

**US Department of Labor High Growth Grant Follow-up: National Center for the Biotechnology  
Workforce- Life Sciences and Biotech Informatics**

*Russ H. Read<sup>1</sup>, Alan Beard<sup>2</sup>, Sonia Wallman<sup>3</sup>, Janet Paulson<sup>4</sup>, Patricia Dombrowski<sup>5</sup>, Chuck Crabtree<sup>6</sup>, Ric Matthews<sup>7</sup>, Mike Fino<sup>8</sup>,  
Mica Welsh<sup>9</sup>, Mona Cofer<sup>10</sup>*

## **Introduction**

Three years following a grant from the Department of Labor, this follow-up assessment was made to determine the residual outcome for the five participating partners. These five partners are Community Colleges, from strategic locations across the nation, which specialize in biotechnology/life sciences workforce training as required by the industry focus in their respective regions. Through national interaction and cooperation these five colleges helped develop a hub for networking, workforce training and best practices, which is The National Center for the Biotechnology Workforce (NCBW). This Center is headquartered at Forsyth Technical Community College in Winston-Salem, North Carolina.

## **Background**

In response to the President's High-Growth Job Training Initiative announced on June 28, 2004, a \$5 million grant was awarded to Forsyth Technical Community College in partnership with four other community colleges around the nation to develop the National Center for the Biotechnology Workforce (NCBW) across a three year period (2004-2007). These colleges were designated Centers of Expertise (CoE). Each CoE was selected for its leadership in developing Biotechnology/Life Sciences workforce training in a specific area. Coordinating the five into a synchronized network enhanced capabilities of each one in providing biotech training and faculty development across all regions and industry concentrations.

### **Centers of Expertise and Region Functional Expertise**

Forsyth Technical Community College	Winston-Salem, North Carolina	Southeast Biotechnology	Research and Development
New Hampshire Community Technical College (now Great Bay)	Portsmouth, New Hampshire	Northeast	Biomanufacturing
Indian Hills Community College	Ottumwa, Iowa	Midwest	Agricultural Bioprocessing and Renewable Fuels
Bellevue Community College	Bellevue, Washington	Northwest	Life Science Informatics
MiraCosta Community College	San Diego, California	Southwest	Bioprocessing

---

<sup>1</sup> National Center for the Biotechnology Workforce (NCBW)

<sup>2</sup> Forsyth Technical Community College

<sup>3</sup> New Hampshire Community Technical College

<sup>4</sup> Bellevue Community College

<sup>5</sup> Indian Hills Community College

<sup>6</sup> Indian Hills Community College

<sup>7</sup> MiraCosta Community College

<sup>8</sup> MiraCosta Community College

<sup>9</sup> NCBW

<sup>10</sup> NCBW

Because of its focus on easy replication, the NCBW created a critical mass of synthesized biotech training resources to benefit all community and technical colleges. One primary aspiration was its role as a model of partnership with community, employer and other national and regional biotech training stakeholders. The NCBW observed a return on investment of these grant funds at the rate of \$2 to \$1 in the final report in 2008. The NCBW work resulted in excellent examples of cooperative education for immediate workforce training through partnerships, such as pilot plants, skill standards and other actual, hands-on workplace experiences. The program produced multiple publications on its lessons learned. A variety of presentations, including US DOL/ETA webinars, twenty national workforce presentations and the development of a unique “human capital” newsletter called the *Biotech Resource Line* have all been made available online at [www.biotechworkforce.org](http://www.biotechworkforce.org). The program has been recognized for its efforts.

### **Methods**

A brief survey consisting of eleven questions was generated using Survey Monkey®, an online surveying tool. During the spring of 2011, three years after the DOL Grand period ended, the five original Centers of Expertise were contacted and asked to respond to a follow-up survey. Three of the Centers completed the survey online and two completed hard copies of the survey. Answers from all five Centers were recorded and compiled into a table. The questions and responses are recorded below.

### **Questions and Responses**

1. Has the DOL Grant involvement had any residual impact to your BT program that you can quantify?

4 out of 5 replied yes; 1 responded no

2. Have you won any national or regional grants since the NCBW grant that can be related?

5 out of 5 responded yes (100%)

3. Have you been able to add any specialized curriculum to your BT department or program since the grant ended?

5 out of 5 said yes (100%)

4. Have you been able to win funding for new equipment to update the BT programs?

3 of 5 replied yes; 2 said no

5. Do you continue to align your program with industry partners?

5 of 5 said yes (100%)

6. Do you continue to align your program with academic partners?

100% responded yes

7. Have your BT programs been included in new articulation agreements with higher education programs?

2 of 5 said yes; 3 said no

8. Has the number of enrolled students in your BT program Increased / decreased / stayed the same?

3 program enrollments increased; 2 decreased

9. Has industry interest in your BT program Increased / decreased / stayed the same?

100% reported an increase

10. Would your BT program benefit from additional collaboration at the National level or with the original Centers?

100% responded yes

11. Can you quantify /qualify the value the DOL grant experience brought to your center post grant October 2008 to present?

