

# VII.A.

## Connecticut State Board of Education Hartford

**To Be Proposed:**  
January 11, 2023

**Resolved,** That the State Board of Education, pursuant to Section 10-65a (b) of the Connecticut General Statutes, receives the Report on Agricultural Science and Technology Education Graduates Five Years after Graduation.

Approved by a vote of \_\_\_\_\_, this eleventh day of January, Two Thousand Twenty-three.

Signed: \_\_\_\_\_  
Charlene M. Russell-Tucker, Secretary  
State Board of Education

**Connecticut State Board of Education  
Hartford**

**To:** State Board of Education

**From:** Charlene M. Russell-Tucker, Commissioner of Education

**Date:** January 11, 2023

**Subject:** Report on Agricultural Science and Technology Education Graduates Five Years after Graduation

**Executive Summary**

**Introduction**

Pursuant to Section 10-65a (b) of the Connecticut General Statutes (C.G.S), each local and regional board of education which operates an agricultural science and technology education (ASTE) center (including aquaculture and marine-related employment programs), shall conduct an annual study to ascertain the educational and vocational activities in which graduates of such center are engaged in five years after graduation and shall submit the study to the Connecticut State Board of Education (Board).

The Board's focus on equity, high academic achievement, and college and career readiness is reflected in the regional ASTE programs and is evidenced by:

1. All students regardless of gender, race, ethnicity, family wealth, zip code, or disability status participate in a challenging interdisciplinary agricultural curriculum supported by state-of-the-art facilities and equipment.
2. All students are provided a curriculum that is rigorous and performance-based and is aligned to the Connecticut Core Standards in English language arts and mathematics, which prepares the individual to be successful in postsecondary endeavors.
3. All students receive leadership training, learn personal and social responsibility, and acquire 21<sup>st</sup> century skills through participation in the National FFA Organization (formerly known as the Future Farmers of America).
4. All students are required to engage in career activities through a Supervised Agriculture Experience (SAE) project. Students apply the knowledge and skills gained through the curriculum by exploring agricultural careers, creating agricultural business, and/or developing new knowledge and skills through agricultural career placements.

**History/Background**

For the past sixty-seven (67) years the State of Connecticut has offered students in Grades 9 through 12 the opportunity to immerse themselves in agriculture studies. From its humble beginning as a pilot school in Middletown, Connecticut, the agricultural science and technology education (ASTE) centers has expanded to twenty programs. Connecticut's unique model of regionalized ASTE programs allows students from across the state to have access to rigorous, high quality agriculture education that is aligned to State Board of Education approved frameworks.

The ASTE centers, as indicated by the Summary Report on the Five-Year Follow-up Study of Agricultural Science and Technology Education Graduates, have prepared students for

employment, entrepreneurship, and higher education in all areas of agricultural concentration, Animal Systems; Aquaculture Systems; Marine and Technology Systems; Food Products and Processing Systems; Natural Resources and Environmental Systems; Plant Systems; Power, Structural and Technical Systems; and Biotechnology Science.

This systems approach encompasses agricultural production and services, business management, career and leadership skills, scientific inquiry, use and conservation of land and water resources, career and environmental safety and security, global economics, and the sociological and political aspects of the agricultural industry.

## **Findings**

The following summarizes several significant findings and conclusions of the Summary Report on the Five-Year Follow-up Study of Agricultural Science and Technology Education Graduates:

- Ninety-one percent that enrolled in an ASTE center, graduated from that center;
- Eighty-four percent of ASTE students that started a degree program, earned the degree;
- Forty-six percent have a degree from a four-year college or university;
- Seventy-nine percent of respondents who started a four-year college degree program earned a degree;
- Twenty-four percent are still in college or other advanced study or training programs;
- Nine percent own a business;
- Ninety-four percent are employed; and
- Twenty-five percent are employed full-time in an agriculture-related field.

## **Conclusions**

- Graduates are attending and completing college or university, along with other types of postsecondary training and other education opportunities;
- The program prepared students for the rigors of postsecondary education;
- The program prepared qualified employees for career success in the Agriculture, Food, and Natural Resources Cluster area; and
- Graduates are successful in gaining postsecondary education and/or employment opportunities after high school graduation.

