

2017

# Building Nursing Pathways Bellingham Technical College

## Interim Evaluation Report Year 3

U.S. Department of Labor Employment and Training Administration  
Trade Adjustment Assistance Community College Career Training  
Grant # TC-25142-13-60-A-53

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EVERGREEN EVALUATION SERVICES

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## **Executive Summary**

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Building Nursing Pathways is funded by a U.S. Department of Labor Trade Adjustment Assistance Community College Career Training (TAACCCT) Round 3 grant. This program at Bellingham Technical College, designed to produce program graduates who are well prepared to enter the dynamic and high-demand field of nursing, is in its third year of a four-year TAACCCT grant. Building on our prior evaluation reports in Year 1 and Year 2, in which we found a high level of implementation fidelity and significant progress made in terms of the program's outcomes, we find in Year 3:

- All program components were fully implemented, program deliverables were submitted on schedule, and sustained capacity is extremely likely given that departmental budgets propose to maintain key Building Nursing Pathways program components after TAACCCT grant funding ends;
- Significant involvement with workforce partners continues to add value to the nursing program;
- Important outcomes and indicators, such as the number of participants completing a BNP program of study and the average post-program wage increase earned by program completers, demonstrate continued program effectiveness and return-on-investment.

This Year 3 report represents the final interim annual report produced during our four-year evaluation of Building Nursing Pathways. This report mirrors the interim Year 1 and Year 2 report in terms of format and content. For the final evaluation report (delivered in September, 2017, at the end of Year 4) we intend to review the findings described in previous years' reports plus evaluate Building Nursing Pathways' outcomes using statewide education data provided through a developing collaborative agreement between Building Nursing Pathways, Bellingham Technical College, and the State of Washington's Education Research and Data Center.

## **Background<sup>1</sup>**

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Building Nursing Pathways is a program funded by a U.S. Department of Labor Trade Adjustment Assistance Community College Career Training (TAACCCT) Round 3 grant at Bellingham Technical College (BTC) in Bellingham, Washington. Building Nursing Pathways was proposed to provide nursing training to trade adjustment-assisted (TAA) workers, veterans, and others seeking nursing careers in the medically underserved communities of northwest Washington State. The RNs who earn nursing credentials through Building Nursing Pathways will enter a high-demand labor market; Washington State expects a shortage of 12,000-20,000 RNs by 2031 (Skillman et al., 2011).

The Building Nursing Pathways program design addresses the Department of Labor (DOL) TAACCCT Solicitation for Grant Application (SGA) option #4 to develop career pathways for adult workers. The centerpiece of Building Nursing Pathways is the development of industry-driven stackable and latticed nursing credentials. Appendix B contains a logic model which visualizes the relationship between program inputs, Building Nursing Pathways components (program outputs), and Building Nursing Pathway's outcomes. In this section of the evaluation report we briefly discuss each of the program components of Building Nursing Pathways (column "B" of the logic model):

1. Create Associate Degree in Nursing (ADN), a credential to prepare students for either RN licensure or entry into one of the state's Bachelor of Science in Nursing (BSN) programs.
2. Create LPN-to-ADN degree option, allowing an incumbent licensed practical nurse (LPN) to obtain an ADN and RN licensure in one year instead of the conventional two-year time frame.
3. Create Medication Assistant (MA) Certificate, a credential potentially completed during the ADN program certifying an MA to distribute medication under direct supervision in medical settings.

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<sup>1</sup> This background information, which also appeared in the Year 2 report, is provided to contextualize our Year 3 findings for the unacquainted reader.

4. Create concept-based curriculum, which moves from a content-saturated to a content-based curriculum to improve learning experiences.
5. Develop clinical redesign, including simulation and simulation scenario, plus industry-standard equipment, to engage students in problem solving, care coordination, and decision making skills.
6. Create dual-admission, dual-enrollment pathways with RN to BSN programs in the state to facilitate access to further education for students who aspire to complete a BSN.
7. Create online and technology-enhanced learning environment, through faculty technology-enhanced instructional strategies, podcast development, and online resources.
8. Create a simulation laboratory, leveraging high-fidelity mannequins, microphones, and video playback to increase learning and student competency with healthcare informatics.
9. Create a Project Advisory Committee and Partner Communications Plan with industry support to facilitate continuous employer engagement during project development and implementation.
10. Initiate faculty professional development that will allow faculty to fully leverage Building Nursing Pathways components such as the concept-based curriculum and the simulation lab.
11. Develop coaching, mentoring, advising, and career services for students through technology and additional FTEs which will primarily support Building Nursing Pathways students throughout their program experience.
12. Create a veterans services model with dedicated FTE support tailored to the unique needs of veterans in both educational and workforce contexts.
13. Create a Prior Learning Assessment (PLA) model that will translate past experiences and acquired skills into credit counting toward ADN program prerequisites.
14. Develop and institutionalize continuous assessment capacity leveraging student-tracking software to make data retrieval and analysis more transparent and accessible.

