Proposed UH Productivity and Efficiency Metrics

Presented on behalf of the UH Officers
April 2, 2014
Work in progress
Background

- UH Officers Sub-Committee: Interim President, Interim Executive Vice President, Vice President for Community Colleges, Vice President for Budget and Finance, and the Chancellors of the 4-year institutions
- The current Strategic Outcome Measures and goals end in 2015 and need to be updated
- These measures support the “High Performance System of Higher Education and the Hawaii Graduation Initiatives” of the 2015-2021 Strategic Directions
Outline of Presentation

Review of potential measures

– Productivity Measures: focusing of outcomes and success of students

– Efficiency Measures: focusing on cost and resources needed to produce degrees

• Questions
Proposed Productivity Measures

Measure 1: The number of degrees and certificates
   – CAs and higher
   – Set growth targets

Major source of data:
Common national data, *US Department of Education, Integrated Postsecondary Education Data System (IPEDS)*, to allow for comparisons with peer institutions
“55% of Hawai‘i’s working age adults to have a 2-year or 4-year college degree by the year 2025.”

Hawai‘i’s goal to have 55% earn a college degree by year 2025
Hawai‘i’s Degree Gap

Cumulative Degree Gap: 56,803 degree holders

Current Trend

GOAL

% of Population with Degree

43% 43% 42% 42% 43%

Source: NCHEMS & U.S. Census Bureau, American Community Survey, 1-year estimates, 2006 to 2012
UH will need a 6% annual growth in Associates and Bachelor degrees to reach the goal

Source: University of Hawai‘i Institutional Research and Analysis Office
Proposed Productivity Measures

Measure 2: The number of students who graduate on time
   – 100% and 150% grad rates (First time, Full Time IPEDS definition)
     • Compare to peers/benchmarks
     • Compare to grad rates for Native Hawaiians, URM, PELL
     • Consider including grad plus transfer rate for CCs;

Measure 2a: Graduation rate for Part-time students
   – 200% for 4 years and 300% grad rates for 2 years (First time IPEDS definition)

Peers are current established peers and IPEDS Auto Select Peers

Major source of data:
Common national data, *US Department of Education, Integrated Postsecondary Education Data System (IPEDS)*, to allow for comparisons with peer institutions
150% graduation rates have been relatively steady

Graduation Rates within 150% of Normal Time – UH Units

- UH Mānoa, 56.5%
- UH Hilo, 36.4%
- UH West O’ahu, 25.0%
- UHCC Average, 13.8%
UH Mānoa’s six-year graduation rate is below its peers at 55.7%
UH Hilo’s six-year graduation rate is close to its peers

Graduation Rates within 150% of Normal Time
UH Hilo Comparison Group


Academic Year

0% 10% 20% 30% 40% 50% 60% 70%

UH Hilo, 39.1%
Peer Group, 40.1%
IPEDS Group, 41.3%
UHCC three-year graduation rates are below their peers
Graduation Rates - UH 4 year

First-time, Full-time, Freshmen

<table>
<thead>
<tr>
<th></th>
<th>UH Mānoa</th>
<th>UH Hilo</th>
<th>UH West O‘ahu</th>
</tr>
</thead>
<tbody>
<tr>
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<td>21.2%</td>
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<tr>
<td>58.6%</td>
<td>66.7%</td>
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</tbody>
</table>

TOTAL Native Hawaiian URM PELL

100% (Fall 2009)

UH Mānoa

150% (Fall 2007)

UH Hilo

UH West O‘ahu

100%

150%
Graduation Rates - UH 2 year

First-time, Full-time, Freshmen

100% (Fall 2011)

<table>
<thead>
<tr>
<th></th>
<th>Haw</th>
<th>Hon</th>
<th>Kap</th>
<th>Kau</th>
<th>Lee</th>
<th>Mau</th>
<th>Win</th>
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<tbody>
<tr>
<td>Native Hawaiian</td>
<td>4.1%</td>
<td>1.9%</td>
<td>3.1%</td>
<td>5.1%</td>
<td>1.2%</td>
<td>3.3%</td>
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<td>URM</td>
<td>3.2%</td>
<td>1.6%</td>
<td>1.8%</td>
<td>4.9%</td>
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<tr>
<td>PELL</td>
<td>3.9%</td>
<td>1.2%</td>
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<td>2.8%</td>
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<td>1.6%</td>
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150% (Fall 2010)

