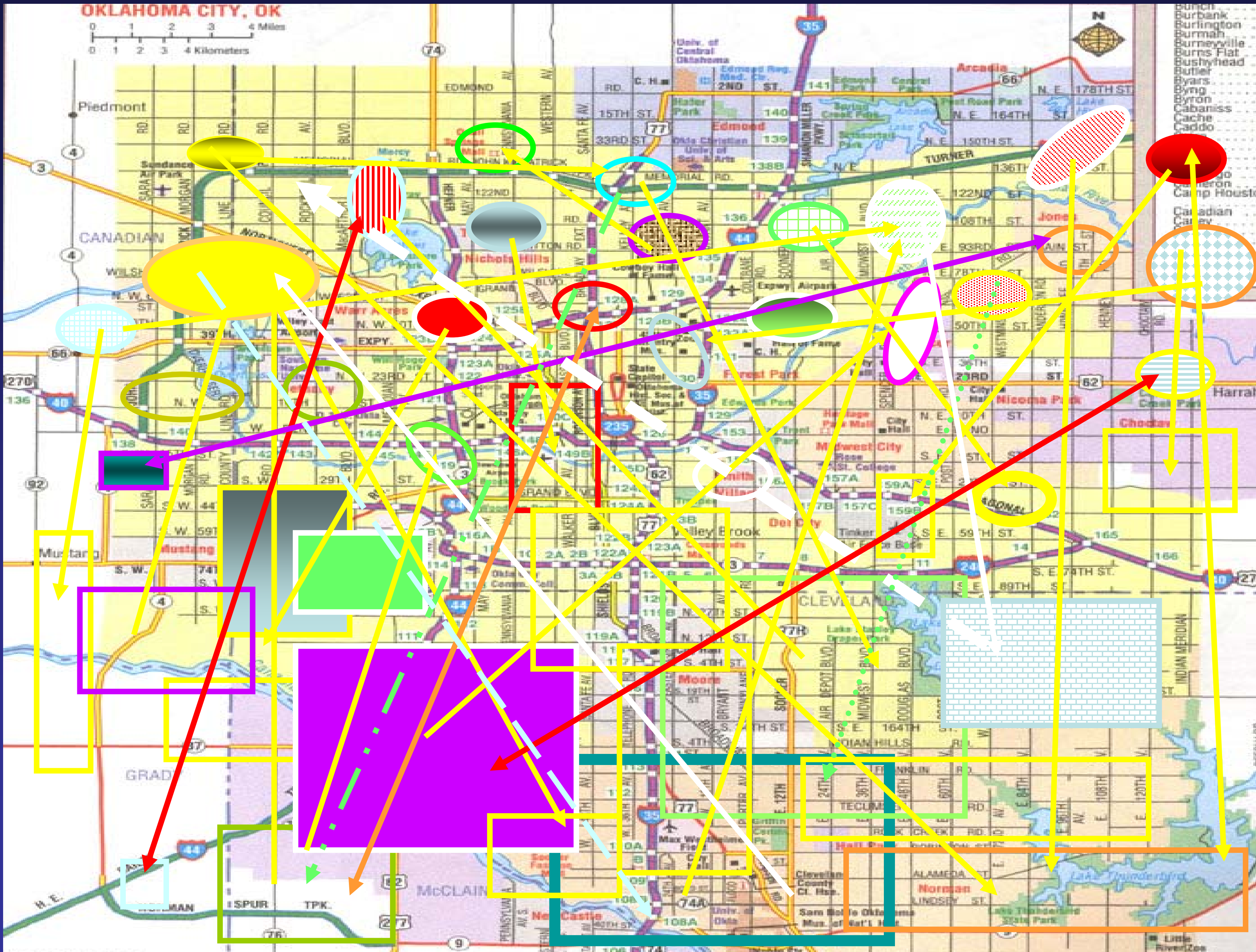
Complexity of the institution (UNL):

- Eight undergraduate colleges
- Eight different cultures
- Eight different governance practices
- Eight different budgets
- Eight different alumni engagements
- Eight different . . . (this list goes on for a while).


