ASU GLOBAL INSTITUTE of SUSTAINABILITY

ARIZONA STATE UNIVERSITY

sustainability.asu.edu

Embracing Transdisciplinary Sustainability Research

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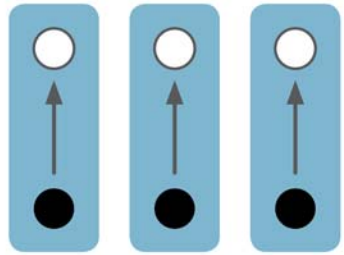
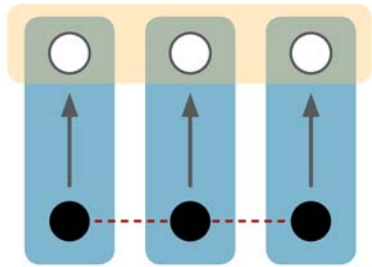
disciplinary

- Within one academic discipline
- Disciplinary goal setting
- No cooperation with other disciplines
- Development of new disciplinary knowledge and theory



multidisciplinary

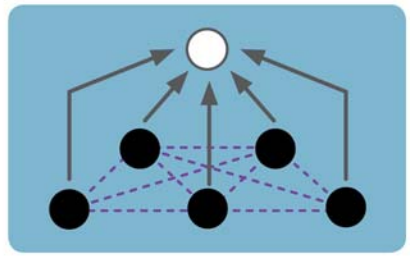
- Multiple disciplines
- Multiple disciplinary goal setting under one thematic umbrella
- Loose cooperation of disciplines for exchange of knowledge
- Disciplinary theory development



B. Tress, G. Tress and G. Fry, "Defining Concepts and the Process of Knowledge Production in Integrative Research," in Proceedings of the Frontis Workshop from Landscape Research to Landscape Planning, Wageningen, The Netherlands, June 2004.

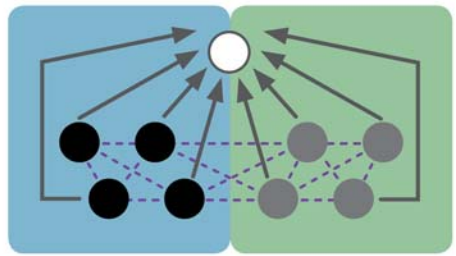
interdisciplinary

- Crosses disciplinary boundaries
- Common goal setting
- Integration of disciplines
- Development of integrated disciplinary knowledge and theory



transdisciplinary

- Crosses disciplinary and scientific/academic boundaries
- Common goal setting
- Integration of disciplines and non-academic participants
- Development of integrated disciplinary knowledge and theory among science and society



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Global Institute of Sustainability

Mission

- Research – 6 Centers
- Education – School of Sustainability
- Solutions
- Business practices

Support

- Fiscal and human resources
- Proposals and projects
- Operations and outreach
- Communications & marketing

Faculty & Staff

- 18 Faculty (School of Sustainability)
- 200+ Sustainability Scientists (GIOS)
- 32 Staff