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<th>Win</th>
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<tbody>
<tr>
<td>Native Hawaiian</td>
<td>20.8%</td>
<td>11.8%</td>
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<td>9.4%</td>
<td>11.2%</td>
<td>10.1%</td>
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<tr>
<td>PELL</td>
<td>17.9%</td>
<td>10.3%</td>
<td>19.6%</td>
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<td>10.6%</td>
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TOTAL

<table>
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<tr>
<td>URM</td>
<td>(Fall 2011)</td>
<td>(Fall 2010)</td>
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<td>(Fall 2011)</td>
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<tr>
<td>PELL</td>
<td>(Fall 2011)</td>
<td>(Fall 2010)</td>
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<td>(Fall 2010)</td>
<td>(Fall 2011)</td>
<td>(Fall 2010)</td>
<td>(Fall 2011)</td>
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</table>
200% Graduation Rates for Part-time Students - UH 4 year

First-time, Part-time, Freshmen

200%
(Fall 2005)

<table>
<thead>
<tr>
<th>University</th>
<th>TOTAL</th>
<th>Native Hawaiian</th>
<th>URM</th>
<th>PELL</th>
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<tbody>
<tr>
<td>UH Mānoa</td>
<td>45.0%</td>
<td>40.0%</td>
<td>38.5%</td>
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<tr>
<td>UH Hilo</td>
<td></td>
<td>50.0%</td>
<td>23.5%</td>
<td>28.6%</td>
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</tbody>
</table>

* Fall 2005 Cohort information for UH West O’ahu not available.
300% Graduation Rates for Part-time Students - UH 2 year

First-time, Part-time, Freshmen

300%
(Fall 2007)
Proposed Productivity Measures

Measure 3

. The number and success rate of students who transfer

• Transfer-in cohort size and grad rate, for four years only
  – Grad time frame 100% and 150%, determined by # of credits transferred in

• Transfer out rate for CCs and West Oahu and Hilo (in progress)
  – Transfer anywhere, use National Student Clearinghouse (NSCH);
  – FTFT cohort matching IPEDS

• % of Transfer out that go to a UH 4 year (in progress)
  – Denominator: use all transfers from a CC to 4 year, all students in First Time cohort including part-time and those that transfer with degrees
  – Numerator: # that go to UH 4-years
Transfers Into UH 4-Year from UHCC in an Academic Year

*Students who have had a change in home campus and a student type indicating transfer status
Transfer-in Graduation Rates - UH 4 year

Transfer-in, All Degree Seeking Students

<table>
<thead>
<tr>
<th></th>
<th>100% (Fall 2007)</th>
<th>150% (Fall 2007)</th>
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<tbody>
<tr>
<td>UH Mānoa</td>
<td></td>
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</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>UH West O’ahu</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>100%</th>
<th>150%</th>
</tr>
</thead>
<tbody>
<tr>
<td>UH Mānoa</td>
<td>52.7%</td>
<td>60.4%</td>
</tr>
<tr>
<td>UH Hilo</td>
<td>38.5%</td>
<td>46.2%</td>
</tr>
<tr>
<td>UH West O’ahu</td>
<td>52.7%</td>
<td>61.6%</td>
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<table>
<thead>
<tr>
<th></th>
<th>0-29</th>
<th>30-59</th>
<th>60-89</th>
<th>90+</th>
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<td>UH Mānoa</td>
<td>29.0%</td>
<td>29.4%</td>
<td>21.0%</td>
<td>13.7%</td>
</tr>
<tr>
<td>UH Hilo</td>
<td>14.4%</td>
<td>20.7%</td>
<td>22.9%</td>
<td></td>
</tr>
<tr>
<td>UH West O’ahu</td>
<td>20.0%</td>
<td>22.8%</td>
<td>5.9%</td>
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</table>

TOTAL          | 0-29 | 30-59 | 60-89 | 90+  |
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<tbody>
<tr>
<td>UH Mānoa</td>
<td>60.4%</td>
<td>54.4%</td>
<td>61.8%</td>
<td>58.3%</td>
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<tr>
<td>UH Hilo</td>
<td>46.2%</td>
<td>47.5%</td>
<td>57.7%</td>
<td>48.6%</td>
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<tr>
<td>UH West O’ahu</td>
<td>61.6%</td>
<td>47.2%</td>
<td>55.2%</td>
<td>35.3%</td>
</tr>
</tbody>
</table>
Proposed Productivity Measures