A) New Hampshire Community Technical College students continue to receive apprenticeships (at Lonza) & jobs at numerous companies principally in NH & MA. The decrease in students reflects a lack of interest in certificates from the College's perspective. Though retired, the original Director continues to act as the link between student graduates & jobs (or careers) in biotech/biomanufacturing.

B) Without the DOL grant money and partnerships, the Center would not have brought this program to the current level. The program's success also brought in a new partner who wished to duplicate the program within the energy sector, particularly nuclear, initiating a strong working relationship based on the model created with BT. Student enrollments are up short of 2.5%. New classes in biofuels, data analysis, and technical writing have been added and a biofuels certificate program is being developed.

C) IMPORTANT NOTE: Bellevue College efforts post grant have been necessarily focused on healthcare informatics - well within the umbrella of "Life Science Informatics", but not "Biotech". Answers to this survey do not refer to a BT program. Answers are accurate for the health informatics program. This Center has leveraged lessons learned and contacts made during the grant to enhance program building and grant making efforts. Experience gained as a sub-recipient was valuable in constructing the 10-state, 24-college grant region the College now directs.

D) No Response

E) Continued tracking of BT graduates; Increased collaboration both in-state and nationally; Increased national focus; Ideas for broader curriculum.

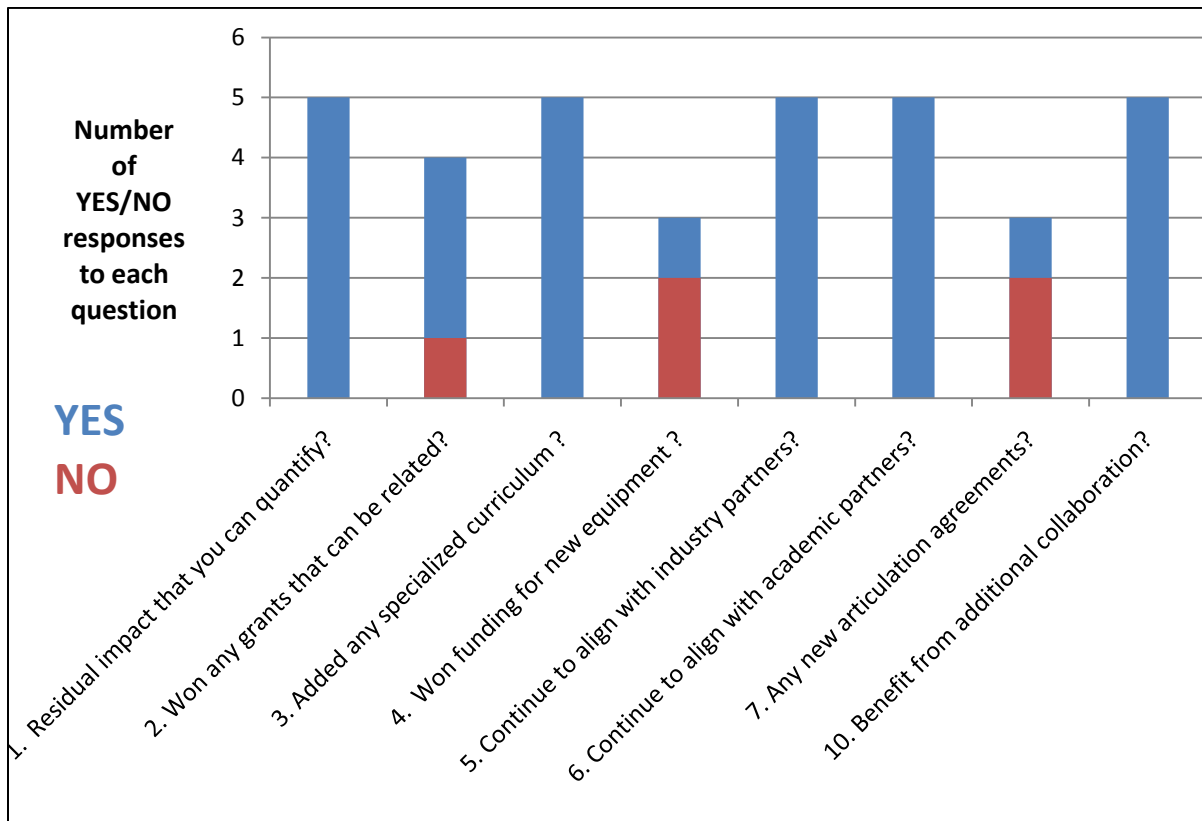
## **Discussion**

The survey posed eight yes/no questions and two questions with response options of increased, decreased, or stayed the same. These questions don't lend themselves to interpretation without assuming information that is not provided. However trends can be detected. Noticeable trends include unanimous agreement in the areas of:

