

**Morgan State University**  
HBCU in Northern Baltimore City  
Designate Urban University of the State of Maryland



# STUDENTS & PROGRAMS

BA/BS DEGREES IN > 40 DISCIPLINES

15 DOCTORAL PROGRAMS

>30 MS/MA PROGRAMS

GRADUATE	1491
UNDERGRADUATE	7,031
Total	8,522

**Among the top 10 producers in the Nation of African American BS/BA graduates who go on to obtain doctoral degrees in science and engineering**

- **>80% of African American descend**
- **50% Pell grant recipients**
- **SAT mean 930/ACT mean 18**



# **We have opportunities for:**

- Graduate students, post-docs,
- US and foreign nationals
- novices and more experienced fellows welcome!
- different levels of time commitment

## **Typical Courses:**

- Introductory Biology
- Cell and Molecular Biology (upper division)
- Genetics (upper division)
- Developmental Biology (Sophomore-level)
- Neuroscience (spring only)
- Other upper division courses and interdisciplinary teaching as applies in a given semester

# Teaching opportunities for all fellows:

- **The full experience:** Team up with a professor to co-teach an entire class and/or its labs;

## Less Time?

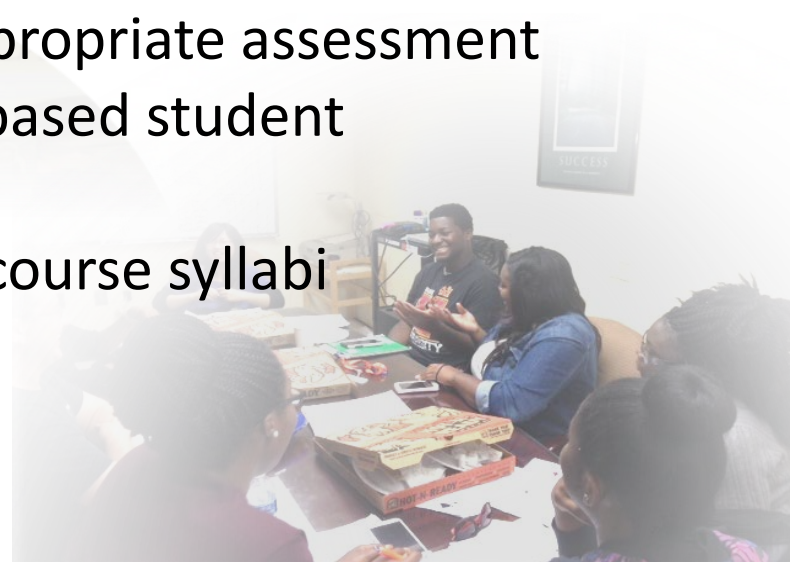
- Work with a professor to help design new teaching modules and/or lab exercises for our Biology classes.
- Work with a program coordinator to devise supplementary instruction modules for interdisciplinary courses.
- Serve as a research team mentor for our ASCEND undergraduate research scholars.

# Experienced Fellows:

- Contract with us to teach an entire class and get paid! *(only available for US citizens and permanent residents)*
- Requires minimum of MS degree or equivalent such as Ph.D. candidacy status
- Classes most frequently available for this option are:  
Introductory Biology for non-majors and majors (BIOL 101 & 103 or 105 & 106), Anatomy & Physiology (BIOL 201 and 202)

# What will you learn?

- How to apply student centered teaching approaches
  - How to conduct formative assessment
  - How to conduct summative assessment
  - How to match class material to appropriate assessment
  - How to design and assess inquiry based student laboratories
  - How to apply backward design to course syllabi
  - How to manage a classroom
- ... and more



# How will you learn?

- You will partner with a MSU faculty member trained in Scientific Teaching
- You will develop a plan for the semester with a mutually agreed upon schedule and tasks
- You will receive formative and summative feedback from your faculty partner



# Our Approach is guided by:

- National Academies Summer Institutes on Undergraduate Education (HHMI)
  - <http://www.academiessummerinstitute.org/>
    - Instructional approaches (Scientific Teaching)
- Vision and Change (originated by AAAS. NSF)
  - <http://visionandchange.org/>
    - Core Competencies
- Pulse Community (co-sponsored by NSF, HHMI, AAAS & NIH)
  - <http://www.pulsecommunity.org/>
    - BioCore Guide