## **Evaluation Goals and Design for Year 3**

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The goals for the Year 3 Building Nursing Pathways evaluation report build on our analysis of the program's implementation and outcomes in Year 1 and Year 2. These goals are motivated by three factors:

- 1) The overarching evaluation expectations outlined in the TAACCCT SGA and by the Urban Institute, Abt Associates, and other third-party evaluation partners;
- 2) A expectation to connect findings from the evaluation reporting carried out for the Year 1 and Year 2 report to this present report; and
- 3) An effort to lay the groundwork for the goals that are in development as part of the final evaluation report.

## **Goals for Implementation/Process and Outcomes Analyses in Year 3**

Our goals for implementation and outcome analyses in Year 3 continue to reflect the Building Nursing Pathways logic model that encapsulates program inputs, outputs, and outcomes/indicators. Our implementation and process analysis has focuses primarily on program *outputs* whereas the outcomes analysis concentrates on both grant-required *outcomes* and additional academic/workforce *indicators* we use to gauge effectiveness (see Columns B and C, respectively, of the logic model in Appendix B). Accordingly, our evaluation goals in this report seek to:

- 1) Gauge the extent to which Building Nursing Pathways faculty and staff have sustained the implementation of Building Nursing Pathways program components in Year 3 and laid the groundwork for sustaining key program components after TAACCCT grant funding ends.
- 2) Evaluate for Year 3 the required U.S. Department of Labor outcomes and progress indicators against Year 1 and Year 2 outcomes, and determine how outcome evaluation efforts may be most effectively analyzed and presented in the final evaluation report.

## **Research Questions to Guide Implementation/Process Analysis in Year 3**

The Year 3 research questions to evaluate implementation and processes draw directly from the U.S. Department of Labor's priorities in assessing the extent to which TAACCCT grantees carry out the priorities of the TAACCCT grant program. Specifically:

1. What progress was made in Year 3 with grant funds that further improved and expanded BTC's nursing program?
2. What contributions in Year 3 did program stakeholders and partners make across program activities?

Provided the central role that workforce partners play in the success of TAACCCT grant programs in particular and in community college-workforce partnerships more broadly (Yarnall, Tennant, & Stites, 2016), Implementation Research Question #2 above, pertaining to the extent to which stakeholders and partners contribute to program activities, is again given special emphasis in this Year 3 report.

Additionally, given the U.S. Department of Labor's focus on the use of TAACCCT funds for capacity building at the nation's community colleges, in Year 3 we pose the question:

3. To what extent have faculty and staff demonstrated a commitment to sustain key Building Nursing Pathways program components after TAACCCCT grant funding ends?

## **Research Questions to Guide Outcomes Evaluation in Year 3**

To build continuity across multiple reporting years, Research Questions #1 and #2 for Year 3 mirror those posed in the Year 1 and Year 2 reports:

1. To what extent are students successfully completing the stackable and latticed credentials developed with TAACCCT funds at Bellingham Technical College?



2. To what extent are students achieving favorable outcomes, either in forward-transfer or in the labor market?

Since Year 3 represents the final year of active enrollment for Building Nursing Pathways TAACCCT-funded students, enrollment figures for Building Nursing Pathways will remain largely unchanged in the final evaluation report. Completion rates and labor market outcomes, however, are expected to increase as additional participants complete the program and enter the workforce, and as more up-to-date data become available.

## **Implementation/Process Analysis**

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In this section of the Year 3 report we analyze the extent to which Building Nursing Pathways successfully sustained the implementation of its program components, all of which had been implemented at the end of Year 2. After reviewing the data collection strategy for this analysis we discuss our findings within the framework of the research questions guiding this analysis. We summarize our implementation analysis at the end of this section.

### **Data Collection**

We undertook a modified data collection strategy in Year 3 given that all of the Building Nursing Pathways program components had been implemented in Year 1 and Year 2. In Year 3 we relied primarily on documentary evidence (reports, meeting minutes, etc.) to collect information about the extent to which program elements were sustained in Year 3. Complementing this documentary evidence were regularly scheduled conversations and interviews with the Building Nursing Pathways grant director to collect information about program progress and processes.

### **Findings**

Bellingham Technical College's nursing department has continued to leverage TAACCCT grant funds for programmatic improvements and expansion in Year 3. Much of this improvement has focused on institutionalizing the new concept-based curriculum developed and implemented in Year 1 and Year 2. This concept-based curriculum, a multiyear clinical and theory curricular redesign that engaged nursing faculty and workforce partners, in Year 3 was fully implemented such that the curriculum is now sustainable beyond the duration of TAACCCT grant funding.

