Northwest PULSE Community of Practice

Vision and Change in Undergraduate Biology Education: A Call to Action (hereafter V&C), published by AAAS in 2011, recommended transforming undergraduate lifesciences curricula to focus on core concepts, core competencies, and student-centered pedagogies.

The Partnership for Undergraduate Life Science Education (PULSE) was formed in 2012 with 40 change agents (“Fellows”) from diverse institutions of higher education to help promote these V&C recommendations nationwide and to catalyze transformation at the departmental level.

Pacific NW PULSE Fellows conduct 3-day workshops each October for teams of three or more faculty members, including a department chair, from institutions in AK, ID, MT, OR, WA, and WY.

Workshop participants evaluate their departments using PULSE rubrics, identify curricular needs to address, and devise an action plan. They learn about “systems thinking,” regarding their department as a embedded in system of interacting parties—individual, institutional, societal—and best ways to bring about change in their system by leveraging their efforts.

Fig. 1. An illustration of Systems Thinking Levers to foster change in higher education (Right). Figure courtesy of Dr. Ann Austin (Michigan State), shown below at the 2016 NW PULSE Meeting in May, representatives from the institutions convene at the Northwest Biology Instructors Organization (NW BIO) annual meeting to present in a poster session their progress in meeting the goals they established at the October workshop.

Data Collection

- Participant Pre-surveys (September) and Post-surveys (May)
- Institutional applications to participate in the NW PULSE Community of Practice (CoP)
- Action Plans (October) and Formal Project Reports (May)

Despite Barriers, Most Institutions Achieved Successful Transformation

Fig. 7. Various Barriers Impeded Goal Attainment

Qualitative Assessment of NW PULSE CoP

- The Education Development Center used Dedoose (dedoose.com) to analyze the content of posters and surveys of participants from the first three NW PULSE cohorts in 2013-2015 (see Table 1).

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Northwest PULSE Community Members

- Faculty from all types of colleges and universities have participated in NW PULSE Workshops, representing over 35% (53/148) of non-profit institutions in the region.

Fig. 2. The geographical locations of the 53 schools from NW PULSE Cohorts 1-4. The colors of the markers indicate Cohort number (yellow=1; red=2; green=3; purple=4), or the location of NW PULSE Fellows’ institutions (blue).

Table 1. The institutional types of the 44 schools in NW PULSE Cohorts 1-3.