Metrics of Mission: Measuring and Articulating the Value of Undergraduate Research

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Presenters

• Janet Ericksen, Interim Vice Chancellor for Academic Affairs and Dean, University of Minnesota, Morris

• Janet L. Gooch, Executive Vice President for Academic Affairs and Provost, Truman State University

• Krista Maxson, Vice President for Academic Affairs, University of Science and Arts of Oklahoma

• Karin Peterson, Interim Provost and Vice Chancellor for Academic Affairs, University of North Carolina Asheville

• Stacey Robertson, Provost and Vice President for Academic Affairs, SUNY Geneseo
What is the Value of Undergraduate Research?

• Interested in assessing the outcomes of an undergraduate research (UR) experience, particularly in the context of a public liberal arts and sciences education

• Constructed a pilot survey to determine the gains of such an experience

• Each institution administered survey to alumni or current students who had an UR experience

• Students responded using a Likert-Scale
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
Example Questions

Surveyed students about outcomes directly tied to a UR experience

• “Did your participation in an undergraduate research experience increase your understanding of the research process?”
Example Questions

Also surveyed students about outcomes not directly associated with a UR experience but important in a liberal arts and sciences education

• “Did your participation in an undergraduate research experience increase your leadership skills?”
Think-Pair-Share

• Break into groups and brainstorm
• What other outcomes “positive by-products” might be achieved through an UR experience in the context of a liberal arts and sciences education (whether at a public liberal arts college or at other types of institutions)?
• Write down your ideas on the provided sticky notes
• Take 10 minutes and then we will report out
General Results

• We found expected confirmation of outcomes directly related to a UR experience and some surprises
• Students reported outcomes not directly tied to a UR experience were achieved
• Outcomes viewed as “positive by-products” of a UR experience in the context of a liberal arts and sciences education - considered “value-added”
<table>
<thead>
<tr>
<th>Skill</th>
<th>Geneseo</th>
<th>UNCA</th>
<th>TRU Grads</th>
<th>TRU current</th>
<th>USAO</th>
<th>UMN Morris</th>
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<tbody>
<tr>
<td>Participating in undergraduate research enhanced or increased my:</td>
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<td>intellectual abilities.</td>
<td>4.4</td>
<td>4.6</td>
<td>4.6</td>
<td>4.3</td>
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<td>ability to work collaboratively. (work in teams)</td>
<td>4.0</td>
<td>3.6</td>
<td>3.6</td>
<td>4.3</td>
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<td>leadership skills.</td>
<td>4.0</td>
<td>3.8</td>
<td>3.6</td>
<td>4.0</td>
<td>3.9</td>
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<td>ability to work independently, such as by setting realistic goals</td>
<td>4.2</td>
<td>4.5</td>
<td>4.5</td>
<td>4.2</td>
<td>4.5</td>
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<td>and meeting self-imposed deadlines. (set my own deadlines)</td>
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<td>understanding of the research process.</td>
<td>4.8</td>
<td>4.9</td>
<td>4.9</td>
<td>4.8</td>
<td>4.9</td>
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Participating in undergraduate research enhanced or increased my:

- ability to tolerate ambiguity.
  - Geneseo: 3.6
  - UNCA: 3.9
  - TRU Grad: 3.6
  - Tru curr: 4.1
  - USAO: 4.1
  - UMN Morris: 4.1

- sense of myself as a member of a scholarly community.
  - Geneseo: 4.3
  - UNCA: 4.1
  - TRU Grad: 4.0
  - Tru curr: 4.1
  - USAO: 4.1
  - UMN Morris: 4.6

- confidence in my scholarly abilities.
  - Geneseo: 4.3
  - UNCA: 4.0
  - TRU Grad: 4.2
  - Tru curr: 4.2
  - USAO: 4.4
  - UMN Morris: 4.7
Participating in undergraduate research enhanced or increased my:

- appreciation for connection between academic research and real world.
- interest to participate in social activism. (work to solve social problems)
- interest in attending graduate school.
- interest in study abroad or travel more generally.

[Bar chart showing ratings for each institution]
Take-aways include:

- Asking additional or different survey questions such as:
  - “Participating in an UR experience increased my sense of belonging on campus”
  - “Participating in an UR experience increased my sense of empowerment to overcome obstacles and adversity”

- Data provide fuel for further thought. No control group was surveyed
- There may be differences in responses between current students and alumni - needs further exploration
Summary and Conclusions

• There are expected outcomes for participation in an UR experience (increasing knowledge of the research process; increasing appreciation for connections between academic research and the “real world”)

• Assessing these outcomes is important - ensure quality of experience, continual improvement

• Additional “happy byproducts” are achieved through participation in UR, especially in the context of a public liberal arts and sciences education
Implications

Broad outcomes related to leadership, citizenship, global awareness may be achieved

• How can we maximize the outcomes of a research experience in the context of a public liberal arts and sciences education?
• Should these value-added outcomes be included on syllabi for undergraduate research experiences?
• Should they be discussed explicitly in the context of the research experience?
• What can we do to prompt students to reflect on their research experience in the context of a liberal arts and sciences education?
• What connections can we encourage them to make?