## **Recommendation**

The Connecticut State Department of Education (CSDE) presents the Summary Report on the Five-Year Follow-up Study of Agricultural Science and Technology Education Graduates, Class of 2016, for review and recommends that the Board continues their support of the ASTE centers.

Prepared by: Harold Mackin  
Education Consultant

Approved by: Irene Parisi  
Chief Academic Officer

# **Connecticut State Department of Education**

## **Summary Report on the Five-Year Follow-up Study of Agricultural Science and Technology Education Graduates**

**Class of 2016**

Submitted Pursuant to Section 10-65a (b) of the Connecticut General Statutes

## Overview

Starting with the first pilot school in Middletown, the Regional Agricultural Science and Technology Education (ASTE) program has grown to twenty programs. By regionalizing the ASTE centers, all of Connecticut's students have access to rigorous and relevant education that prepares them for college and careers in agricultural fields.

Connecticut's unique approach to providing access to all students (no other state has a system that allows students from urban, suburban, and rural communities to study agriculture in the same program) enables learners to explore and build knowledge and skills in one or more of agriculture pathways. The Agriculture, Foods, and Natural Resources Career Cluster allows students to pursue pathways in Animal Systems, Aquaculture Systems, Marine and Technology Systems, Food Products and Processing Systems, Natural Resources and Environmental Systems, Plant Systems, Power, Structural and Technical Systems, and Biotechnology Science. This systems approach encompasses agricultural production and services, business management, career and leadership skills, scientific inquiry, use and conservation of land and water resources, career and environmental safety and security, global economics, and the sociological and political aspects of the agricultural industry.

ASTE centers use a three-prong approach in preparing students. The curricula are rich in industry-recognized skill and knowledge, leadership, and career focused instruction. Leadership skills instilled through the activities of the National FFA Organization, formerly known as the Future Farmers of America (FFA) and career skills are acquired through a student's Supervised Agriculture Experience (SAE).

Section 10-65a (b) of the C.G.S, enacted in 1992 and revised in 2008, determines the effectiveness of the ASTE program by asking graduates about the program's relevance to job attainment and further education. The Section states:

*Each local and regional board of education which operates an agricultural science and technology education center shall conduct an annual study to ascertain the educational and vocational activities in which graduates of such center are engaged five years after graduation and shall submit the study to the State Board of Education.*

The Summary Report on the Five-Year Follow-up Study of Agricultural Science and Technology Education Graduates surveyed 745 ASTE program graduates. Sixty-five percent of those graduates completed the survey. The class of 2016 graduate survey gathered information from ASTE program graduates in the following areas:

- high school preparation in ASTE;
- postsecondary education and work experience; and
- current employment situation.

The class of 2016 graduate survey provides data, which will assist regional and local boards of education, as well as Connecticut State Department of Education (CSDE), in identifying successes and areas for improvement in the ASTE program.

## Findings

The following summarizes several significant findings and conclusions of the Class of 2016 survey:

- Ninety-one percent that enrolled in an ASTE center, graduated from that center;
- Eighty-four percent of ASTE students that started a degree program, earned the degree;
- Forty-six percent have a degree from a four-year college or university;
- Seventy-nine percent of respondents who started a four-year college degree program earned a

degree;

- Twenty-four percent are still in college or other advanced study or training programs;
- Nine percent own a business;
- Ninety-four percent are employed; and
- Twenty-five percent are employed full-time in an agriculture-related field.

## **Conclusions**

- Graduates are attending and completing college or university, along with other types of postsecondary training and other education opportunities;
- The program prepared students for the rigors of postsecondary education;
- The program prepared qualified employees for career success in the Agriculture, Food and Natural Resources Cluster area; and
- Graduates are finding employment and remaining on the job.

## **Study Report**

### **Purpose and Objectives**

Section 10-65a (b) of the C.G.S states, “Each local and regional board of education which operates an agricultural science and technology education center shall conduct an annual study to ascertain the educational and vocational activities in which graduates of such center are engaged five years after graduation and shall submit the study to the State Board of Education.” The information from the class of 2016 graduate survey validates the importance of and the need for agriculture programs and to ensure that students are prepared for the current and emerging job market in agriculture and related industries. The Summary Report on the Five-Year Follow-up Study of Agricultural Science and Technology Education Graduates is a summary of the class of 2016 graduate survey responses reported to each of the respective regional ASTE centers.