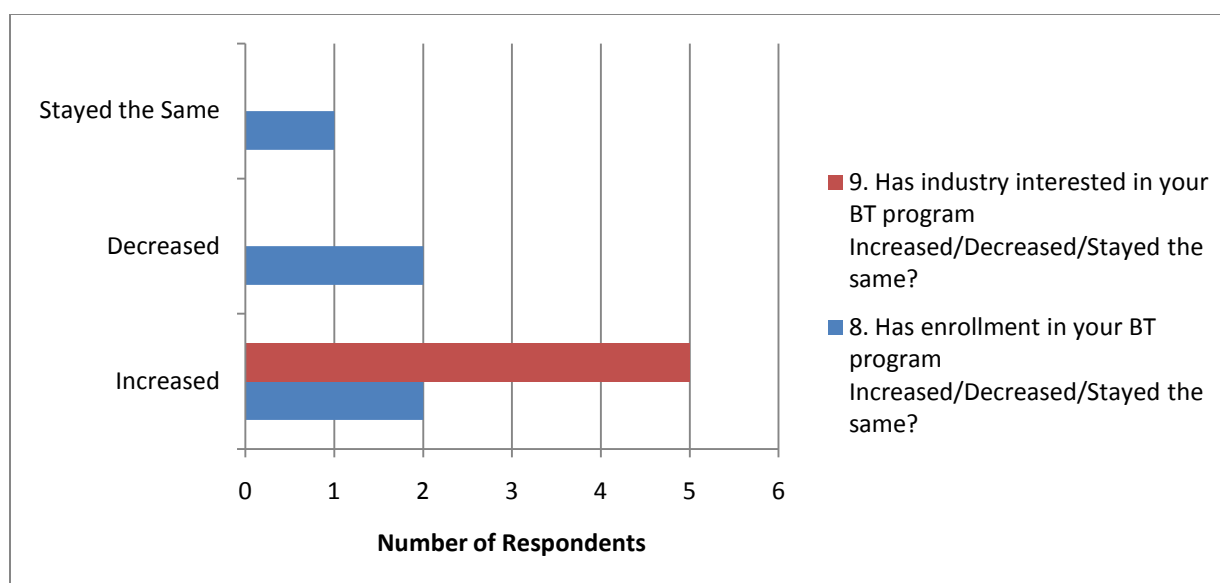
- Residual impact from the DOL Grant that could be quantified
- Addition of specialized curriculum to their BT program post Grant
- Continuation of alignments with both industry and academic partners
- An increase in the level of interest that industry has shown to the respective BT programs

- Assertion that future collaboration with the original Centers and/or with others at the national level would be beneficial to their programs

Question number 2 referred to additional grants at the national or regional level won by the respective institution since the DOL Grant and 4 of 5 said that they had won additional grants. Question number 4 inquired whether or not new funding had been won for equipment to upgrade their BT program. Three of the five indicated that no new funding had been obtained. Question 7 asked about new articulation agreements with institutions of higher education and 3 out of the 5 responded that yes they had installed new agreements since the DOL Grant. One of the Centers has put in place additional articulation agreements with unilateral partners not higher level educational institutions.



Question 8 asked if the number of enrolled students had increased, decreased or remained the same. Two reported an increase; two reported a decrease; while one reported the number had remained the same. Explanation was provided for one of those who reported a decrease in response to question eleven and reveals that the area that demonstrated a decrease was in certificates, likely, due to a lack of interest from the Community College itself. Question 9 referred to whether or not their programs gained additional industry interest and the response was unanimous in that they had observed an increase.



## Conclusion

These Centers have emerged and strengthened as leaders in workforce training and evolved to meet the needs of their region. Each has recognized positive consequences brought about by the US Department of Labor High Growth Grant. The national interaction has provoked greater industry interest in the respective programs at each of the Centers of Expertise and strengthened partnerships with other educators. In the case of Bellevue and MiraCosta Community Colleges, grant collaboration has prompted them to adapt their focus by adding specialized curriculum and altering their programs, thereby making them more effective and responsive in supporting industry particular to their regions. The Centers are in agreement that additional collaboration would continue to enhance their programs. The NCBW has been sustained by a unique agreement between the US Department of Labor, the North Carolina Community College System’s BioNetwork and Forsyth Technical Community College. It continues to work on best practices in biotechnology workforce training. It is an active partner with the US Department of Labor and the National Science Foundation’s Advanced Technological Education Program (Bio-Link and NBC2). Other examples include BIO, NC BIO, NC BioNetwork, and the National Association of Manufacturers through its affiliate, the Manufacturer’s Institute.