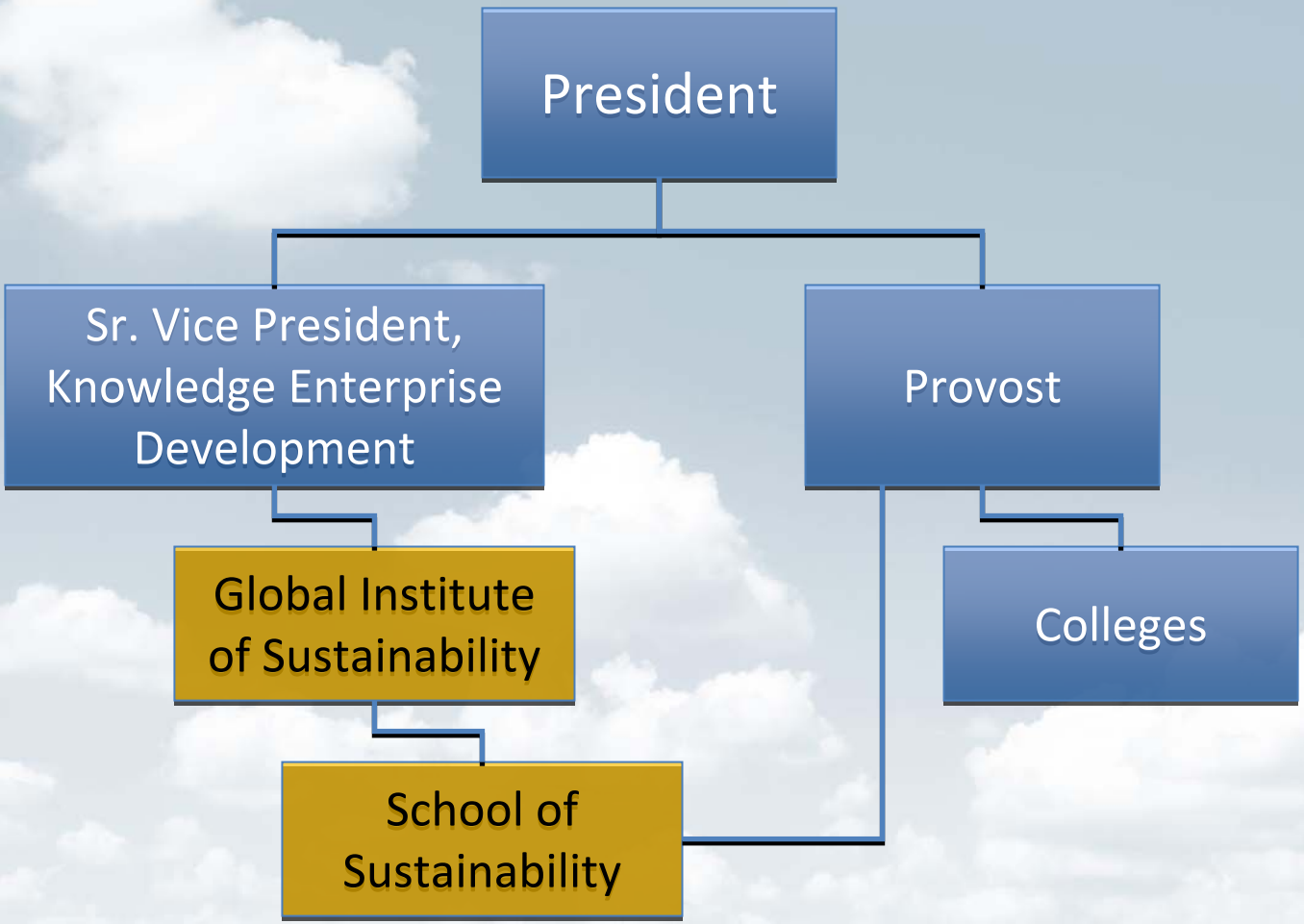
Students

- 581 Undergraduate Majors
- 84 Graduate Students

Finances

- $8 Million Annual Operating Budget
- $10.3 Million Sponsored Research (FY10)

Global Institute of Sustainability



Comprehensive Curriculum Differentiates the School of Sustainability

Intellectual Foundations

- Earth Systems Science
- Social Sciences
- Resource Economics
- Technology and Design
- Policy and Governance

Solutions and Problem Solving

Sustainability as a Value

School of Sustainability Degree Programs

Bachelor of Arts
Bachelor of Science

Master of Arts
Master of Science
Doctor of Philosophy

Minor

Certificate programs (in development)
On-line programs (in development)

Minor in Sustainability

Credit Hours	
3	SOS 100 (online)
Choose courses from two themes 6	Earth Systems; Human Transformation of Earth; Coupled Human-Environment Systems; Social, Political, and Economic Treatment of Natural Resources and Environment
3	SOS 300 (new course)
courses commensurate with major 6	300/400 level Electives; 300/400 level Electives
18	