The survey gathers information from ASTE program graduates in the following areas:

- The adequacy of preparation in all phases of the ASTE program;
- The correlation between skills obtained in ASTE programs and those needed to be college and career ready; and
- The identification of education and work experiences since graduation.

### **Procedure**

From December 2021 through January 2022, nineteen of the twenty Regional ASTE schools, disseminated the annual Summary Report on the Five-Year Follow-up Study of Agricultural Science and Technology Education Graduates survey to their 2016 graduates, (Regional ASTE school, Regional School District Number 12 started in the 2019-2020 school year, they will not be included until the class of 2020 is surveyed.) The CSDE received the survey results from each ASTE center and created this report. A copy of the Agricultural Science and Technology Education Five-Year Graduate Follow-Up Summary Report is available in [Appendix I](#).

## Results

### Reported Graduates

The nineteen regional ASTE centers reported 751 students graduated in 2016. 745 graduates were surveyed, (there were six students who were not able to be found). Sixty-five percent of the 2016 graduates (484 total) completed the class of 2016 graduate survey. To increase the response rate, centers made additional contacts through mailings, Facebook, e-mails, and telephone calls. Table 1: Reported Graduates lists the response rate from the nineteen ASTE Centers.

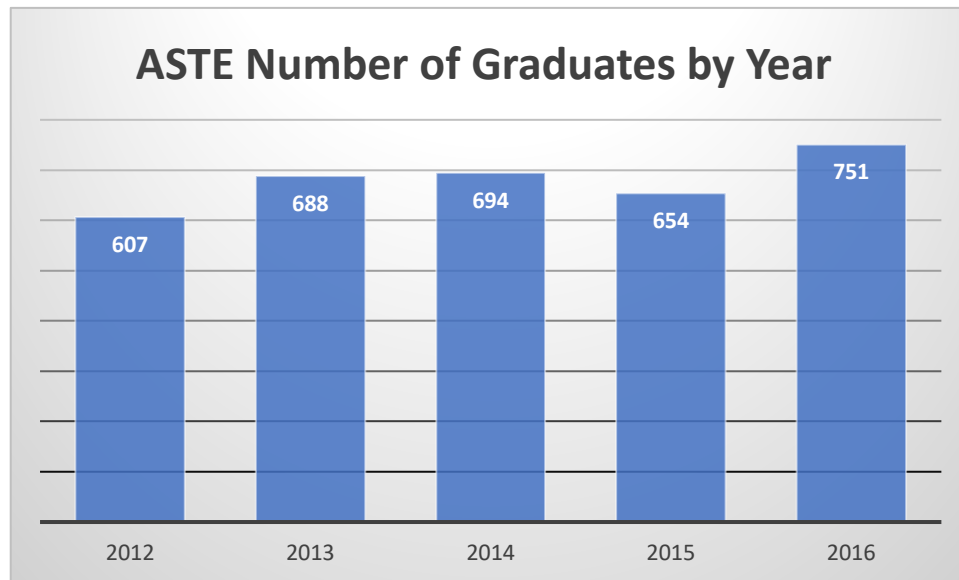
Table 1: Reported Graduates

School Town	Response Rate 2016			School Town	Response Rate 2016		
	Number of Graduates	Number of Responses	% Return Rate		Number of Graduates	Number of Responses	% Return Rate
Bloomfield High School Bloomfield	43	26	60.5	Wamogo High School Litchfield	36	29	80.5
Bridgeport Aquaculture School Bridgeport	104	23	23	Northwestern High School Winsted	26	22	84.5
Glastonbury High School Glastonbury	22	5	21	Nonnewaug High School Woodbury	84	50	60
Killingly High School Dayville	29	24	83	E. O. Smith High School Storrs	30	22	73
Ledyard High School Ledyard	49	34	69	Rockville High School Vernon	4	4	100
Lyman Hall High School Wallingford	60	49	82	Southington High School Southington	29	24	83
Lyman Memorial High School Lebanon	20	17	85	Suffield High School Suffield	22	22	100
Middletown High School Middletown	20	18	90	Trumbull High School Trumbull	47	39	83
Sound School New Haven	73	35	48	Westhill High School Stamford	20	14	70
Housatonic Valley High School Falls Village	27	27	100	<b>Total</b>	<b>745</b>	<b>484</b>	<b>65%</b>

## Graduates Years of Study

Chart 1 shows the number of graduates from the ASTE Centers over the past years.