Student
GenEd Requirements
The Good Stuff = my major
Successful career, happy marriage, above average kids, etc.
Big donation to more than the athletic program
Time
My impression of the public impression of “college” as well as the way we tend to manage and plan “college.”

= Students = opportunities = interactions

(What the flow of human resources actually looks like.)


OKLAHOMA CITY, OK
0 1 2 3 4 Miles
0 1 2 3 4 Kilometers
Piedmont
CANADIAN
Edmond
Arcadia
Univ. of Central Oklahoma
Nichols Hills
Jones
Harrah
Choctaw
Nicoma Park
Midwest City
Del City
Valley Brook
Mustang
CLEVELAND
Moore
Norman
McCLAIN
GRADY
NEWCASTLE
Lake Thunderbird
Lake Thunderbird State Park
Tinker
TURNER
MEMORIAL RD.
EXPY.
SPUR
TPK.
INDIAN MERIDIAN
PEEBLY RD.
© UniversalMAP
Burbank
Burlington
Burnah
Burneyville
Burns Flat
Bushyhead
Butler
Byars
Byng
Byron
Cabaniss
Cache
Caddo
Camp Houston
Canadian
Carney

Heterogeneity in the student population:

- Economic diversity
- Religious diversity
- Family history
- Employment
- Military service
- Major; career goals
- Co-curricular activities
- Ethnic background
- Gender
- Advice from high school
- Appearance
- Talents
- Drug and alcohol use
- Significant others
- Sexual orientation
- Age and maturity
- Reading skills
- Attention span

Globalization in a freshman biology class

(languages spoken or studied for more than a year by my fall, 2007, BIOS 101 students):

- Spanish*
- French*
- German*
- Tamil
- Persian
- Arabic
- Norwegian
- Chinese
- Japanese
- Lakota
- ASL
- Hindi
- Gujarati

*JJ has studied for more than a year.
NOTE: Nobody listed computer code, html, etc.

Globalization in a freshman biology class (countries visited by my fall, 2007, BIOS 101 students):

- Australia
- Austria
- Belgium
- Belize
- Bosnia
- Brazil
- Canada
- Caribbean (several)
- China
- Costa Rica
- Croatia
- Czech Republic
- Denmark
- France
- Germany
- Greece
- Guatemala
- Honduras
- Hungary
- Iceland
- India
- Iran

Globalization in a freshman biology class (countries visited – cont'd):

- Ireland
- Italy
- Japan
- Kenya
- Lithuania
- Lichtenstein
- Luxembourg
- Malta
- Mexico
- Monaco
- Netherlands
- Pakistan
- Philippines
- Poland
- Portugal
- Puerto Rico
- Russia
- Saudi Arabia
- Spain
- Sudan
- Switzerland
- Taiwan
- Thailand
- Turkey
- UK
- Venezuela

Information age culture (hourly lives of students):

- iPods*
- Podcasting*
- Cell phones*
- Text messages
- Ring tones
- WWW*
- Blackboard (CMS)*
- Free downloads*
- E-mail*
- Digital images*
- YouTube/Facebook*
- Electronic library access*
- Sound bite reporting
- Political stridency
- PowerPoint*
- UNL wireless network*
- Video games
- Classroom Response Systems*

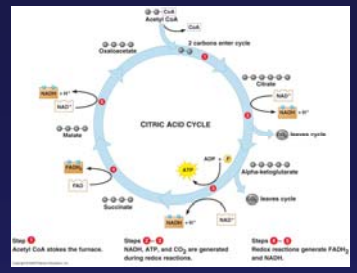
* = JJ uses regularly

Take-home message from getting acquainted with our students and paying attention to the lives they lead:

<u>They're not their parents! Or their grandparents!</u>

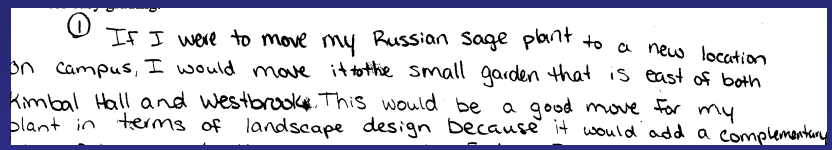
(But they are our nation's future.)