Professional development for faculty has continued in Year 3. All full-time faculty and contract faculty continue to engage in professional development activities in accordance with their individual professional development plans. The Associate Dean, new to her position in

Year 3, has also worked with faculty to develop strategies that will guide professional development activities for faculty in subsequent post-TAACCCCT years.

The evaluation requirements for Building Nursing Pathways, centered around quarterly and annual outcomes reporting, have led to substantial capacity building in Year 3. This capacity to evaluate nursing-related outcomes has developed within Bellingham Technical College and through partnerships developed with public agencies in Washington State. Program staff for Building Nursing Pathways have continued to work closely with Bellingham Technical College's Office of Institutional Research and Planning and the college's registrar to develop institutionalized systems for outcomes reporting. Data sharing agreements have also been reached between Bellingham Technical College's nursing program and two state agencies (the State Board for Community and Technical Colleges, SBCTC, and the Education Research and Data Center, ERDC) able to provide data on workforce outcomes and postsecondary educational attainment. These trailblazing efforts of Bellingham Technical College's nursing program are a potential model for other departments at the college that seek to incorporate data-driven decision making in the management of their academic programs.

Turning to the role of stakeholders and workforce partners, Building Nursing Pathways continues to meaningfully engage stakeholders and workforce partners in Year 3. The central contribution of workforce partners remains their role in placing Building Nursing Pathways nursing students in preceptorships throughout the region. More than ten facilities, comprising hospital settings and a wide range of care facilities, partner with Bellingham Technical College's nursing program to provide on-site, applied learning opportunities for students throughout their two years of training.

Advisory committee meetings, held quarterly on Bellingham Technical College's campus, remain a central way that Building Nursing Pathways engages stakeholders and workforce partners. These advisory committee meetings are attended by representatives from each of the clinical preceptor sites, allowing these workforce partners to engage Building Nursing Pathways faculty and staff. Representatives from other key stakeholder organizations, such as the regional public university (Western Washington University) offering a direct transfer option to a Bachelor of Science in Nursing (BSN) for Building Nursing Pathways students and the local workforce investment board (Northwest Workforce Council) also attend these advisory committee meetings.

The final factor we consider relevant to evaluating Year 3 processes is how faculty and staff are preparing to sustain key Building Nursing Pathways program components after TAACCCT grant funding ends. With leadership from the nursing program's Assistant Dean, the fiscal year 2017-2018 operating budget will maintain Building Nursing Pathways programmatic funding at current enrollment levels. This current enrollment level, at 120 students, reflects a substantial increase in enrollment capacity made possible by TAACCCT funding. Yet beyond the financial support needed to support instruction, institutional funds will also potentially support the student-related staff positions created as part of Building Nursing Pathways. Concerted efforts to secure funding are underway, for example, to maintain support for the Nursing Student Navigator, a staff position identified in past evaluation reports as being a critical component to student success.

## **Implementation/Process Summary**

Building Nursing Pathways in Year 3 institutionalized much of the programmatic progress made in Year 1 and Year 2. The concept-based curriculum and stability of core academic programs, ongoing professional development for faculty, and constant engagement of stakeholders and workforce partners are the result of high implementation fidelity in Year 1 and Year 2. These outcomes also serve as strong evidence of a meaningful commitment to, and likely continuation of, program success extending beyond the period of TAACCCT grant funding.

## Outcomes Analysis

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Our outcomes analysis focuses on the nine outcomes required for evaluation by the TAACCCT solicitation for grant applications (SGA). In this section we review the data sources which inform our evaluation of outcomes. We then review Year 3 outcomes for Building Nursing Pathways. We compare these Year 3 outcomes against projected outcomes for Year 3 (made in BTC's grant application) and Year 2 outcomes. (Appendix C contains a summary of projected outcomes across all years of the grant.)

The nine specific outcomes outlined in the TAACCCT SGA must be evaluated across all years of grant funding (see Appendix F of the SGA, p. 76). We customize these mandated outcomes for Building Nursing Pathways as follows:

1. Total unique participants served, which we measure as the cumulative total number of individuals enrolled in the Building Nursing Pathways program in a given year;
2. Total number of participants completing a Building Nursing Pathways program of study, which we measure as the number of unique participants having earned all of the credit hours needed for one of the BNP credentials;
3. Total number of participants still retained in Building Nursing Pathways at the end of the grant period, which we measure as the number of unique participants enrolled who did not complete and are still enrolled in any of the credential programs at the end of the grant period;
4. Total number of participants completing credit hours, which we measure as the total number of students that have completed any number of credit hours at the time of our data collection;
5. Total number of participants earning credentials, which we measure as the total number of participants completing any one of the stacked or latticed credentials created through the TAACCCT grant;

6. Total number of participants enrolled in further education after completing a BNP credential, which we measure as the number of students who successfully transfer to Western Washington University's baccalaureate nursing program, other BSN programs in Washington State, or are enrolled in any other coursework at a postsecondary institution;
7. Total number of non-incumbent participants employed after completing any Building Nursing Pathways credential, which we measure as the total number of non-incumbent workers who begin employment in the quarter after the quarter of exit from the program;
8. Total number of non-incumbent participants retained in employment after completing any Building Nursing Pathways credential, which we measure as the total number of students who began employment in the quarter after the quarter of exit from the program and retained employment in the second and third quarters;
9. Total number of students employed at the time of Building Nursing Pathways enrollment who received a wage increase post-enrollment, which we measure as the total number of students who are incumbent workers who enrolled in any Building Nursing Pathways credential program and then who received a wage increase after enrollment.