# A National Movement to Improve Science Education, because our students do not learn the way we need them to

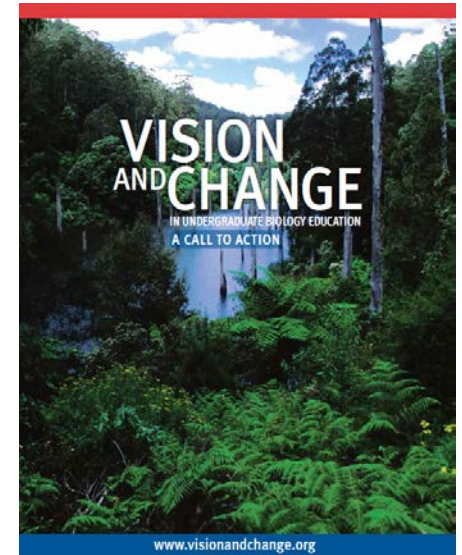
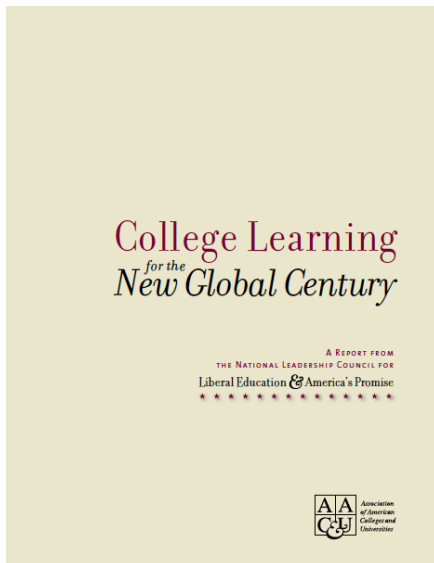
“Student-centered  
learning”  
“Active learning”  
“Inquiry-based  
learning”  
“Scientific teaching”

*Realizing that the status quo in science education is not achieving the results we need, we have to undertake this bold challenge, breathing new life into our classrooms.*

—**Arden Bement, Director, National Science Foundation**

*My hope is that we can change the focus of introductory courses to cover much less material in order to give students the chance to learn what science is and the opportunity to experience science.*

— **Bruce Alberts, AAAS, Editor-in-Chief of *Science* and former President, National Academy of Sciences**



# In line with national efforts and insights from the research literature, we are actively engaged in course redesign and assessment of teaching/learning outcomes

Teaching/learning is supposed to move from here  
Lecture model: “Sage on the Stage”