What we teach.



What they learn.

What they need.

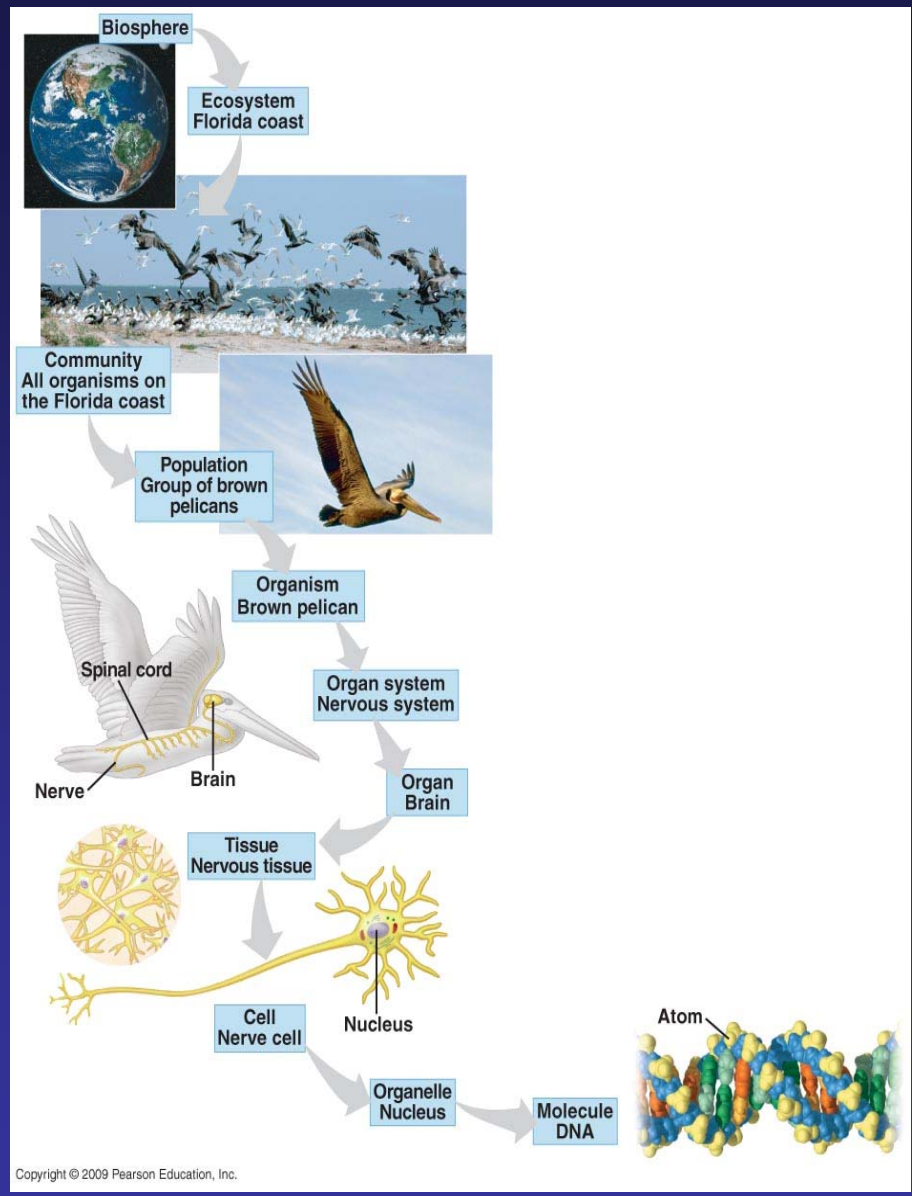


Why anyone should care.