In addition to these nine outcomes, in prior years (e.g. Year 1 and Year 2) we have also analyzed three programmatic indicators and survey-based data in this section of the report. For parsimony's sake, this Year 3 report focuses only on the SGA-mandated outcomes and the programmatic indicators.

## **Data**

The primary data for our outcomes reporting are drawn from Bellingham Technical College itself. The Building Nursing Pathways program has made significant progress in developing its data tracking and assessment capabilities throughout the TAACCCT-funded

period. The program's delivery of data has allowed for the efficient evaluation of program participants (and their related outcomes) in Year 3.

In this Year 3 report we also use data provided by Bellingham Technical College via Washington's State Board for Community and Technical Colleges (SBCTC). Data from SBCTC are critical to evaluating SGA-mandated workforce related outcomes on employment and wages. These SBCTC data replace the workforce data provided by the Northwest Workforce Council (a local workforce investment board) for analysis in previous years' evaluation reports.

## **Findings: Primary Outcomes**

Year 3 spans October 1, 2015, to September 30, 2016. In addition to reviewing the Year 3 outcomes here we provide contextual information when appropriate to explain where and why observed Year 3 outcomes diverge from *projected Year 3 outcomes*, and why observed Year 3 outcomes may diverge from trends suggested by *Year 1 and Year 2 outcomes*.

The stacked and latticed credentials that comprise Building Nursing Pathways degrees (Table 1) are core program outcomes. From Year 2 to Year 3, substantial growth in programmatic outcomes is reflected in Outcome #2 (total participants completing a BNP program of study) and Outcome #5 (total number of participants earning BNP credentials), both of which significantly exceed the projected outcomes for Year 3 and reflect a 21.6% increase over Year 2. Outcome #1 (total unique participants served) and Outcome #4 (total number of participants completing credit hours), on the other hand, are below their projected levels in Year 3 and represent a decrease from Year 2 levels.

The levels of Outcome #1 and Outcome #4 in Year 3, however, do not represent a problematic decrease in program enrollments; rather, this figure reflects that Bellingham Technical College's nursing program has stepped down the enrollment of new students in the TAACCCT-funded Building Nursing Pathways program as grant funding nears its end. In other words, the nursing department aspires for a sustained enrollment of 120 students, producing (given the department's high retention rate) around 20 graduates/quarter or 60 graduates/year. This level of completers — 60 graduates/year — aligns with the long-term aspirations of Bellingham Technical College's nursing program as reflected in its Year 3 projections for Outcomes #1, #2, #4, and #5.

**Table 1: Outcomes Measuring Building Nursing Pathways Degree Production, Year 3**

| Outcome  | Year 1<br>Projection | Year 1<br>Actual | Year 2<br>Projection | Year 2<br>Actual | Year 3<br>Projected | Year 3<br>Actual |
|--|----------------------|------------------|----------------------|------------------|---------------------|------------------|
| 1. Total unique participants served  | 90                   | 147              | 85                   | 83               | 60                  | 38               |
| 2. Total participants completing a BNP program of study                      | 25                   | 18               | 72                   | 65               | 60                  | 73               |
| 3. Total number of participants still retained in any BNP credential program | 55                   | 107              | 55                   | 116              | 45                  | 79               |
| 4. Total number of participants completing credit hours                      | 90                   | 111              | 85                   | 83               | 60                  | 38               |
| 5. Total number of participants earning BNP credentials                      | 25                   | 18               | 72                   | 65               | 60                  | 73               |

The total number of students earning a Building Nursing Pathways credential and continuing on to further postsecondary education in Year 3 increased over Year 2 but fell short of the Year 3 projection (Table 2). This variation should not obscure the overall trend from Year 1 to Year 3, however, that reflects a substantial increase in those pursuing additional postsecondary education upon completion of their Building Nursing Pathways credential. As noted in the Year 2 report, a number of key program enhancements (instructors' support and active guidance, the development of the direct transfer agreements, etc.) have effectively shifted the culture of Building Nursing Pathways toward BSN attainment as a realistic and attainable goal for students.

