Research at SIUC:
Fall 2004 Update

Presented to the SIU Board of Trustees
October 14, 2004

John A. Koropchak
Vice Chancellor for Research
and Graduate Dean
Research, Scholarly/Creative Activity, & Research Training (Hereafter, Research) at SIUC:

Why?

&

Where are we now?
# Carnegie Classification of Institutions of Higher Education

## Distribution of Higher Education Institutions by 2000 Carnegie Classification

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Institutions</th>
<th>Percentage Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3,941</td>
<td>100.0</td>
</tr>
<tr>
<td>Doctoral/Research Universities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctoral/Research Universities — Extensive</td>
<td>151</td>
<td>3.8*</td>
</tr>
<tr>
<td>Doctoral/Research Universities — Intensive</td>
<td>110</td>
<td>2.8</td>
</tr>
<tr>
<td>Master’s Colleges and Universities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master’s Colleges and Universities I</td>
<td>496</td>
<td>12.6</td>
</tr>
<tr>
<td>Master’s Colleges and Universities II</td>
<td>115</td>
<td>2.9</td>
</tr>
<tr>
<td>Baccalaureate Colleges</td>
<td>606</td>
<td>15.4</td>
</tr>
<tr>
<td>Associate’s Colleges</td>
<td>1,669</td>
<td>42.3</td>
</tr>
<tr>
<td>Specialized Institutions</td>
<td>766</td>
<td>19.4</td>
</tr>
</tbody>
</table>

**NOTES:** Figures in italics are aggregated from subcategories. Percentage details may not sum to totals due to rounding.

*DOCTORAL RESEARCH-EXTENSIVE: SIUC’S CLASSIFICATION*
Mission areas of SIUC:

teaching, research and service.
## APPROXIMATE FACULTY EFFORT ASSIGNMENTS

<table>
<thead>
<tr>
<th></th>
<th>Teaching</th>
<th>Research</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral Research Extensive</td>
<td>45%</td>
<td>45%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
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<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Associate’s Colleges</td>
<td>90%</td>
<td>0%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Note: at doctoral research-extensive universities, research and teaching are heavily intertwined, especially at the graduate level, but also increasingly at the undergraduate level.
Benefits of University Research

Benefits to Students:

- Students learn not only what is in the textbooks of today, but what will be in the textbooks of tomorrow.
The SIUC team at their first stop in the Dry Valleys. The rocky region is unusual in Antarctica for its lack of snow cover, but it has several permanently ice-covered freshwater lakes (Madigan/Achenbach Antarctica project).
CARBONDALE, Ill. -- Michael T. Madigan, professor of microbiology at Southern Illinois University Carbondale, has won the Carski Foundation Distinguished Teaching Award from the American Society of Microbiology.

The award recognizes excellence in the teaching of microbiology to undergraduate students.
Benefits of University Research

Benefits to Students:

- Students learn not only what is in the textbooks of today, but what is in the textbooks of tomorrow.

- Enriched, problem-solving experiences that better prepare students for success.
Provides graduate students with the cutting-edge experience they deserve

Unique undergraduate research opportunities—hands-on, cutting-edge, problem-solving experience
Sandie Cheung, as an undergraduate, received a grant from the Materials Research Society to develop a way to synthesize metal nanoparticles. Sandie started this research as a HS junior and co-authored a patent before she graduated!
Benefits of University Research
Research: scholarly and creative activity, and research training

Benefits to Students:
- Students learn not only what is in the textbooks of today, but what is in the text books of tomorrow.
- Enriched, problem-solving experiences that better prepare students for success.
- A major positive impact on the reputation of the University.
- Increased value of degrees awarded to students in the future, present and past.
Benefits of University Research

Benefits to SIUC:

- A major positive impact on the reputation of the University.
- Opportunities for budgetary growth.
SIUC Revenue Sources/Percent of Total Revenue:
FY78-FY03