Stop for questions?

What we teach:

- The nature of science
- Baby biochemistry
- Cell structure and function
- Mendelian genetics
- Evolution
- Ecology (nutrient cycling)



What they learn:

- Time management
- Time management
- Time management
- CMS use
- Laundry techniques
- Local establishment characteristics
- Where the quiet places are
- How to get certified for something

ID Code	E1	E2	Q1
1____9	87.5	69.1	4.0
2____2	75.0	35.8	0.0
X____0	52.5	51.2	4.0
2____1	87.5	79.4	3.0

What do they need:

- **Transferable skills**
- **Ability to work with diverse individuals**
- **An ability to produce something**
- **Flexibility, adaptability, global awareness**
- **Analytical habits of mind**
- **Reduced fear of the unknown (arts, science)**
- **A vital interest in life-long learning**

(These attributes are independent of content or subject matter, although the content is the vehicle by which the attributes are “taught.”)

How do you make this group of wonderful young people behave in a scholarly way and at the same time give them what they need?

Treat ‘em like they’d get treated over in the athletic department?

Grading in BIOS 101 I-08-09:

• Hour exams; 3 @ 100 pts each	300
• Final exam; 1 @ 160 points	160
• Friday writings; 14 @ 10 points	140
• Attendance	100
TOTAL	**700**
Portfolio bonus	50

E.g., an integrated attempt to change behavior through use of the grading system.

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= Behavior modification “opportunities”

Red Grooms *The Unicorn Strikes Back* (detail), 2006, oil on canvas, 96 x 96 in., 243.8 x 243.8 cm

Interpret this picture in terms of all the eco-system energy and carbon skeleton flow we have discussed in the last week, using at least 15 different participants.

3+7=10

BIOS 101 I-07-08 101207 Extemporaneous writing Name__
Clicker ID

Interpret this picture in terms of the carbon, nitrogen, and energy flow we have studied for the past two weeks. Include at least 15 participants.

In this picture there is a lot going on. Apart from the obvious abuse of the color yellow, there actually is a lot of Biology taking place. First, if you look at the plants, you know that the plants are getting energy from the sun. To this the plants are eaten by the horse & even the angry unicorn. The plants then are providing potential energy & useable energy to the herbivores that are eating it. The plants also have been giving off oxygen to the animals & humans in this picture. The humans then are taking the oxygen from the plants & returning the favor with carbon dioxide. The animals are breaking down the plants & they are using it for energy. The angry unicorn, who may be eating the dog that is on top of it & the humans it is attacking is burning/spending lots of energy as it is violently attacking the rest of the species in the picture. The fairy looking princess in the castle is also burning energy & is using the oxygen from the plants. The ducks/geese in the moat are eating the plants in the water & they are gaining energy – energy that they will then pass to the humans when they have a feast after the angry unicorn is defeated.

Extemporaneous Writing

10/12/07

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Extemporaneous Writing

10/12/07

For this extemporaneous writing I thought that I did a good job of describing what was going on in the picture. The picture was very busy and it was hard to tell what exactly was going on with the animals and the humans. I think that I did a good job of describing the picture the best that I could. I do not know if I did a good job of describing what happened in the picture because there were so many things going on. It was hard to pick out certain things that happened in the picture because there were so many things to choose from.

