In 2012, The Partnership for Undergraduate Life Science Education (PULSE) was formed to catalyze departmental-level transformation in response to the recommendations in Vision and Change. To this end, the Northwest (NW) PULSE Fellows have established a network of higher education institutions equipped with knowledge of a systems-thinking approach to change and dynamic governance to develop and implement departmental transformation plans.

Who comprises the NW Network?

The NW PULSE Network includes over 35% (53/148) of higher education institutions in the region (AK, ID, MT, OR, WA, WY).

How was the NW Network formed?

To date, four cohorts of ~15 institutional teams have attended a 3-day workshop, developed transformation plans, and implemented their plans with sustained mentorship from NW PULSE Fellows (Fig 3).

How does the network support change?

The Education Development Center (EDC) conducted an analysis of department action plans, NWBio posters (Fig 5), and pre/post participant surveys. Reported here are results from the first three NW PULSE cohorts (2013-2015).

Observation #1. Institutional teams leverage change through a systems-thinking approach.

Planning & V&C Implementation

- Sought or received funding
- Engaged partners
- Disseminated info/raised

Creating new student support

- Developed undergraduate research
- V&C student assessment
- Created new learning objectives
- Created active learning
- Conducted student assessment

Changing faculty teaching

- Created faculty PLCs
- Sought input from faculty
- Implemented V&C competencies
- Designed new curriculum
- Assessed current offerings
- Mapped courses onto V&C core

Fig 5. Institutional teams use a poster template to report their outcomes at the NWBio conference each Spring. These are saved electronically and thematically analyzed by EDC.

Observation #2. Most institutions achieved their transformation goals.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Number of Schools (n=84)</th>
<th>Percentage of All Schools Cod (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Met all of their goals</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Met most/all of their goals</td>
<td>13</td>
<td>30%</td>
</tr>
<tr>
<td>Met some of their goals</td>
<td>18</td>
<td>41%</td>
</tr>
<tr>
<td>Unsure</td>
<td>12</td>
<td>27%</td>
</tr>
</tbody>
</table>

Table 1: 56% of schools providing sufficient information met most/all of their goals. 27% of schools provided insufficient information to determine whether or not they met their goals.

Observation #3. Barriers to change varied by institution type, but all struggling with raising awareness and garnering buy-in to their action plans.

Conclusions

- Workshops that utilize PULSE V&C rubrics and introduce systems-thinking help life science departments adopt V&C recommendations.
- Actions taken by departments reflect systems-level thinking.
- All institutional types benefit from workshop participation, with some differences in outcomes observed by type.
- Anticipating common personal and structural barriers can help departments plan to overcome these issues.

Fig 6. Comparison of reported barriers between more and less successful institutions.

Other NW PULSE Fellows

- Gita Bangera, Brevard College
- Bill Davis, Washington State University
- Alyce DeMarais, University of Puget Sound
- Joann Otto, Western Washington University
- Gary Reinisch, Lewis & Clark College
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