Measure 4. Post graduate outcomes

• Workforce (exact measure not yet determined)

• Continuing to higher level of education (exact measure not yet discussed)
Proposed Efficiency Measures
Definitions: The Cost of Education

Total Education and General Expenditures
- Instruction
- Research
- Public Service
- Academic Support
- Student Services
- Institutional Support
- Operations and Maintenance
- Scholarships and Fellowships expenses

Total Education and Related Expenditures
- Instruction
- Student Services
- Pro-rated share of Academic Support, Institutional Support and Operations and Maintenance
- Does not include Research, Public Service and Scholarships and Fellowships expenses
Total education and general expenditures has increased an average of 3.6% annually while education and related expenditures has increased by 4.7%. 

Components of Education & General Expenditures – UH System

Average Annual Percentage Growth:
- Total: 3.6%
- Education: 4.7%
- Research: 2.7%
- Public Service: 1.1%
- Scholarships: 3.4%

Total E&G Exp, 2012
- $1,334.1M
- Scholarships: $45.5
- Public Service: $81.4
- Research: $488.2
- Education: $719.1

All dollar amounts adjusted to 2012 dollars.
Growth in Education & Related spending was higher in percentage terms at UHH and UHWO than at UHM or the UHCCs.

Total Education & Related Expenditures – UH Units

All dollar amounts adjusted to 2012 dollars.

- UH Mānoa, $380.9
- UHCCs, $218.4
- UH Hilo, $81.9
- UH West O‘ahu, $16.9

Fiscal Year: 2002 to 2012

$ Millions:
- $291.5
- $218.4
- $148.6
- $42.2
- $5.7

$ Millions

0
5.7
42.2
148.6
218.4
291.5
300
330
360
390
420

Instruction comprises 71% of total E&R expenditures at UH Mānoa, 52% at UH Hilo, 44% at UH West O‘ahu and 60% at the UH Community Colleges.
Proposed Efficiency Measures

Measure 1:
Institutional Support Expenditures over total Education and General Expenditures
  • Includes general administration, fiscal, legal, and personnel
  • Compare to peers/benchmarks

Source: US Department of Education, Integrated Postsecondary Education Data System (IPEDS)
Institutional support expenditures as a share of total E&G spending

Institutional Support Expenditures as a Percent of E&G – UH Units

- System Office, 38.1%
- UH West O‘ahu, 35.3%
- UH Hilo, 14.6%
- UHCCs, 10.4%
- UH Mānoa, 1.1%

Fiscal Year

Proposed Efficiency Measures

Measure 2a.

Educational and institutional costs per FTE student

- Education and Related Spending
- Compare to peers/benchmarks

Source: US Department of Education, Integrated Postsecondary Education Data System (IPEDS)

Definitions:

- Completions = Certificates >1 year and all degrees
- E&R Spending = Cost of instruction (salaries and wages, fringe benefits, other expenditures), student services, and the instructional share of academic support, institutional support and operations & maintenance (excludes cost of research, public services and CIP)
Education and Related Spending per FTE

Education & Related Expenditures per FTE Student – UH Units

- UH Hilo, $22.6
- UH Mānoa, $22.6
- UH West O‘ahu, $17.4
- UHCC Average, $12.0

All dollar amounts adjusted to 2012 dollars.
UH Mānoa E&R spending per FTE student is higher than its peers

Education & Related Expenditures per FTE Student
UH Mānoa Comparison Group

- UH Mānoa, $22.6
- IPEDS Group, $18.8
- Peer Group, $15.8

All dollar amounts adjusted to 2012 dollars.
UH Hilo’s E&R Spending per FTE student is higher than its peers.

Education & Related Expenditures per FTE Student
UH Hilo Comparison Group

- UH Hilo, $22.6
- Peer Group, $19.0
- IPEDS Group, $14.8

All dollar amounts adjusted to 2012 dollars.
UH West O‘ahu’s E&R spending per FTE student has increased in the last year to be higher than its peers.