**Table 2: Outcome Measuring Continued Postsecondary Education, Year 3**

| Outcome   | Year 1<br>Projection | Year 1<br>Actual | Year 2<br>Projection | Year 2<br>Actual | Year 3<br>Projection | Year 3<br>Actual |
|---|----------------------|------------------|----------------------|------------------|----------------------|------------------|
| 6. Total number of participants enrolled in further education after completing a BNP credential | 5                    | 1                | 10                   | 12               | 15                   | 13               |

Outcomes #7, #8, and #9 require context to interpret appropriately (Table 3). First, the total number of non-incumbent participants employed after completing any Building Nursing



Pathways credential (Outcome #7) is only 26% (n=9) of the Year 3 projection. As with Year 2, this figure is the result of a student population that primarily comprises *incumbent* participants. Hence, Outcome #7 reflects a characteristic of the student population, not a shortcoming of Building Nursing Pathways’ ability to place non-incumbents in the workforce. Outcome #7 should also be compared year-to-year, in which case the program demonstrates a relatively consistent year-to-year average of eleven students.

**Table 3: Outcomes Measuring Employment-Related Dynamics, Year 3**

| Outcome  | Year 1<br>Projection | Year 1<br>Actual | Year 2<br>Projection | Year 2<br>Actual | Year 3<br>Projection | Year 3<br>Actual |
|--|----------------------|------------------|----------------------|------------------|----------------------|------------------|
| 7. Total number of non-incumbent participants employed after completing any BNP credential program               | 10                   | 10               | 45                   | 14               | 35                   | 9                |
| 8. Total number of non-incumbent participants retained in employment after completing any BNP credential program | 8                    | NA               | 41                   | NA               | 32                   | NA               |
| 9. Total number of students employed at the time of BNP enrollment who received wage increase post-enrollment    | 15                   | 9                | 40                   | 41               | 20                   | 39               |

The nature of Outcome #8, the total number of non-incumbent participants retained in employment, carries a specific definition of retention which makes the outcome unfeasible to gauge in this interim evaluation report.<sup>2</sup> Outcome #9, alternatively, reflects a clear, important labor market outcome: the capacity to earn a higher wage upon completion of a postsecondary credential. This figure for Year 3 substantially exceeds the Year 3 projection and reflects the broad gains that Building Nursing Pathways program participants encounter in the workforce upon completion of an associate’s degree.

<sup>2</sup> Outcome #8 requires a measurement that captures the number of non-incumbent students who began employment in the quarter after the quarter of exit from Building Nursing Pathways *and* retained employment in the second and third quarters. Ultimately, Outcome #8 will be most relevant in the final Year 4 report that captures data from all three years of TAACCCT grant funding at Bellingham Technical College.

## Findings: Secondary Outcomes and Indicators

As we have noted in prior reports, we evaluate two additional outcomes and one workforce indicator each year over the course of the TAACCCT grant to gauge the effect of Building Nursing Pathways on program participants beyond the nine SGA-mandated primary outcomes. Outcome #10 captures the primary certification required for nurses to work in the field. Attainment of registered nurse (RN) licensure is a critical measure of program effectiveness since an associate degree in nursing is insufficient for labor market entry. Since Building Nursing Pathways program completers must also pass the National Council Licensure Exam for Registered Nurses (NCLEX-RN), a certification exam administered by the National Council of State Boards of Nursing, we use this outcome as a proxy for program effectiveness (Table 4).

**Table 4: Secondary Outcomes, Year 2**

| Secondary Outcome   | Baseline | Year 1 | Year 2 | Year 3 |
|---|----------|--------|--------|--------|
| 10. Total number of BNP participants who receive RN licensure after associate's degree completion | 22       | 42     | 55     | 71     |
| 11. Total number of participants who complete training in the simulation laboratory               | 0        | 147    | 83     | 38     |

Outcome #10 reflects a steady increasing trend in the count of program participants passing the NCLEX each year.<sup>3</sup> As important, the passage rate for nursing graduates who pass the NCLEX-RN in Year 3 rose to 97%, representing an all-time high during the three-year span of TAACCCT funding. This increased passage rate is directly attributable to the increased educational resources and student supports that Building Nursing Pathways has focused on NCLEX-RN preparation.

Outcome #11 gauges the extent to which the simulation lab and its resources are leveraged to the fullest extent possible by 100% of program participants. This outcome, created from data provided by the instructional technician who works closely with simulation lab materials, will take on additional importance and reflect the capacity-building potential of the

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<sup>3</sup> Since a program participant may not pass the NCLEX on the first attempt but pass the exam on a subsequent test date, this is another outcome which we will update in the final TAACCCT grant evaluation report.

TAACCCT grant in subsequent years when students from other programs at Bellingham Technical College use the lab for health-related training.

The final measure of program progress is a workforce indicator measuring the change in pre-program and post-program wages for Building Nursing Pathways participants. This statistic requires a pre-program wage so we include in this calculation only those Building Nursing Pathway program completers who had earned a wage *prior* to enrollment and *after* enrollment. This difference is then averaged across all those program completers that fit the pre-wage and post-wage criteria and tested for statistical significance at 95% confidence (Table 5).