Chart 1: Number of ASTE Graduates by Year



## College and Career Experience of Agricultural Science and Technology Education Program Graduates

Table 2: Postsecondary Education, Training, Work Experience and Employment History provides the college and career experience of the ASTE program graduates. These totals may represent duplicate counts as graduates may have selected more than one of the available selections. The class of 2016 reported:

- Eighty-four percent have postsecondary degrees and/or certificates;
- Forty-six percent have a degree from a four-year college or university;
- Seventy-nine percent of respondents who started a four-year college degree program earned a degree;
- Twenty-four percent are still in college or other advanced study or training programs;
- Nine percent own a business;
- Ninety-four percent are employed; and
- Twenty-five percent are employed full-time in an agriculture-related occupation.



Table 2: Postsecondary Education, Training, Work Experience and Employment History

Postsecondary Education, Training, Work Experience and Employment History	Percentage of Responding Graduates
attended postsecondary agricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	11.8
completed postsecondary agricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	8.9
are currently enrolled in postsecondary agricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	1.7
attended college and majored in an agriculture program or an agricultural related field that leads to a Baccalaureate or higher degree;	23.8
completed an agriculture college degree program or a program in an agricultural related field that leads to a Baccalaureate or higher degree;	21
are currently enrolled in college and are majoring in an agriculture program or in an agricultural related field that leads to a Baccalaureate or higher degree;	7
<b>Non-agriculture education information. Number of graduates who:</b>	
attended postsecondary nonagricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	21
completed postsecondary nonagricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	22
attended college and majored in a nonagricultural program or a nonagricultural-related field that leads to a Baccalaureate or higher degree;	34
completed a nonagricultural college degree program or a program in a nonagricultural related field that leads to a Baccalaureate or higher degree;	24
are currently enrolled in college and are majoring in a nonagricultural program or in a nonagricultural related field that leads to a Baccalaureate or higher degree;	14.7
<b>Agriculture or agricultural related career information. Number of graduates who:</b>	
own an agriculture or agriculturally related business;	5.6
own an agriculture or agriculturally related business and have employees besides themselves; Number of employees in the business not counting the owner;	5.6 (5)
are considered employed full-time in an agricultural related field*;	25
are currently seeking employment in agriculture or in an agricultural-related field;	14
are currently unemployed and seeking gainful employment*;	2.7
<b>Non-agriculture career information. Number of graduates who:</b>	
own a nonagricultural business;	3.7
own a nonagricultural business and have employees besides themselves; Number of employees in the business not counting the owner;	3.7 (17)
are considered employed full-time in a nonagricultural related field*;	46
entered the armed services; and	3
are currently unemployed and seeking gainful employment*.	2.9

\* These are postsecondary training programs that are not part of a Baccalaureate or higher degree

## Current Employment of Graduates

Graduates provided their current employer and specific job title at the time they completed the survey. Table 3: Representative Job Titles of Respondents provides a sampling of the job titles provided.

