

# Interdisciplinary Graduate Education at Virginia Tech

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Council of Graduate Schools Annual Meeting

December 5, 2013

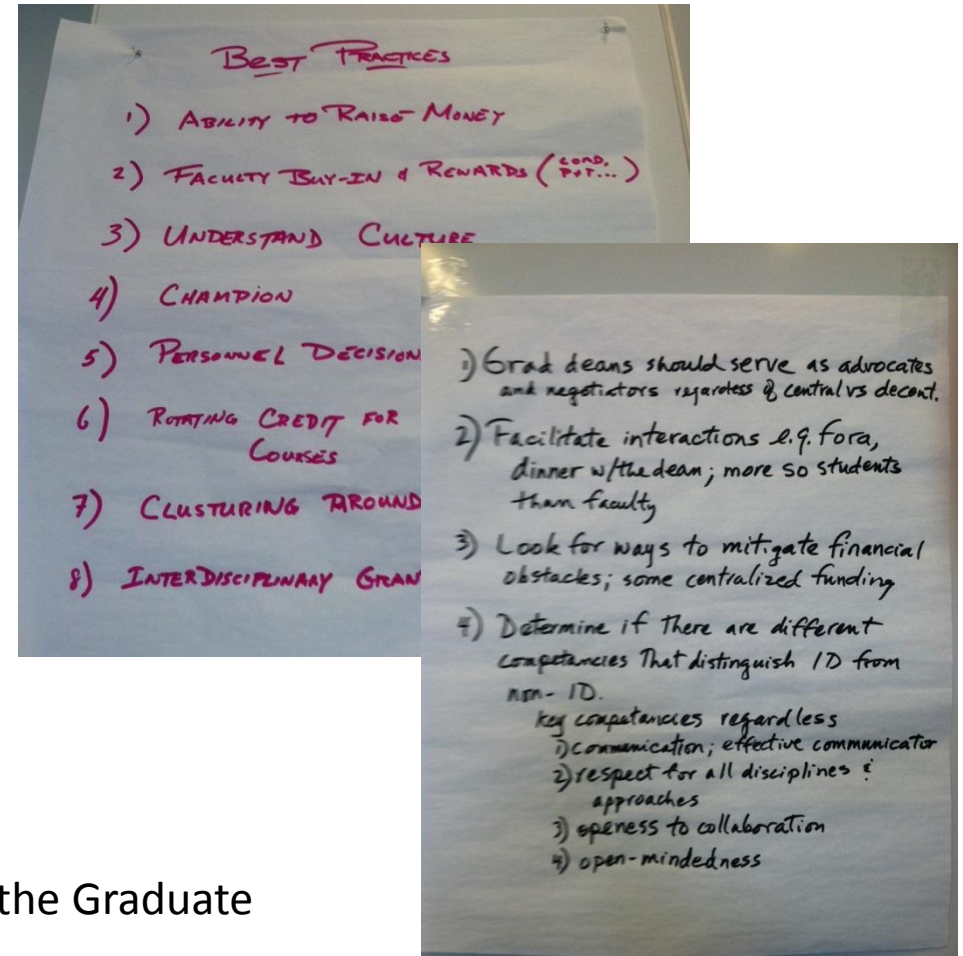
# Strong culture and history for ID at VT

- New individual interdisciplinary PhD
- 5 IGERT grants, one ongoing
- 4 Institutes that support IGEPs
  - Fralin Life Science Institute
  - Institute for Creativity, Arts, and Technology
  - Institute for Critical Technology and Applied Science
  - Institute for Society, Culture, and Environment
- Additional research institutes
  - Virginia Bioinformatics Institute
  - Virginia Tech Carilion Research Institute
  - Virginia Tech Transportation Institute



# Interdisciplinary Graduate Education Workshops

- April and November 2012 in Arlington, VA
  - Recommendation 1: Thoughtfully consider program structures
  - Recommendation 2: Streamline approval processes for interdisciplinary programs
  - Recommendation 3: Champion interdisciplinary graduate programs through the graduate school
  - Recommendation 4: Include interdisciplinarity in strategic planning and link it to university vision and goals ...





# 14 IGEPs in a variety of domains

- Genetics, Bioinformatics, and Computational Biology (existing)
- Macromolecular Science and Engineering (existing)
- MultiSTEPS (2011)
- Sustainable Nanotechnology (2011)
- Translational Plant Science (2011)
- WaterINTERface (2011)
- Computational Tissue Engineering (2012)
- Regenerative Medicine (2012)
- Remote Sensing (2012)
- Translational Obesity Research (2012)
- Bio-Inspired Buildings (2013)
- Disaster Resilience (2013)
- Human Centered Design (2013)
- Interfaces of Global Change (2013)

Currently 50 funded students, 190 affiliated students and 250 faculty members



# IGEP funding model

Most programs have

- 4 graduate student assistantships
  - *Accountable for 10 new PhDs enrolled at VT in 3 years*
- Annual funding
  - \$10K recruiting: travel to conferences and institutions, student visits
  - \$10K administrative: part-time coordinator
  - \$10K operating funds: conference travel, events
- Support for teaching GRAD 5134: Topics in Interdisciplinary Research
  - \$10K for supplies, speakers, or faculty support
  - Approx every 2 years



# IGEP Training Model

- Coursework
  - GRAD 5134 Interdisc Research
  - Seminars and courses in depts
  - Some formalized as certificates or proposed PhD
- Advising, coadvising and mentoring from faculty in different depts
- Blog at <https://blogs.lt.vt.edu/vtige/>
- Workshops and annual meetings
- Journal clubs
- Laboratory rotations
- Field experiences
- Interdisciplinary team projects
- Proposal-writing
- Shared space in offices or labs

# Challenges

- Administrative support
  - Funds stay in Graduate School
  - Assist new programs with accounting and tracking students
  - Established programs have trained staff, typically part time in depts
- Evaluation and criteria for renewal
  - Each program accountable for 10 new PhD enrollments in 3 years
  - Tracking recruiting, degree progress, publications and presentations, patents
  - Annual survey in field now
- Faculty credit for interdisciplinary advising and teaching
  - Reports to departments “double count” collaborative teaching, advising
  - Need to single count (or fractions) for external reporting to state



# Individual Interdisciplinary PhD Application

- Strong letter from advisor with funding commitment
- Letters from committee members (3-4)
- Letters of recommendation (3)
- Scholarly writing sample
- Student's statement of career goals and rationale for pursuing the ID PhD degree
- Description of the interdisciplinary study and research plans including
  - Interdisciplinary program title
  - Coursework plan of study
  - Advisor and advisory committee members
  - Transcripts
  - Preliminary examination topic areas from disciplines involved in the interdisciplinary program
  - Timeline from enrollment to graduation
  - Description of previous research experience and projects
  - Description of the proposed interdisciplinary research