Sustainability Minor Course Offerings

College/School	School/Department	100/200 # of Courses	300/400 # of Courses
College of Liberal Arts and Sciences	School of Human Evolution and Social Change	3	9
College of Liberal Arts and Sciences	School of Geographical Sciences & Urban Planning	7	28
College of Liberal Arts and Sciences	School of Earth and Space Exploration	2	11
College of Liberal Arts and Sciences	School of Government, Politics and Global Studies	1	0
College of Liberal Arts and Sciences	School of Life Sciences	2	34
College of Liberal Arts and Sciences	School of Social Transformation	0	15
College of Liberal Arts and Sciences	Other Schools	0	15
School of Letters and Sciences		2	6
Herberger Institute for Design & the Arts	School of Architecture & Landscape Architecture	3	4
Herberger Institute for Design & the Arts	School of Design Innovation	1	0
College of Technology & Innovation	Department of Applied Sciences & Mathematics	2	26
College of Technology & Innovation	Other Departments	0	13
Ira A. Fulton Schools of Engineering	All Schools	2	16
W.P. Carey School of Business	Department of Economics	3	14
School of Sustainability		2	1
Other Colleges		0	18
TOTAL		30	210

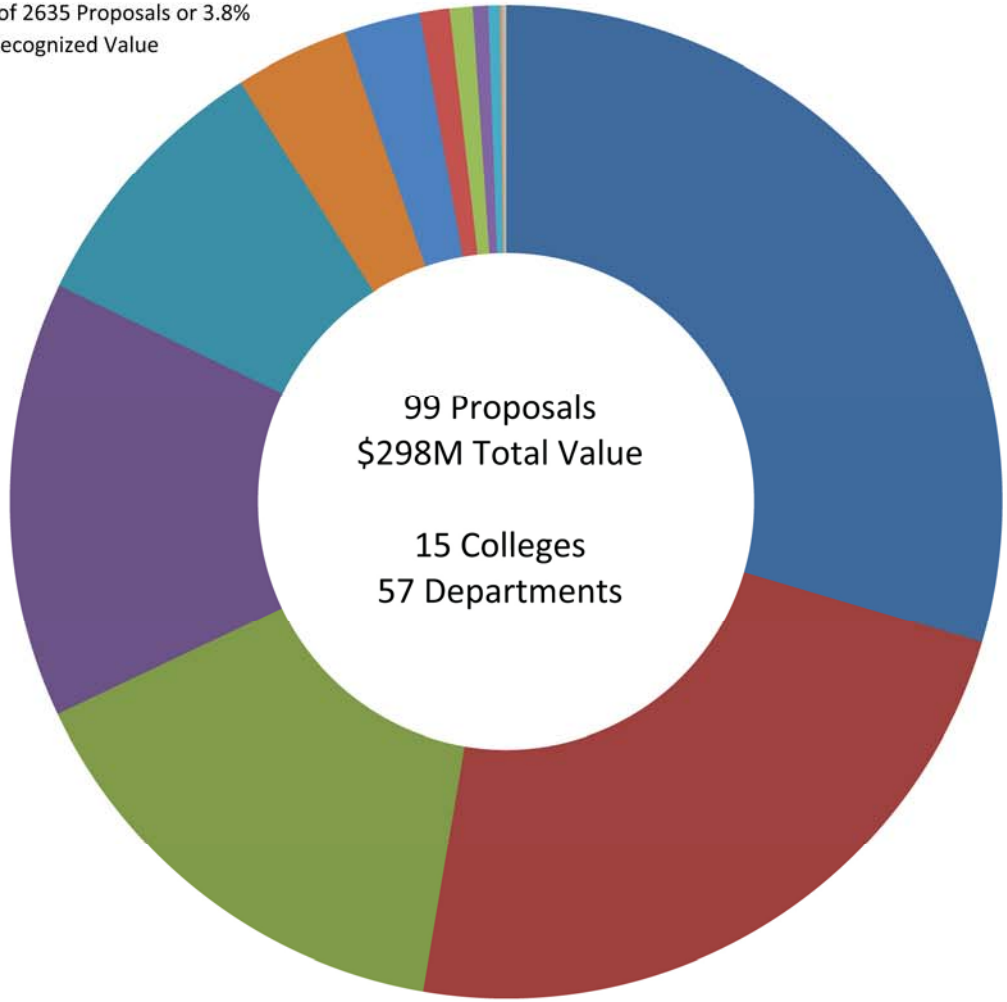

Global Institute of Sustainability is HORIZONTAL
GIOS CONNECTS ASSETS • GIOS IS A MEANS, NOT AN END
W.P. Carey School of Business
Herberger Institute for Design and the Arts