**Table 5: Workforce Indicator, Year 2**

| Workforce Indicator  | Year 1<br>Average<br>Change | Year 2<br>Average<br>Change | Year 3<br>Average<br>Change <sup>4</sup> |
|--|-----------------------------|-----------------------------|--|
| 12. Participants' changes in wages, pre-program and post-program | + \$8.16                    | + \$9.24                    | + \$6.78                                 |

This workforce indicator continues to provide some of the strongest evidence of the positive impact that Building Nursing Pathways has on program participants; on average a Building Nursing Pathways program participant earns \$6.78 *more* an hour after program completion. Assuming a 40-hour work week, this figure translates to average increased pre-tax earnings of \$14,102 *in the first year upon completion of the credential*.

### Summary of Year 3 Outcomes

Outcomes for Year 3 demonstrate a program that is sustaining program achievements across three years of TAACCCT grant funding:

- For credential-related outcomes (Outcome #2 and Outcome #5), Building Nursing Pathways exceeded its Year 3 projection by 21.6 % and generated a year-over-year increase of 12.3%.

<sup>4</sup> As with past years, this difference is significant at 95%.

- The number of program completers in Year 3 continuing their postsecondary education continues to demonstrate Building Nursing Pathways' strong commitment to preparing students for successful forward transfer.
- Indicators used as labor market proxies — Outcome #9, Secondary Outcome #10, and Workforce Indicator #12 — demonstrate a consequential return-on-investment for students who enroll in and complete a Building Nursing Pathways credential.

## **Final Evaluation Report: Strategies and Tactics**

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We end our evaluative summary of Year 3 with a look to the strategies and tactics underway for the final evaluation report. We will deliver this final evaluation report by the end of the TAACCCT grant period, which concludes September 30, 2017.

The most notable advance in preparing for the final evaluation report is a partnership in Year 4 that Building Nursing Pathways staff has forged with data management and students records staff at Bellingham Technical College, representatives from Washington State's Education Research and Data Center (ERDC), and the external evaluation team. This partnership, in which ERDC will provide extensive student-level data to Bellingham Technical College and Building Nursing Pathways staff, will greatly enhanced evaluation capabilities for the final evaluation report. As important, this data sharing partnership also creates the groundwork for the nursing department's ongoing monitoring of programmatic outcomes once TAACCCT grant funding ends.

Data provided by ERDC (outlined in Appendix D) will ostensibly allow the final evaluation report to capture a degree of program "impact" in alignment with the evaluation expectations described in the TAACCCT Solicitation for Grant Applications (p. 59-61, § C.1.a, which pertains specifically to measuring program impact through random assignment). This measurement of program impact is plausible because students were admitted to Building Nursing Pathways through a lottery in Year 1 to Year 3 of the program. The program lottery thus serves as a randomizing mechanism that, in turn, can be exploited empirically as a quasi-experimental tool for causal inference (Myers & Dynarski, 2003). This identification of a program impact is valuable because the descriptive analyses of outcomes and indicators in the present and prior evaluation reports are constrained by the lack of a counterfactual.

## Summary

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We conclude the Year 3 report by summarizing its findings in the framework of the report's two overarching goals:

