



University of Colorado at Boulder

Interdisciplinary Graduate Education: False Starts and Victories

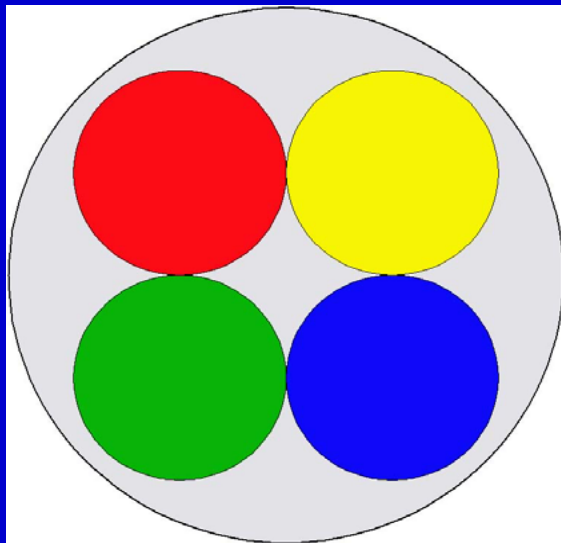
Susan K. Avery

CGS Summer Workshop

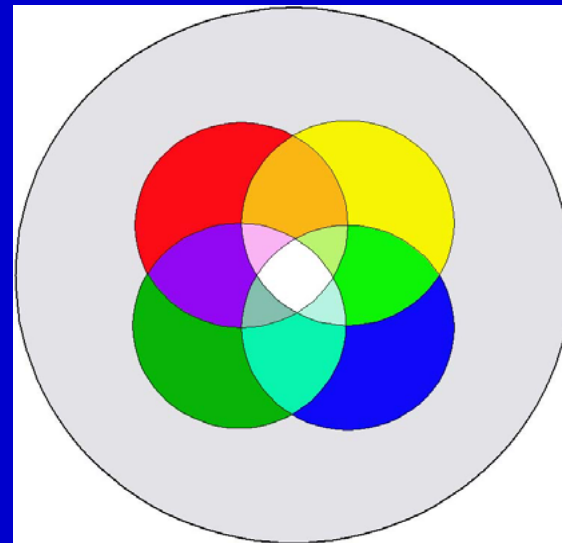
San Juan, Puerto Rico

July, 2007

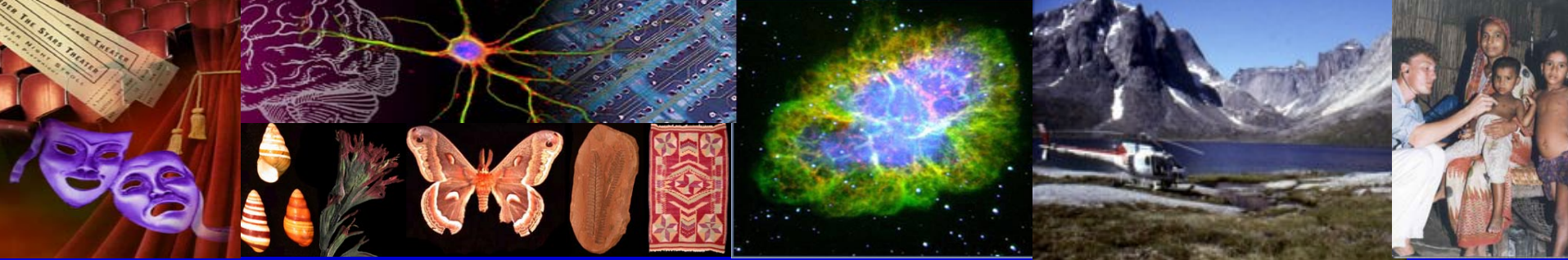
True integration takes work
and doesn't just happen by assembling
would-be collaborators in the same room