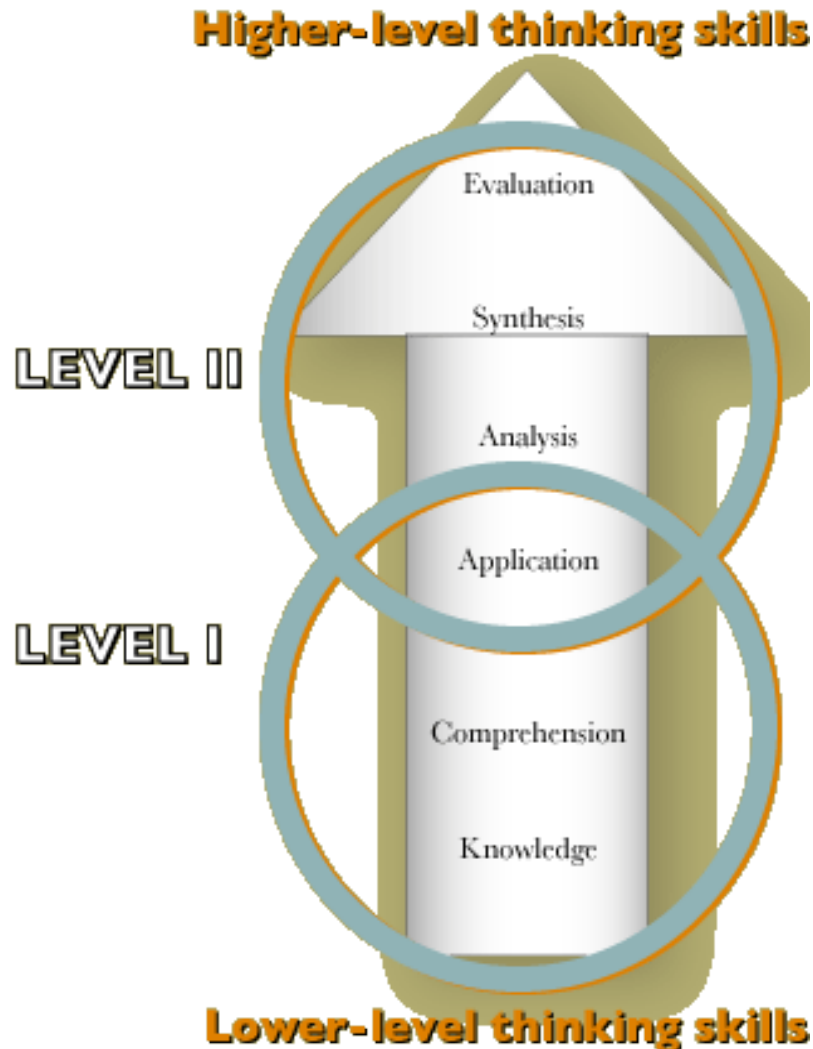


*This requires substantial restructuring of classes  
And labs!*



To here!  
Students construct their own knowledge,  
guided by instructors or near peer mentor  
(slightly advanced peers)

# Objective: Increase Higher order thinking skills



**Evaluation:** appraise, argue, assess, attach, choose compare, defend estimate, judge, predict, rate, core, select, support, value, evaluate.

- **Synthesis:** arrange, assemble, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, write.
- **Analysis:** analyze, appraise, calculate, categorize, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test.
- **Application:** apply, choose, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, write.
- **Comprehension:** classify, describe, discuss, explain, express, identify, indicate, locate, recognize, report, restate, review, select, translate,
- **Knowledge:** arrange, define, duplicate, label, list, memorize, name, order, recognize, relate, recall, repeat, reproduce state.



# Sample Courses:

- **BIOL 105 INTRODUCTORY BIOLOGY FOR MAJORS I—*Three hours lecture, three hours laboratory; 4 credits.*** *This course involves the study of the fundamental principles and concepts of biology with emphasis on molecular and cellular biology and is designed for biology majors only. (FALL/SPRING).*
- **BIOL 106 INTRODUCTORY BIOLOGY FOR MAJORS II— *Three hours lecture, three hours laboratory; 4 credits.*** *This course is a continuation of BIOL 105. Topics covered include the biology of plants, animal development, animal form and function, and basic principles of heredity and evolution biology. It is designed for biology majors only. (FALL/SPRING)*
- **BIOL 536 Molecular and Behavioral Neuroscience (MS level) 3 hours lecture, 3 credits.** *This course will investigate the fundamental concepts of the nervous system, brain and behavior, by emphasizing the interrelationship between neurobiology and cognition. Part I of the course will focus on nervous system structure, function and development and this will be used in part II. , towards the understanding the biological basis of learning, memory, and behavior in both normal and altered states. (Spring)*

***For more information please link to our course catalogue on the MSU website:***

***Url: [http://www.morgan.edu/academics/academic\\_catalogs.html](http://www.morgan.edu/academics/academic_catalogs.html)***

# A future at Morgan

- Ph.D. in Integrative Biology, Florida Atlantic University, 2011
- Postdoctoral fellow, Department of Pediatrics, Johns Hopkins University School of Medicine, 2011 to 2017
- **JHU Teaching Fellow at Morgan State 2015 to 2017**
- **Research focus:** mechanisms underlying heart muscle dysfunction in heart diseases,

## **Dr. YueJin Li**

Fall 2017, appointed  
Assistant Professor  
Of Biology  
Morgan State University



# How to connect and find us

- Please contact Dr. Cleo Hughes Darden, Chair, Department of Biology at 443-885-3070 or e-mail [cleo.hughesdarden@morgan.edu](mailto:cleo.hughesdarden@morgan.edu)
- Our campus is located at the Northeastern edge of Baltimore City
- About 4 miles from the JHU medical campus and about 2 miles from Homewood