**Education & Related Expenditures per FTE Student**

**UH West O‘ahu Comparison Group**

- UH West O‘ahu, $17.4
- Peer Group, $15.9
- IPEDS Group, $13.5

All dollar amounts adjusted to 2012 dollars.
UHCC’s E&R Spending per FTE student is higher than its Peers

All dollar amounts adjusted to 2012 dollars.
Proposed Efficiency Measures

Measure 2b. Educational and institutional costs per completion

• Education and Related Spending over all degrees and certificates of one year or more
• Compare to peers/benchmark
• Consider adding in transfer out for CC’s as part of measure
Inflation adjusted costs for E&R spending per completion have been relatively stable, with the exception of UH West O‘ahu with its new lower division and UH Hilo with its new College of Pharmacy.
In 2012, UH Mānoa’s E&R expenditures per completion was slightly higher than its peers.
UH Hilo’s E&R expenditures per completion increased beginning in 2007, with the establishment of the College of Pharmacy, but decreased in 2011 and 2012 to be slightly higher than its peers.
E&R expenditures per completion have been rising for UH West O‘ahu, but it remains below its peers.

Education & Related Expenditures per Completion
UH West O‘ahu Comparison Group

All dollar amounts adjusted to 2012 dollars. Completion excludes Certificates <1 Year.
The UHCCs E&R expenditures per completion have increased slightly but remain close to their peers.

**Education & Related Expenditures per Completion**

**UHCC Comparison Group**

All dollar amounts adjusted to 2012 dollars. Completion excludes Certificates <1 Year.
Proposed Efficiency Measures

Measure 3. Average number of credits of graduates
   • Average Credits to completion

Measure 4. Number of programs with 5 or less graduates
   • Average over 3 years
   • Excludes programs in existence for less than three years
   • Include all programs
Average Credits to Completion

<table>
<thead>
<tr>
<th>Institution</th>
<th>Full-Time Bachelor’s Degree-Seeking Students</th>
<th>Full-Time Associate Degree-Seeking Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>UH Mānoa</td>
<td>132.3</td>
<td>75.21</td>
</tr>
<tr>
<td>UH Hilo</td>
<td>131.42</td>
<td>72.51</td>
</tr>
<tr>
<td>HawCC</td>
<td>126.05</td>
<td>75.17</td>
</tr>
<tr>
<td>HonCC</td>
<td>124.11</td>
<td>74.31</td>
</tr>
<tr>
<td>KapCC</td>
<td>66.37</td>
<td>72.74</td>
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<tr>
<td>KauCC</td>
<td>131.42</td>
<td>78.41</td>
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<td>LeeCC</td>
<td>124.11</td>
<td>71.96</td>
</tr>
<tr>
<td>MauC</td>
<td>126.05</td>
<td>71.43</td>
</tr>
<tr>
<td>WinCC</td>
<td>66.37</td>
<td>78.22</td>
</tr>
</tbody>
</table>

AY 2009 | AY 2011

- Full-Time Bachelor’s Degree-Seeking Students: UH Mānoa 132.3, UH Hilo 131.42, HawCC 126.05, HonCC 124.11
- Full-Time Associate Degree-Seeking Students: UH Mānoa 75.21, UH Hilo 72.51, HawCC 75.17, HonCC 74.31, KauCC 72.74, LeeCC 78.41, MauC 71.96, WinCC 78.22
Number of programs with 5 or less average degrees awarded from Fiscal Years 2010-12

Programs with 5 or Less Graduates

- Mānoa: 42
- Hilo: 6
- West O‘ahu: 8
- Hawaiʻi: 15
- Honolulu: 22
- Kapiʻolani: 8
- Kauaʻi: 12
- Maui: 15

Legend:
- Advanced Prof Certificate
- Associate
- Certificate
- Baccalaureate
- Master
Proposed Efficiency Measures

Measure 5: Ratios of students to faculty, to staff and to E/M employees
  • Compare to peers/benchmark

Measure 6: SSH per FTE Faculty
  • Compare to peers/benchmark

Source: IPEDS
Student/Staff Ratios

1. FTE Students per FTE Instructional Faculty
2. FTE Students per Executive / Managerial
3. FTE Students per Professional / Technical
4. Student Semester Hours (SSH=credits per class X number of students X number of classes) per FTE Instructional Faculty

Goals:
- Increase ratio of students per instructional faculty comparable to peers
- Increase SSH production per instructional faculty
Sources: IPEDS

Definitions:

**FTE students**: Full-time plus part-time multiplied by a factor that varies by sector of institution and level of student (IPEDS method)

**FTE Instructional Faculty**: All faculty whose responsibility is primarily instruction, with an adjustment for part-time faculty.