<table>
<thead>
<tr>
<th>Year</th>
<th>Tuition and Fees</th>
<th>Gov't Grants &amp; Contracts</th>
<th>Sales and Services</th>
<th>State Appropriations</th>
<th>Sales &amp; Services</th>
<th>Auxiliary Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY78</td>
<td>56.4%</td>
<td>19.6%</td>
<td>15.6%</td>
<td>11.6%</td>
<td>10%</td>
<td>6.1%</td>
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<tr>
<td>FY88</td>
<td>43.7%</td>
<td>22.5%</td>
<td>10.5%</td>
<td>11.5%</td>
<td>13.5%</td>
<td>12.5%</td>
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<tr>
<td>FY98</td>
<td>40.2%</td>
<td>13.1%</td>
<td>19.4%</td>
<td>9.8%</td>
<td>13.1%</td>
<td>13.1%</td>
</tr>
<tr>
<td>FY01</td>
<td>40.9%</td>
<td>15.2%</td>
<td>19.3%</td>
<td>10.3%</td>
<td>8.4%</td>
<td>15.1%</td>
</tr>
<tr>
<td>FY03*</td>
<td>39.5%</td>
<td>17.3%</td>
<td>17.5%</td>
<td>8.9%</td>
<td>15.1%</td>
<td>17.5%</td>
</tr>
</tbody>
</table>

Source: IPEDS Finance Reports/Institutional Research/General Accounting
Benefits of University Research

Benefits to SIUC:

- A major positive impact on the reputation of the University.
- An opportunity and area for budgetary growth.
- Enhanced ability to attract additional resources to the University.
- Enhanced recruitment and retention of high quality students and faculty.
Cost-share Collaboration

- In 2003, SIUC and the region had no fMRI capability ($multi-M investment required)
- MRI at Carbondale Memorial Hospital upgraded via cost-share with SIUC
- Allowed hiring of Dr. Reza Habib (here today with graduate student Jessica Gerson, BS U California-San Diego) into the Department of Psychology in 2003; and others in 2004
- Cutting-edge experience for students via cost-effective collaboration
Benefits of University Research

Benefits to SIUC:

- A major positive impact on the reputation of the University.
- Enhanced ability to attract additional resources to the University.
- An opportunity and area for budgetary growth.
- Enhanced recruitment and retention of high quality students and faculty.
- A unique strength that distinguishes SIUC from regional institutions.
Doctoral research-extensive: only research university of any kind in the southern half of Illinois!
Benefits of University Research

Benefits to Citizens and the Region:
- New knowledge, from scientific discoveries to works of literature or art.

Hilla Medalia: MA '04, winner of Outstanding Documentary, 2004 Angelus Awards, Sundance Nominee (see Perspectives)
Professor Allison Joseph, Dept of English

- first-place, 2002 Wallace W. Winchell Poetry Competition
- 2003 Word Press Poetry Prize
- fiction prize for 2004, Ohio Valley Literary Group writing contest
- second place for fiction, 2004 competition, Alabama Writers Conclave
September 26, 2003

Graduate students inspire youngsters

By Pete Rosenberg

CARBONDALE, Ill. -- A group of Southern Illinois University Carbondale graduate students is using poetry to nurture and expand children's creativity and imagination.

Now in its second year, the Saluki Poetry Project allows children the freedom to express themselves through poetry. The weekly workshops, consisting of four, one-hour classes, begin Wednesday, Oct. 1, at the Carbondale Public Library. The workshops run from 4 to 5 p.m.................
Benefits of University Research

Benefits to Citizens and the Region:

- New knowledge, from scientific discoveries to works of literature or art.
- Investments in research are highly valued by citizens (*Survey of Illinois Residents*, 1999).
Illinois (and U.S.) voters support funding of research.

**Illinois Residents Support Basic Research**

Even if it brings no immediate benefits, basic science research which advances the frontiers of knowledge is necessary and should be supported by the Federal Government.

