Preview of Award 1501999 - Annual Project Report

Cover

Federal Agency and Organization Element to Which Report is Submitted:	4900
Federal Grant or Other Identifying Number Assigned by Agency:	1501999
Project Title:	PathTech LIFE: Constructing a National Survey of Engineering Technology Students through Regional and Statewide Testing
PD/PI Name:	William T Tyson, Principal Investigator Edward C Fletcher, Co-Principal Investigator Danielly Orozco, Co-Principal Investigator
Recipient Organization:	University of South Florida
Project/Grant Period:	09/15/2015 - 02/28/2019
Reporting Period:	09/01/2017 - 08/31/2018
Submitting Official (if other than PD\PI):	William T Tyson Principal Investigator
Submission Date:	08/30/2018
Signature of Submitting Official (signature shall be submitted in accordance with agency specific instructions)	William T Tyson

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Accomplishments

* What are the major goals of the project?

The overall goal of this project is to develop a national survey of individuals completing coursework, certification, and AS/AAS degrees in advanced technologies at community colleges. The purpose of this survey is to determine how student pathways, career goals, and school-work-life balance influence program recruitment and retention. Because a large majority of participants are expected to be adults with numerous and complex life challenges (i.e., family, personal, school, and work), an investigation into their lived experiences is necessary to inform institutional efforts to support their success.

The major goals in Year 3 were to complete data collection for the PathTech LIFE national survey and apply for supplemental funding to extend data collection into Spring 2018 and extend the project to allow for analysis.

* What was accomplished under these goals (you must provide information for at least one of the 4 categories below)?

Major Activities:
- Completed Round 2 of the PathTech LIFE national survey in Fall 2017.
- Completed Round 3 of the PathTech LIFE national survey in Spring 2018.
- Secured supplemental funding to extend the project to Feb 2019. As a result, the Final Report for the project will be submitted at that time.

Specific Objectives: A total of 3216 students in 96 community colleges completed the survey.

Significant Results: Selected survey results from all three rounds of the survey can be found in the Findings Report under Products.

Key outcomes or Other achievements: We successfully implemented a recruitment strategy developed in Year 2 to (1) communicate directly with colleges and (2) offer incentives to colleges in additional incentives to students. As a result, we recruited 1,334 students from 60 colleges in Fall 2017 and 1,443 students from 65 colleges in Spring 2018.

* What opportunities for training and professional development has the project provided?

The project has not provided training and professional development opportunities to this point.

* How have the results been disseminated to communities of interest?

In Year 2, we have disseminated results of this study to community college faculty and administrators, local industry, and education researchers at the following conferences and meetings.

September 2017 - Fall 2017 FLATE Florida Forum on Engineering Technology (ET Forum)

- Florida community college from advanced manufacturing and engineering technology program faculty and administrators

October 2017 - ATE Principal Investigators Conference

- Birds of a Feather session titled "PathTech LIFE: Informing Targeted Research and Best Practices"
- Showcase session for ATE project personnel

March 2018 - Annual Meeting of the Southern Sociological Society

- Sociology of education researchers

April 2018 - American Educational Research Association

- US and international education researchers

July 2018 - 2018 High Impact Technology Exchange Conference (Hi-TEC)

- US community college advanced technology program faculty and administrators

In addition, we distributed the following reports to audiences of interest.

January 2018 - 2017 Findings Report

- All colleges who participated in the Round 2 survey

January 2018 - College Findings Reports

- Individual reports for colleges with a 70% response rate or higher

* What do you plan to do during the next reporting period to accomplish the goals?

We plan to continue to analyze PathTech LIFE survey data and produce a full report in October to present at the ATE PI Meeting and at the Florida ET Forum in November. The report will be available on the PathTech website.

Supporting Files

Filename	Description	Uploaded By	Uploaded On
PathTech LIFE Year 3 Report Tables.pdf	PathTech LIFE tables on Learning, Interests, Family, and Employment among CC tech students.	William Tyson	08/30/2018
PathTech LIFE Survey Example Response.pdf	Example survey response from the Round 3 survey (Spring 2018).	William Tyson	08/30/2018
A Process Perspective in Conducting Targeted Research (August 2018).pdf	Evaluation report and executive summary of lessons learned in conducting a national survey of two-year college programs.	William Tyson	08/30/2018

Products

Books

Book Chapters

Inventions

Journals or Juried Conference Papers

Edward C. Fletcher Will Tyson (2018). Examining Enrollment Decisions and Life Challenges of Adult Learners in Advanced Technologies Programs. *Journal of Vocational Education and Training.* . Status = UNDER_REVIEW; Acknowledgment of Federal Support = Yes ; Peer Reviewed = Yes