**Executive / Managerial**: Persons whose assignments involve management of the institution, or a customarily recognized department or subdivision thereof. Assignments require the performance of work directly related to management policies or general business operations of the institution, department or subdivision.

**Professional / Technical**: Other Professionals plus Technical and Paraprofessionals (excludes clerical and maintenance workers)

**SSH**: 12-Month Semester Hours offered (all levels)
FTE students per FTE faculty have increased slightly in recent years and are highest at UHCC (19.4) and lowest at UHM (11.9)
FTE students per FTE faculty measured 11.9 for UH Mānoa and about 17 for its peers in 2012.
UH Hilo’s FTE students per FTE faculty ratio at 14.8 is lower than its peers which are at 16-17.
UH West O‘ahu’s ratio has been rising, and FTE students per FTE instructional faculty is between its two peer groups.

**FTE Students per FTE Instructional Faculty**

**UH West O‘ahu Comparison Group**

- Peer Group, 19.7
- UH West O‘ahu, 17.6
- IPEDS Group, 16.1
UHCCs FTE students per FTE instructional faculty ratio has been rising, but is still below their peers.
FTE students per E/M has been flat at UH Hilo and UH Mānoa but increasing at UHCC and UH West O‘ahu.
UH Mānoa has more students per E/M than its peers

FTE Students per Executive / Managerial
UH Mānoa Comparison Group

Academic Year


0 100 200 300 400

UH Mānoa, 186
IPEDS Group, 124
Peer Group, 97
UH Hilo has more FTE students per E/M than its peers

FTE Students per Executive / Managerial
UH Hilo Comparison Group

Academic Year


UH Hilo, 165
Peer Group, 114
IPEDS Group, 87
UH West O‘ahu FTE students per E/M has increased in recent years and in 2012 was higher than its peers.
The UHCCs have more FTE students per E/M than their peers.
FTE students per professional staff declined in most UH Units

FTE Students per Professional Staff – UH Units

- UHCC Average, 32.3
- UH Hilo, 19.5
- UH West O‘ahu, 18.6
- UH Mānoa, 9.0
UH Mānoa, with 9 FTE students per professional staff, is comparable to its peers
UH Hilo, with about 19 FTE students per professional staff, is comparable to its peers.
UH West O‘ahu, with 18.6 FTE students per professional staff, is comparable to its peers.
The UHCCs have fewer FTE students per professional staff than their peers.
Faculty at the UHCCs generate 558 student semester hours per year (students X credit hours carried) while UH Mānoa faculty generate 332.
UH Mānoa faculty generate fewer student semester hours per FTE instructional faculty than their peers.
UH Hilo faculty generate fewer student semester hours per FTE instructional faculty than their peers.
UH West O‘ahu faculty generate fewer student semester hours per FTE instructional faculty than their peers but comparable to the IPEDS group.
UHCC faculty generate fewer student semester hours per FTE instructional faculty than their peers.
Proposed Efficiency Measures

Measure 7. Share of credits earned by distance learning

Measure 8. Cost of utilities
- Kilowatt hours per square feet of usable space

Measure 9. Ratio of total tuition and fees over median state personal income

Measure 9. Classroom utilization
- Measure to be developed using new AIM system
Share of distance learning credits out of total credits taken by classified undergraduates that Fall

<table>
<thead>
<tr>
<th>University</th>
<th>Percent Distance Learning Credits</th>
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<tbody>
<tr>
<td>UH West Oʻahu</td>
<td>36.2%</td>
</tr>
<tr>
<td>UH Hilo</td>
<td>7.4%</td>
</tr>
<tr>
<td>UH Mānoa</td>
<td>6.2%</td>
</tr>
<tr>
<td>UHCC Average</td>
<td>15.8%</td>
</tr>
</tbody>
</table>

Academic Year

2007: 2.7%
2008: 2.9%
2009: 10.5%
2010: 25.9%
2011: 36.2%
2012: 25.9%
2013: 10.5%
Cost of Utilities:

**kWh Consumption per Square Foot**

![Graph showing kWh Consumption per Square Foot per Year]

- **UH West O’ahu, 12.9**
- **UH Hilo, 11.4**
- **UHCC Average, 10.9**
Total tuition and fees as percentage of state median household income

Source: U.S. Census Bureau; Hawaii State Department of Business, Economic Development & Tourism, UH Executive Policy E6.201.
Concluding Remarks

• This is a work in progress
• Comments are welcome
• E-mail: iboshi@hawaii.edu