Multidisciplinary



Interdisciplinary



- Interdisciplinary research, scholarship, and creative arts a strong tradition at UCB
- Administrative structure in place
 - Institutes and centers with clear structural distinctions that facilitate cross-unit coordination
 - Management and financial infrastructure well established
 - “Institute” (or Graduate School) faculty
 - “Credit” for interdisciplinary work
- Interdisciplinary scholarship readiness
 - Questions that are increasingly complex; faculty and student interest and leadership
 - Tools that enable integration and synthesis
 - Intellectual environment that encourages dialog across boundaries, risk taking, and team trust
 - Focus on related objectives between disciplines and move from collaboration of convenience to interdependence; framing the research question
- Does interdisciplinary scholarship necessarily lead to interdisciplinary graduate education?



Getting Started

- Some disciplines inherently more interdisciplinary than others: easier to engage in interdisciplinary efforts
- Faculty often think of themselves as interdisciplinary but uncomfortable with radical alterations in traditional structures
 - Fear loss of autonomy and identity
 - Probably more interdisciplinary work being done and taught than is reflected in institutional practices such as degree programs
- Decentralized graduate education (pros and cons)
- Departments versus programs

Evolution to Interdisciplinary Graduate Program

Inter. graduate degree program

Interdisciplinary Certificate program

**Interdisciplinary research
Core faculty and active group**



“Interdisciplinary” Graduate Certificates

- Astrobiology
- Development Studies
- Environment, Policy, and Society
- Geophysics
- Human Language Technology
- Molecular Biophysics
- Neuroscience and Behavior
- Population Studies
- Science and Technology Policy
- Women and Gender Studies
- Applied Behavioral Science
- Atmospheric and Oceanic Sciences
- Behavioral Genetics
- Biotechnology
- Cognitive Science
- Hydrologic Sciences
- Optical Science and Engineering
- Remote Sensing



Interdisciplinary Graduate Degree Programs

- East Asian Languages and Cultures (50)
- **Technology, Media, and Society**
- Cognitive Science (9)
- Neuroscience (22)
- Chemical Physics (2)
- Environmental Studies (36)
- Geophysics (7)
- Telecommunications (463)
- Museum Studies (42)



UCB Common Constraints in Development of Interdisciplinary Graduate Programs

- Faculty time commitment
- Graduate student and staff support
- Support for developing necessary curriculum (professional masters)
- Cross-college commitment and culture
- Career progression perceptions
- Teaching and research “credits”



Factors for Success

- Faculty leadership and vision; program development
- Commitment by core faculty
- Student and market demand
- Favorable and supportive administration
- Adequate financial resources
- Supportive organizational structure, rules , and culture, regular review
- Career progression
- Committed support staff



Telecommunications

- Engineering, Law, Economics, Communication, Journalism
- Cluster hiring done
- Student interest high, including large international population
- Market driven and industry engagement (but no Ph.D.)
- 463 degrees over last 5 years: great niche for UCB (MS/MA)
- Students admitted into program directly

- Organizational structure complicated
- Ownership uncertain
- Financial model not sustainable
- Core faculty and career progression uncertain
- Inability to develop Ph.D. program

- Plummet in telecommunications industry – impact
- Restructured program



Neurosciences

- Strong core faculty and student interest
- Academic program development/tracks
- Active research – graduate student support
- Within single academic college – simplified organizational structure, financial model
- 25 degrees over 5 years (Ph.D)

- Entrance into program through department
- Support resources minimal
- Faculty burn-out



Museum and Field Studies

- Anthropology, Biology, Geology
- Core faculty – hires in graduate school with cognate academic homes; curation recognized as part of workload
- University museum infrastructure
- Market niche; high quality program developed – nationally recognized
- 42 degrees over 5 years (MS)

- Staff support (academic versus museum responsibilities)
- Student support (TA's)
- Enhanced goals for museum may be in conflict with academic program



Closing thoughts

- Interdisciplinary graduate education will increasingly become important
- Think through what you already have and pull together with academic deans and provost an agreed upon philosophy, set of guidelines/structures, and resource allocations
- Be flexible
- There will be successes and failures – accept and learn