Licenses

Other Conference Presentations / Papers

Edward C. Fletcher Will Tyson (2018). *An Exploratory Analysis of Characteristics and Participation Factors for Two-Year College Students in Advanced Technology*. Annual Meeting of the American Education Research Association. New York, NY. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

Will Tyson Lakshmi Jayaram (2017). *PathTech LIFE Update*. Florida Forum on Engineering Technology. College of Central Florida. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

Will Tyson Lakshmi Jayaram (2018). *PathTech LIFE: Findings from a National Survey of Advanced Technology Students*. Hi-TEC. Miami, FL. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

Will Tyson Edward C. Fletcher Lakshmi Jayaram (2017). *PathTech LIFE: Informing Targeted Research and Best Practices*. ATE Principal Investigators' Conference. Washington, DC. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

Will Tyson Lakshmi Jayaram (2018). *Personal and Professional Motivations of Enrollment in Community College Advanced Technology Program*. Annual Meeting of the Southern Sociological Society. New Orleans, LA. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

Other Products

Other Publications

Patents

Technologies or Techniques

Thesis/Dissertations

Websites
Supporting Files

Filename	Description	Uploaded By	Uploaded On
JVET Examining Enrollment Decisions and Life Challenges	This paper examines factors associated with student	William Tyson	08/30/2018

of Adult Learners in Advanced Technologies Programs.pdf	motivations for enrollment into community college technician education programs.		
Hi-TEC 2018 Presentation.pdf	Slides from our presentation at the 2018 Hi-TEC Conference in Miami.	William Tyson	08/30/2018

Participants/Organizations

What individuals have worked on the project?

Name	Most Senior Project Role	Nearest Person Month Worked
Tyson, William	PD/PI	5
Fletcher, Edward	Co PD/PI	2
Orozco, Danielly	Co PD/PI	1
Jayaram, Lakshmi	Other Professional	12
Smith, Chrystal	Other Professional	3
Reid, Benjamin	Consultant	2

Full details of individuals who have worked on the project:

William T Tyson
Email: wtyson@usf.edu
Most Senior Project Role: PD/PI
Nearest Person Month Worked: 5

Contribution to the Project: Dr. Tyson leads all research effort in this project including leading the USF based research team. Dr. Tyson administers the survey and leads revision efforts and data analysis. He also is the primary contact with Qualtrics and the ECC.

Funding Support: N/A

International Collaboration: No
International Travel: No

Edward C Fletcher
Email: ecfletcher@usf.edu
Most Senior Project Role: Co PD/PI
Nearest Person Month Worked: 2

Contribution to the Project: Dr. Fletcher assists Dr. Tyson in overseeing all project activity. Dr. Fletcher wrote the initial draft of the PathTech LIFE Pilot Survey and led efforts to revise pilot surveys. Dr. Fletcher co-authored conference papers from the project.

Funding Support: Dr. Fletcher is supported by the PathTech LIFE award.

International Collaboration: No
International Travel: No

Danielly Orozco
Email: dorozco2@hccfl.edu
Most Senior Project Role: Co PD/PI
Nearest Person Month Worked: 1

Contribution to the Project: Ms. Orozco represents FLATE in their partnership with USF. She helps coordinate communication between the USF based research team and partner ATE Centers. She is also part of the expert panel made up of ATE Center leadership.

Funding Support: Ms. Orozco is supported by the PathTech LIFE award and the FLATE ATE Center award.

International Collaboration: No
International Travel: No

Lakshmi Jayaram
Email: ljayaram@usf.edu
Most Senior Project Role: Other Professional
Nearest Person Month Worked: 12

Contribution to the Project: Dr. Jayaram joined the project in August 2017 as a Research Associate. She assists Drs. Tyson and Fletcher with publication and dissemination efforts.

Funding Support: Dr. Jayaram is supported by the PathTech LIFE award.

International Collaboration: No
International Travel: No

Chrystal Smith

Email: chrystal.smith@uconn.edu
Most Senior Project Role: Other Professional
Nearest Person Month Worked: 3

Contribution to the Project: Dr. Smith consults the project on survey construction and qualtiative analysis.

Funding Support: Dr. Smith is supported by the PathTech LIFE award.