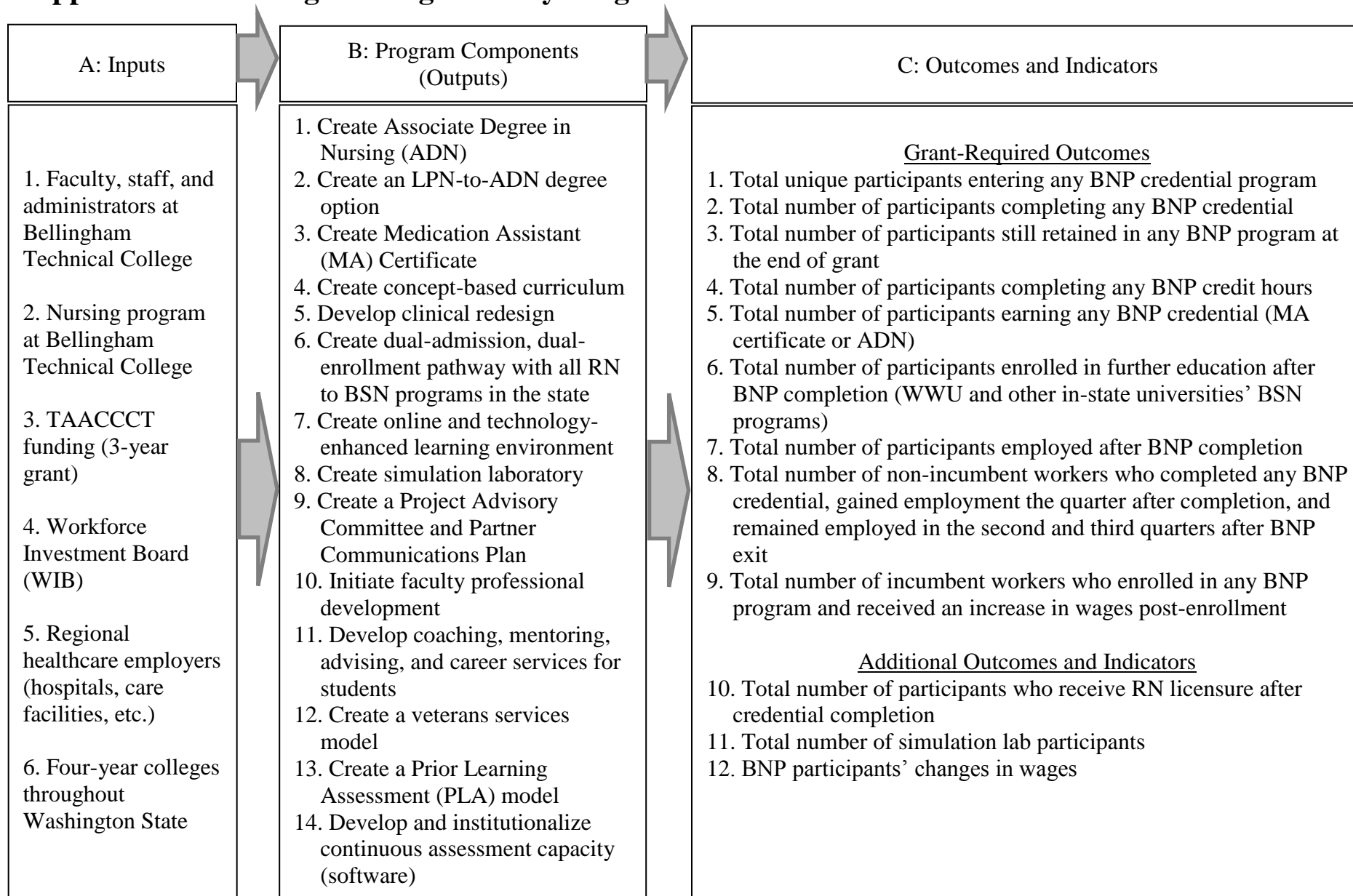
- We find that Building Nursing Pathways has leveraged grant funds effectively in Year 3 to maintain and expand program components. Program faculty and staff have made a concerted, successful effort to sustain key program components after TAACCCT funding ends.
- Key outcomes and indicators provide compelling evidence that Building Nursing Pathways continues to operate with a high level of credential production, yielding program completers that demonstrate positive labor market returns.

The Year 3 report continues to echo the evaluation findings reported in Year 1 and Year 2: The faculty and staff of the Building Nursing Pathways program have designed, implemented, and sustained an effective, evidence-driven nursing program that demonstrates meaningful return-on-investment for its participants.

## **Appendix A: Guide to abbreviations and acronyms used in past and present evaluation reports**

|         |   |
|---------|---|
| ADN     | Associate Degree in Nursing   |
| BNP     | Building Nursing Pathways   |
| BSN     | Bachelor of Science in Nursing  |
| BTC     | Bellingham Technical College  |
| DOL     | U.S. Department of Labor  |
| ERDC    | Education Research and Data Center  |
| LPN     | Licensed Practical Nurse  |
| MA      | Medication Assistant Certificate  |
| NWC     | Northwest Workforce Council   |
| OIRP    | Office of Institutional Research and Planning (at BTC)                      |
| PLA     | Prior Learning Assessment   |
| SBCTC   | State Board of Community and Technical Colleges                             |
| SGA     | TAACCCT Solicitation for Grant Application                                  |
| TAACCCT | Trade Adjustment Assistance Community College Career Training Grant Program |
| WWU     | Western Washington University   |

## Appendix B: Building Nursing Pathways Logic Model





## Appendix C: Projected Building Nursing Pathways Outcome Targets

| Outcome  | Target for all participants |        |        |         | Total |
|--|-----------------------------|--------|--------|---------|-------|
|  | Year 1                      | Year 2 | Year 3 | Year 4* |       |
| 1. Total unique participants served in any BNP credential program  | 90                          | 85     | 60     |         | 235   |
| 2. Total number of participants completing any BNP credential  | 25                          | 72     | 60     |         | 157   |
| 3. Total number of participants still retained in any BNP program at the end of grant  | 55                          | 55     | 45     |         | 155   |
| 4. Total number of participants completing any BNP credit hours  | 90                          | 85     | 60     |         | 235   |
| 5. Total number of participants earning any BNP credential (MA certificate or ADN)   | 25                          | 72     | 60     |         | 157   |
| 6. Total number of participants enrolled in further education after BNP completion (WWU and other universities' BSN programs)  | 5                           | 10     | 15     |         | 30    |
| 7. Total number of participants employed after BNP completion  | 10                          | 45     | 35     | 25      | 115   |
| 8. Total number of non-incumbent workers who completed any BNP credential, gained employment the quarter after completion, and remained employed in the second and third quarters after BNP exit | 8                           | 41     | 32     | 20      | 101   |
| 9. Total number of incumbent workers who enrolled in any BNP program and received an increase in wages post-enrollment   | 15                          | 40     | 20     | 15      | 90    |