I decided to put in a lot of information about the unicorn because I felt like he was an extremely important part of the picture. Without the angry unicorn there would be no point in the picture, so I decided to give him the main part of my extemporaneous writing. I think that I did a good job of explaining what the unicorn's body and cells were doing as he was angrily attacking the other participants in the picture. I wanted to make sure that I also included the importance of the plants that are in the picture. The plants are essentially providing the energy for the unicorn as it is giving him energy as a food source and oxygen for him to breathe. Without the plants in the picture or in my extemporaneous writing the humans and the animals would cease to exist. I think that the plants and the unicorn play an integral role in the livelihood of society and the mere existence of the humans.

Overall I think that I did a good job of interpreting this picture even though there was so much going on in the picture. It was somewhat fun to be able to look at these pictures and pick out what is going on biologically in the characters and the other participants in the pictures.

good

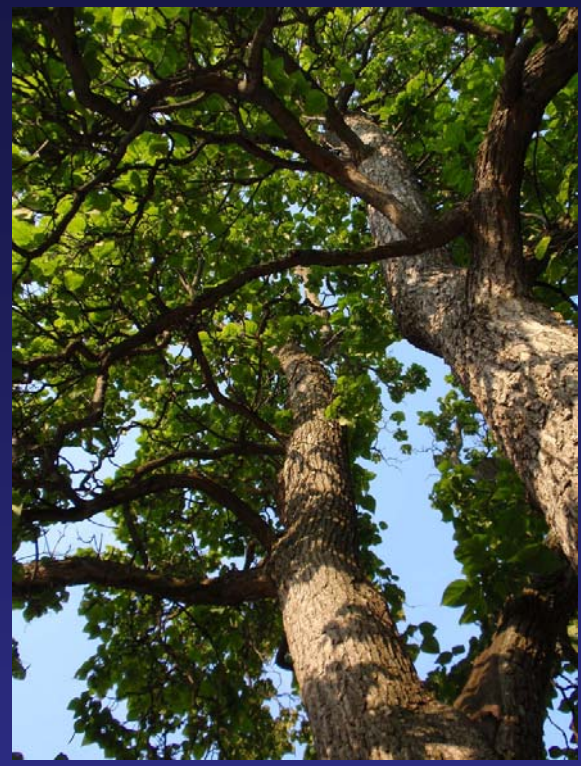
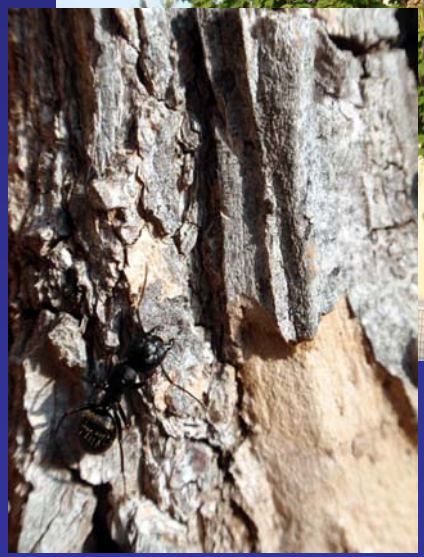
Move your chosen tree to a new location on campus, telling:

(1) Why you chose the new location;

(2) What you hope to accomplish by this move; and,

(3) What the long-term effect of this move will be.




Junk food from Richards Hall vending machine

Vocabulary words used regularly in the next two weeks of class.

Explain this label to your grandparents.

Resources:

- http://ace.unl.edu
- http://bsweb.unl.edu/labs/janovy
- Janovy, J. Jr. 2003. *Teaching in Eden: The Cedar Point Lessons* (Routledge-Falmer)
- Janovy, J. Jr. 2008. *Outwitting College Professors.* Pearson Custom Publishing.

Take-home Messages:

- Information about our students probably should be an integral part of course design.

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- Information about our students probably should be an integral part of course design.
- With this generation of students, “teaching” probably ought to be approached as an exercise in behavior modification.
- Today’s students probably need to be separated from their information technology on a regular basis.
- We should probably start putting a premium on tangible proof of accomplishment that students hold in their hands and show their parents (and grandparents).

Questions, anyone?