International Collaboration: No
International Travel: No

Benjamin Reid
Email: ben@impactallies.com
Most Senior Project Role: Consultant
Nearest Person Month Worked: 2

Contribution to the Project: Mr. Reid serves as External Communications Coordinator and External Evaluator. He maintains contact with colleges to aid recruiting efforts. He facilitates communication between Dr. Tyson and college partners. Mr. Reid also conducts external evaluation on the project.

Funding Support: Mr. Reid is supported by the PathTech LIFE award.

International Collaboration: No
International Travel: No

What other organizations have been involved as partners?

Name	Type of Partner Organization	Location
CARCAM	Academic Institution	Gadsden, AL
CREATE	Academic Institution	Santa Clarita, CA
ICF	Industrial or Commercial Firms	Washington, DC
MatEdU	Academic Institution	Lynnwood, WA
NEATEC	Academic Institution	Troy, NY
RCNET	Academic Institution	Fort Pierce, FL

Full details of organizations that have been involved as partners:

CARCAM

Organization Type: Academic Institution
Organization Location: Gadsden, AL

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: Consortium for Alabama Regional Center for Automotive Manufacturing (CARCAM) is an ATE Center. In consultation with our partners at FLATE, we decided the most efficient way to conduct a national survey of students enrolled in technician education programs at community colleges throughout the US is to partner with ATE Centers. Each center trains students to be production based tech in one of four technological areas: (1) Micro and Nano Technologies, (2) Engineering Technologies, (3) Advanced Manufacturing Technologies, and (4) Energy and Environmental Technologies. Each ATE Center agreed to complete the following Year 1 tasks as part of their PathTech collaboration: (1) Two representatives from each center reviewed the pilot online survey and made recommendations over three stages using the Delphi method; (2) The center distributed the pilot online survey to students enrolled at the host institution or other institutions if necessary. The center received a $5000 stipend for their cooperation.

CREATE

Organization Type: Academic Institution
Organization Location: Santa Clarita, CA

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: California Regional Consortium for Engineering Advances in Technological Education (CREATE) is an ATE Center. In consultation with our partners at FLATE, we decided the most efficient way to conduct a national survey of students enrolled in technician education programs at community colleges throughout the US is to partner with ATE Centers. Each center trains students to be production based tech in one of four technological areas: (1) Micro and Nano Technologies, (2) Engineering Technologies, (3) Advanced Manufacturing Technologies, and (4) Energy and Environmental Technologies. Each ATE Center agreed to complete the following Year 1 tasks as part of their PathTech collaboration: (1) Two representatives from each center reviewed the pilot online survey and made recommendations over three stages using the Delphi method; (2) The center distributed the pilot online survey to students enrolled at the host institution or other institutions if necessary. The

center received a $5000 stipend for their cooperation.

ICF

Organization Type: Industrial or Commercial Firms
Organization Location: Washington, DC

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: ICF is the external evaluator on this project. Two members of the ICF team reviewed the pilot survey along with personnel from partner ATE Centers. ICF assisted in pilot data analysis and made recommendations for revisions.

MatEdU

Organization Type: Academic Institution
Organization Location: Lynnwood, WA

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: National Resource Center for Materials Technology Education (MatEdU) is an ATE Center. In consultation with our partners at FLATE, we decided the most efficient way to conduct a national survey of students enrolled in technician education programs at community colleges throughout the US is to partner with ATE Centers. Each center trains students to be production based tech in one of four technological areas: (1) Micro and Nano Technologies, (2) Engineering Technologies, (3) Advanced Manufacturing Technologies, and (4) Energy and Environmental Technologies. Each ATE Center agreed to complete the following Year 1 tasks as part of their PathTech collaboration: (1) Two representatives from each center reviewed the pilot online survey and made recommendations over three stages using the Delphi method; (2) The center distributed the pilot online survey to students enrolled at the host institution or other institutions if necessary. The center received a $5000 stipend for their cooperation.

NEATEC

Organization Type: Academic Institution
Organization Location: Troy, NY

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: Northeast Advanced Technological Education Center

(NEATEC) is an ATE Center. In consultation with our partners at FLATE, we decided the most efficient way to conduct a national survey of students enrolled in technician education programs at community colleges throughout the US is to partner with ATE Centers. Each center trains students to be production based tech in one of four technological areas: (1) Micro and Nano Technologies, (2) Engineering Technologies, (3) Advanced Manufacturing Technologies, and (4) Energy and Environmental Technologies. Each ATE Center agreed to complete the following Year 1 tasks as part of their PathTech collaboration: (1) Two representatives from each center reviewed the pilot online survey and made recommendations over three stages using the Delphi method; (2) The center distributed the pilot online survey to students enrolled at the host institution or other institutions if necessary. The center received a $5000 stipend for their cooperation.