Mary Lou Fulton Institute and Graduate School of Education
Ira A. Fulton Schools of Engineering
Graduate College
Barrett the Honors College
Walter Cronkite School of Journalism and Mass Communication
Sandra Day O'Conner College of Law
School of Letters & Sciences
College of Liberal Arts & Sciences
New College
College of Nursing & Health Innovation
College of Public Programs
School of Sustainability
College of Teacher Education & Leadership
College of Technology and Innovation
University College

GIOS is at the Confluence of ASU Centers and Institutes

64 ASU centers and institutes conduct research on sustainability

FY10 Proposals with GIOS Center Recognition by Investigators' College and Department

Represents $298M of $1.84B University Total or 16.1%
Represents 99 of 2635 Proposals or 3.8%
Area by Total Recognized Value



- College of Liberal Arts and Sciences
- Ira A. Fulton Schools of Engineering
- Global Institute of Sustainability
- College of Technology and Innovation
- Office of Knowledge Enterprise Development
- W.P. Carey School of Business
- Biodesign Institute
- College of Public Programs
- Herberger Institute of Design and the Arts
- Mary Lou Fulton Teachers College
- New College of Interdisciplinary Arts and Sciences
- ASU Libraries
- Sandra Day O'Connor College of Law
- School of Letter and Sciences
- Barrett Honors College