\*If applicable; only some outcomes are measured in Year 4

## Appendix D: Request to Education Research and Data Center (ERDC)

The cohort for this analysis is all students who were in a lottery for admission to BTC's nursing program. In the student-level data we are providing to ERDC we note the quarter the student was in the lottery. These lottery quarters span Autumn term, 2013 to Autumn term, 2016. Our goal is to ultimately tell three stories with these data:

1. What happens to students who *win* BTC's lottery to attend the nursing program and *choose to attend* BTC?
2. What happens to students who *win* BTC's lottery to attend the nursing program *but choose not to attend* BTC?
3. What happens to students who *lose* BTC's lottery to attend the nursing program?

Acknowledging that not all data points described below will be available for all students given the quarter of their lottery (i.e. for students in the lottery Autumn, 2015 we will not yet have two years' worth of data), for a given cohort of students who went into BTC's nursing program lottery we seek to analyze:

1. At what postsecondary institution(s) did the student enroll, and in what academic program?
  - We expect to see enrollment at BTC for lottery winners but additionally: where did lottery winners not choosing BTC enroll? Where did lottery losers enroll?
  - We also hope to pick up here students who continue on to BSN programs at public 4-year institutions in the state after completing a nursing associate degree program at BTC.
2. What postsecondary degree did the student earn, if any, and in what program?
  - Again, we would expect lottery winners enrolling at BTC to attain an associate of nursing degree, but we're equally interested in degree attainment for lottery winners not choosing BTC and lottery losers.
3. What was the student's employment status?
  - We expect favorable employment outcomes for lottery winners who become associate degree earners, but again our interest lies equally in students who did not enroll at BTC either because they chose another nursing program or lost the lottery.
4. To what extent did winning a spot in BTC's nursing program increase the student's wages?
  - Following our logic, we would expect to see lottery winners have a post-enrollment wage that is significantly higher than their pre-enrollment wage (especially considering the labor market demand for registered nurses). Comparing this wage difference for lottery winners to the wages of lottery losers, we would begin to get a picture of the *causal effect* of BTC's nursing program on wages.

## **Requested Demographic, Educational, and Employment-Related Variables**

### Demographics/Geographic:

To understand the demographics and the geographic distribution of the student population that 1) comprises the lottery pool and 2) gains access to BTC's nursing program, we seek the following demographic and geographic variables:

- Student gender
- Student race
- Student's Pell Grant eligibility
- Veteran status
- Home zip code:
  - a. Two years prior to lottery quarter
  - b. One year prior to lottery quarter
  - c. At time of lottery quarter
  - d. One year after lottery quarter
  - e. Two years after lottery quarter

### Education

We're interested in students' academic background plus where they enrolled, their retention in programs, and degree completion. To assess these factors we request the following variables:

- Student holds high school diploma from WA high school - if so, which one?
- Number of credits accumulated at time of lottery quarter
- College grade point average at time of lottery quarter
- All previously-attended community colleges (and public universities) in WA two years prior to lottery quarter
- Enrollment at a WA community college or public university:
  - a. One quarter after lottery quarter - if so, what is declared degree program?
  - b. Two quarters after lottery quarter - if so, what is declared degree program?
  - c. Three quarters after lottery quarter - if so, what is declared degree program?
  - d. One year after lottery quarter - if so, what is declared degree program?
  - e. Two years after lottery quarter - if so, what is declared degree program?
- Enrollment at a two-year or four-year college/university outside of WA:
  - a. One quarter after lottery quarter
  - b. One year after lottery quarter
  - c. Two years after lottery quarter
- Degree attainment at a WA community college or public university:
  - a. One year after lottery quarter - if so, what degree?
  - b. Two year after lottery quarter - if so what degree?
- Degree attainment at a community college or university outside of WA two year after lottery quarter - if so what degree? (Not sure NSC has degree type)

## Employment

We seek to explore relationships among access to BTC's nursing program (via winning the lottery to enroll) and students' employment and wages. Thus we seek the following employment-related variables:

- Employment status:
  - a. One year prior to lottery quarter
  - b. At time of lottery quarter
  - c. One year after lottery quarter
  - d. Two years after lottery quarter
- Annual earnings (or hourly wage):
  - a. One year prior to lottery quarter
  - b. At time of lottery quarter
  - c. One year after lottery quarter
  - d. Two years after lottery quarter

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