RCNET

Organization Type: Academic Institution
Organization Location: Fort Pierce, FL

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: Regional Center for Nuclear Education and Training (RCNET) is an ATE Center. In consultation with our partners at FLATE, we decided the most efficient way to conduct a national survey of students enrolled in technician education programs at community colleges throughout the US is to partner with ATE Centers. Each center trains students to be production based tech in one of four technological areas: (1) Micro and Nano Technologies, (2) Engineering Technologies, (3) Advanced Manufacturing Technologies, and (4) Energy and Environmental Technologies. Each ATE Center agreed to complete the following Year 1 tasks as part of their PathTech collaboration: (1) Two representatives from each center reviewed the pilot online survey and made recommendations over three stages using the Delphi method; (2) The center distributed the pilot online survey to students enrolled at the host institution or other institutions if necessary. The center received a $5000 stipend for their cooperation.

RCNGM

Organization Type: Academic Institution
Organization Location: Farmington, CT

Partner's Contribution to the Project:
Collaborative Research

More Detail on Partner and Contribution: Regional Center for Next Generation Manufacturing (RCNGM) is an ATE Center. In consultation with our partners at FLATE, we decided the most efficient way to conduct a national survey of students enrolled in technician education programs at community colleges throughout the US is to partner with ATE Centers. Each center trains students to be production based tech in one of four technological areas: (1) Micro and Nano Technologies,

(2) Engineering Technologies, (3) Advanced Manufacturing Technologies, and (4) Energy and Environmental Technologies. Each ATE Center agreed to complete the following Year 1 tasks as part of their PathTech collaboration: (1) Two representatives from each center reviewed the pilot online survey and made recommendations over three stages using the Delphi method; (2) The center distributed the pilot online survey to students enrolled at the host institution or other institutions if necessary. The center received a $5000 stipend for their cooperation.

What other collaborators or contacts have been involved?
Nothing to report

Impacts

What is the impact on the development of the principal discipline(s) of the project?

PathTech LIFE is a multi-disciplinary project, and as such, impacts individual disciplinary fields as well as makes interdisciplinary contributions. First, our work provides unprecedented information about the technician education student body, including data about their demographic background, employment, family, prior education, as well as their motivations for enrollment and future goals. Second, our work also represents an unprecedented and growing partnership between community college ATE programs and four-year institutions.

What is the impact on other disciplines?

This study impacts engineering education by sharing information between college programs with representatives from other college programs beyond anecdotal evidence. This study impacts education by providing analyses of reasons why students enroll in two-year technician education programs. This study also impacts sociology through the application of life course perspective to higher education as part of an extended transition into and through adulthood, particularly among underserved groups such as underrepresented minorities, single parents, students who work full-time jobs, and LGBT students in STEM.

What is the impact on the development of human resources?

We presented our findings at two Engineering Technology Forums and at Hi-TEC to community college technician education educators and administrators. We also provided national reports and findings reports specific to colleges. The presentations include knowledge key personnel can use to improve the retention and persistence of their students. The presentations also inform representatives from participating industry representatives about the work/life balance challenges that their employees face and possible strategies to improve retention.

What is the impact on physical resources that form infrastructure?
Nothing to report.

What is the impact on institutional resources that form infrastructure?
Nothing to report.

What is the impact on information resources that form infrastructure?
Nothing to report.

What is the impact on technology transfer?
Nothing to report.

What is the impact on society beyond science and technology?

Colleges can use the results of this study to improve opportunities for people from various backgrounds and create pathways for these students into STEM fields.

Changes/Problems

Changes in approach and reason for change

The only change this year was the application for supplemental funding which resulted in a 6 month project extension. This change allowed the project to conduct a third round of data collection and pay for services of the External Communications Coordinator to aid in recruitment and Qualtrics to manage the data. The change also insured that we could pay all respondents and colleges. The change also allowed us to hire Dr. Jayaram as a full-time research associate.

Actual or Anticipated problems or delays and actions or plans to resolve them
Nothing to report.

Changes that have a significant impact on expenditures

The supplemental funding described above was the only significant change.

Significant changes in use or care of human subjects
Nothing to report.

Significant changes in use or care of vertebrate animals
Nothing to report.

Significant changes in use or care of biohazards
Nothing to report.

Special Requirements

Responses to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.
Nothing to report.