Top Five Reasons Not Clone Graduate Students

Steve Stice
University of Georgia
Diverse Success Graduate Student Stories

Jose Cibelli

Jenny Mumaw

Frank West
NSF Science and Technology Center: Emergent Behaviors of Integrated Cellular Systems

An engineering approach to constructing multi-cellular systems

MIT, Georgia Tech, University of Illinois, University of Georgia
Graduate Education Mission Statement: *Integrate cutting-edge, multidisciplinary research accomplishments into a range of educational endeavors – from journal clubs and workshops to formal courses and curricula – to advance innovative training, diversity of the workforce, and public education for all.*

The primary goals:
• Student career, personal and professional development: communication skills, leadership skills, ethics, IP and patent, and entrepreneurship
• Student enrichment through international experiences
• Student outreach to the K-12 and local community
• Student involvement in knowledge sharing and transfer
• Students engagement in Center research
Research Accomplishments: 1st in class biobots

- Light-activated – raises the potential for steerable biobots

Ray Swetenburg Story: Science and Technology Center

Quantitative phenotypic patterns

Bottom Up (Empirical)

Ray Swetenburg

Doug White

Model Generation

Top Down (Predictive)

Mechanistic Insights
Use of cell death mechanisms to shape the form and function of biobot
Cohesive EBICS Diversity Activities for building the pipeline (and retention through it)

Increased numbers of URM, Women, and People with Disabilities in the Professoriate!

**Intervention:** Repetitive contact and mentoring, targeted recruitment into next stage, constant evaluation and formative assessment
Top Five Reasons not to clone (most) graduate students

**Wiser: Getting Beyond Groupthink to Make Groups Smarter** Cass Sunstein and Reid Hastie

builds on Irving Janis “much of the time both private and public groups blunder not in spite of group deliberation but because of it”

#5 we don’t want Happy Thinking clones
Need anxious students not complacency, anxiety is a motivator and enables students to find out what they need to know

#4 encourage diversity of background (animal scientist, engineers, biochemists, engineers) even vegetarians.

#3 avoid hindsight bias, cultivate free thinking, risk taking

#2 avoid Informational signals
we want students to disclose what they know or believe they know if it is contrary to others opinions.

#1 avoid Social pressures
we don’t want students to just go along with the herd so the appear foolish or disagreeable **Raymond was unafraid**
Graduate students:

1) Sit back, get them to talk and tell you something you did not already know
2) Let them prove the statement that “a week in the library can save 6 months in the lab” is sometimes false.