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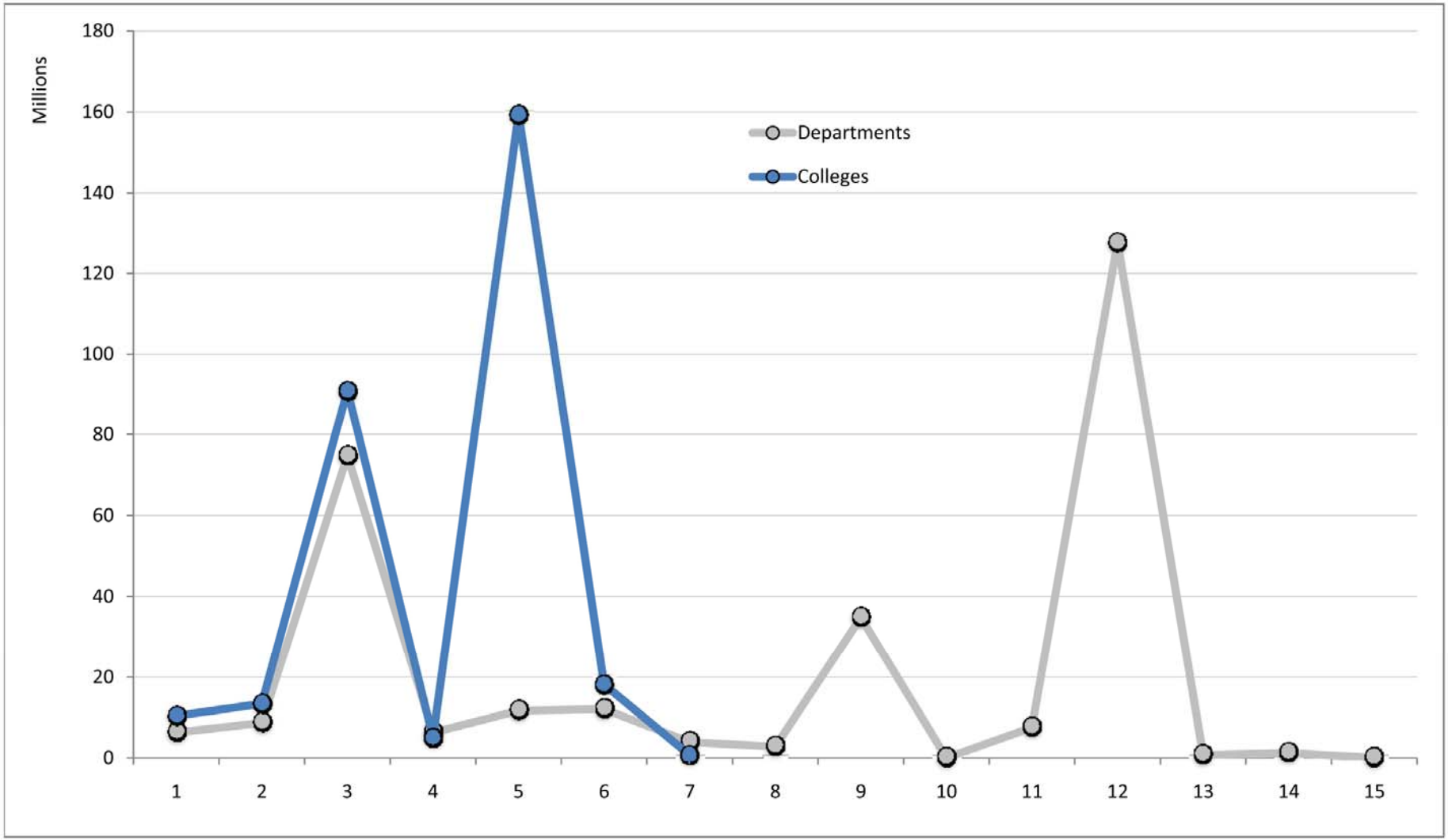

Sustainability Research Projects
(examples)

Decision Center for a Desert City
Scientists from diverse disciplines work with public resource managers to improve water management decision making in arid environments under conditions of uncertainty.

Central Arizona—Phoenix Long-Term Ecological Research
Biological, physical, social, and engineering scientists work with community partners to understand and assess the effects of Metro Phoenix urban development on the Sonoran Desert.

Sustainability Consortium
Corporations, universities and NGOs collaborate to develop standards and systems for assessing consumer product sustainability across the supply chain and product life cycle.

Sustainability Research Projects

(examples continued)

Advancing Conservation in a Social Context

Multidisciplinary researchers work with stakeholders in diverse countries to understand the trade-offs among ecosystem conservation, human development and economic goals.

ASU LightWorks

Multiple light-inspired renewable energy projects from across ASU leverage basic and applied research in artificial photosynthesis, biofuels and next-generation photovoltaics.

Consortium for Science, Policy, and Outcomes

Multidisciplinary teams work with science policymakers to align societal needs and sustainability challenges with science and technology research.


Temozon Meeting 2004
Held a Pan University Sustainability Summit, September 2006
Pushes for Strategic Senior Sustainability Hires
Presidential Leadership
Actively participates in national sustainability leadership organizations
Dedicates resources, including capital investments

Transdisciplinary Design Principles

1. Promote transdisciplinarity at the highest levels of the institution with persistent messaging.
2. Organize sustainability entities outside of the traditional disciplinary stovepipes.
3. Establish broad frameworks for faculty, students, industry, NGOs and others to engage in sustainability education and research beyond formal structures. Focus on challenges, themes and geographical areas.
4. Provide infrastructure (facilities, proposal support, etc.) to support transdisciplinary teams.
5. Put in place social and financial mechanisms for networking and community formation.
6. Hire faculty with a transdisciplinary mindset then set transdisciplinary teaching and research expectations.

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