Table 3: Representative Job Titles of Respondents

### Representative Job Titles of Respondents

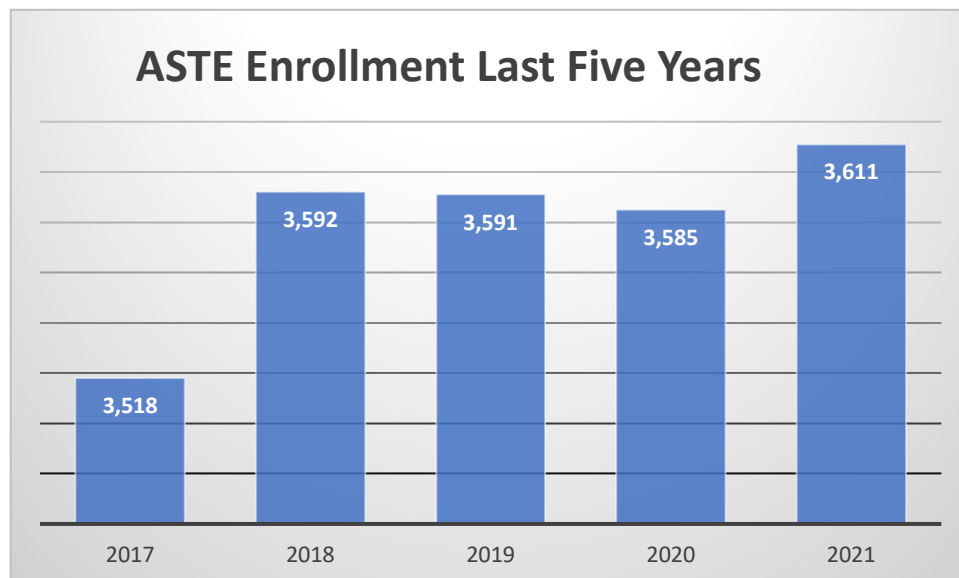
Company	Job Title	Agricultural Related Yes/No
My Barn Child	Ambassador	Yes
Kent Nutrition Group	Territory Sales Manager	Yes
Backpackers Hawaiian Hotel	Hotel Manager	No
Immucell	Vaccine processor	Yes
Earth Tones Nursery	Sales Manager	Yes
Flack Family Farm	Farm Hand	Yes
Western Carolina Regional and Emergency Animal Hospital	ICU and ER Veterinary Nurse	Yes
City of Middletown	Firefighter/EMT	No
Flowers Etc. LLC	Floral Assistant	Yes
Iron Horse Equipment	Mechanic	Yes
Yale University	Graduate Research Assistant	No
Sealift, Inc.	3 <sup>rd</sup> Mate	Yes
CT Army National Guard	11 Bravo Infantry	No
Chevron Shipping	3 <sup>rd</sup> Mate	Yes
Tenet Research	Clinical research Coordinator	No
Protein Science	Laboratory Technician	Yes
Pieper Olson Veterinary Hospital	Veterinary Assistant	Yes
Lather and Laughs	Groomer	Yes
Quinnipiac University	Adjunct Professor	No
Charles Schwab	Investment Consultant	No
Cornell Veterinary Specialists	Emergency Veterinary Assistant	Yes
Starbucks Family Farm	Farm Hand	Yes
Bolton Veterinary Clinic	Veterinary Assistant	Yes
University of Connecticut	Animal care Giver	Yes
PA National Aviary	Avian Specialist	Yes
Argulo Bistro	Chef	No
State of Ohio	Mechanic	Yes
General Dynamics Electric Boat	Pipe Fitter	No
Tractor Supply Company	Team Member	Yes
Whitcraft Group, LLC	Mechanical Engineer	No
Huyck Environmental Conservation Preserve	Research Scientist	Yes
Eversource	Lineman	Yes
US Military	Navy Seal	No
Grimshaw Tree service	Machine Operator	Yes
Converse College	Community Advisor	No

## Enrollment

Chart 2: ASTE Student Enrollment from 2017-2021 shows the numbers of students enrolled in ASTE programs for the past five years. In 2021, ASTE enrollment reached an all time high at 3,611 students.

Chart 2: ASTE Student Enrollment from 2017-2021

ASTE Student Enrollment from 2017-2021



## Conclusions

The purpose of this study was to ascertain the educational and vocational activities in which graduates of ASTE centers are engaged in five years after graduation. In analyzing the results, the following conclusions have been drawn:

- Graduates are attending and completing college or university along with other types of postsecondary training and other education opportunities;
- The program prepares students for the rigors of postsecondary education;
- The program prepares qualified employees for career success in the Agriculture, Food, and Natural Resources Cluster area; and
- Graduates are finding employment and remaining on the job.

These conclusions validate the state's investment of resources to this program. The CSDE will ensure that all ASTE centers continue to implement rigorous standards-based curricula to prepare students to meet the changing needs of college, workplace, technology, and a global economy.