- **83%** Strongly/agree
- **14%** Strongly/somewhat disagree
- **3%** Don't know

Source: Illinois 1999
Charlton Research Company
Benefits of University Research

Benefits to Citizens and the Region:

- New knowledge, from scientific discoveries to works of literature or art.
- Investments in research are highly valued by citizens (Survey of Illinois Residents, 1999).
- Enhanced preparation and quality of the workforce via problem-solving experience of graduates.
- Direct economic impact from new resources and personnel attracted to the region to do research. >$65M in external grants and contracts in FY03--> ~$120M in economic impact!
Benefits of University Research

Benefits to Citizens and the Region:

- New knowledge, from scientific discoveries to works of literature or art.
- Investments in research are highly valued by citizens (*Survey of Illinois Residents*, 1999).
- Enhanced preparation and quality of the workforce via problem-solving experience of graduates.
- Direct economic impact from new resources and personnel attracted to the region to do research.
- New jobs, spending and taxes generated by new companies derived from university-developed intellectual property.
Solving LUST problems!

- Initial sample collection with a GeoProbe
- Two plots 4.5 x 4.5 x 3 m
- Breakage and mixing of the excavated clay

BioInsite: Bioremediation company at Southern Illinois Research Park based on campus research --> reducing the cost of reclamation of leaking underground storage tank (LUST) sites
turned it an unbleachable pink, he said.

Illinois-based GloTell Distributors LLC, Best of all, the treated and dyed ammonia rendered any meth it was used to make difficult to dry and

helped farmers detect any tank leaks, said Fruit Cleaners’ spokesman for

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Researchers at the University of Southern Illinois Carbondale found it did

With the new York Blade - New York, NY, USA

Pink dye designed to foil makers of methamphetamine

Leak Detector

Marking Agent

Thief Deterrent

GloTell
Integration of New Technologies to Existing Coal Preparation Plants

Professor Manoj Mohanty is applying state of the art mineral processing to Illinois coal mining. Results demonstrate reduced waste discharge and enhanced coal cleaning. Research at SIUC’s unique large-scale laboratories is transferred directly to Knight Hawk Coal Company mine in Jackson County.

More Competitive Illinois Coal Industry!
FutureGen

A $1B, 10-year Global Partnership Effort

Goal: A US/DoE-led global effort to pioneer coal-to-hydrogen and carbon management technologies for coal

SIUC part of team leading efforts to attract FutureGen to Illinois
- tremendous job creation and coal revitalization potential
- vision for midwest/national leadership in energy production
Goal: to be “.... among the top 75 public research universities by the year 2019...”

And the recent results and outlook for SIUC are bright...........
In calendar year* 2003, SIUC faculty:
- published 957 manuscripts
  75 books, and
  199 book chapters
- held 290 productions, and
  49 exhibitions
- made 409 international presentations,
  919 national presentations, &
  573 state presentations

* SoM Springfield data are for Fiscal Years
SIUC Ranking Among Publics: Total R&D

Source: National Science Foundation, Academic Research and Development Expenditures

Most reliable measure of research competitiveness: R&D expenditures

The Top American Research Universities, The Center, June 2000
Total Dollars from External Awards*:
TOTAL GRADUATE ENROLLMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
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<tbody>
<tr>
<td>FALL 99</td>
<td>3090</td>
</tr>
<tr>
<td>FALL 00</td>
<td>3180</td>
</tr>
<tr>
<td>FALL 01</td>
<td>3195</td>
</tr>
<tr>
<td>FALL 02</td>
<td>3341</td>
</tr>
<tr>
<td>FALL 03</td>
<td>3352</td>
</tr>
<tr>
<td>FALL 04</td>
<td>3315</td>
</tr>
</tbody>
</table>

*not including continuing enrollment (601)*
Here today:

- Professor Michael Madigan
- Matt Sattley, microbiology doctoral student
- Professor Reza Habib
- Jessica Gerson, psychology graduate student
- Professor Allison Joseph
- Maggie Shellody, english graduate student
- Professor Manoj Mohanty
- Steve Carter, President, KnightHawk Coal Co.
- Undergrad student research posters in lounge
- Grad Highlights, Research Profile, Perspectives