**Appendix I**

**FOLLOW-UP REPORT ED**

**503, REVISED 12/2020**

**STATUTORY REF: C.G.S. 10-64 through 10-65b;**

**10-65; REG. 10-65-1 TO 10-65-8**

**Rev. 12/2020**

**CONNECTICUT STATE DEPARTMENT OF EDUCATION**

**Agricultural Science and Technology Education**

**Five-year Graduate Follow-Up Summary Report**

**SECTION 1**

Town/Agency: <i>Double Click Name</i>	Address:	Telephone:
Name of Person Completing Form:	Title: E-mail:	Date:
Agricultural Science and Technology Education Center Address:		Telephone:
<p>Directions:</p> <p>Each Agricultural Science and Technology Education (ASTE) operating center is to:</p> <ul style="list-style-type: none"> <li>Survey the graduates from the class of <b>2016</b>.</li> <li>Record the tabulated data from the Agricultural Science and Technology Five-Year Follow-Up Survey in the spaces provided below and return by <b>April 1, 2022</b>.</li> </ul> <p><b>Mail or e-mail to: Harold Mackin, Education Consultant, Agricultural Science and Technology Education, Connecticut State Department of Education, Academic Office, P.O. Box 2219, Hartford, CT 06145-2219. E-mail: <a href="mailto:harold.mackin@ct.gov">harold.mackin@ct.gov</a></b></p>		
Graduating year for which survey was conducted:		<b>2016</b>
Number of graduates in <b>2016</b> :		
Number of graduates surveyed:		
Total number of graduates responding:		
<b>Program Information</b>		
<b>Number of years of agricultural science and technology education completed by graduates:</b>		<b>Number of Graduates</b>
	1 year	
	2 years	
	3 years	
	4 years	
<b>Number of graduates from each area of study:</b>		<b>Number of Graduates</b>
	Agribusiness Systems	
	Animal Systems	
	Aquaculture Systems	
	Biotechnology Systems	
	Environmental Service Systems	
	Food Products & Processing Systems	
	Marine Trades	
	Natural Resources Systems	
	Plant Systems	
	Power, Structural & Technical Systems	

## Agricultural Science and Technology Five-Year Graduate Follow-up Summary Report

Postsecondary Education, Training, Work Experience and Employment History	Totals
<b>Agriculture or agricultural related education information. Number of graduates who:</b>	
attended postsecondary agricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	
completed postsecondary agricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	
are currently enrolled in postsecondary agricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	
attended college and majored in an agriculture program or an agricultural related field that leads to a Baccalaureate or higher degree;	
completed an agriculture college degree program or a program in an agricultural related field that leads to a Baccalaureate or higher degree;	
are currently enrolled in college and are majoring in an agriculture program or in an agricultural related field that leads to a Baccalaureate or higher degree;	
<b>Non agriculture education information. Number of graduates who:</b>	
attended postsecondary nonagricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	
completed postsecondary nonagricultural related training, (any formal training that is not part of a Baccalaureate or higher degree program)*;	
attended college and majored in a nonagricultural program or a nonagricultural related field that leads to a Baccalaureate or higher degree;	
completed a nonagricultural college degree program or a program in a nonagricultural related field	
are currently enrolled in college and are majoring in a nonagricultural program or in a nonagricultural related field that leads to a Baccalaureate or higher degree;	
<b>Agriculture or agricultural related career information. Number of graduates who:</b>	
own an agriculture or agriculturally related business;	
own an agriculture or agriculturally related business and have employees besides themselves; number of employees in the business not counting the owner;	
are considered employed full-time in an agricultural related field*;	
are currently seeking employment in agriculture or in an agricultural related field;	
are currently unemployed and seeking gainful employment*;	
<b>Non agriculture career information. Number of graduates who:</b>	
own a nonagricultural business;	
own a nonagricultural business and have employees besides themselves; Number of employees in the business not counting the owner;	
are considered employed full-time in a nonagricultural related field*;	
entered the armed services; and	
are currently unemployed and seeking gainful employment*.	

\*Count a graduate only once for this line.

**Agricultural Science/Technology Five-Year Graduate Follow-up Summary Report**

For each graduate currently employed, indicate in the chart below their employer and their current position (if known) and whether or not their employment is agricultural-related. If necessary, add additional pages.

*Example: Pfizer, Inc., Groton – Laboratory Technician-Yes*

Current Employer	Position Within Company	Agricultural Related, yes/no



**Agricultural Science and Technology Five-Year Graduate Follow-up Summary Report**

**SECTION 2**

**Other Statutory and Regulatory Certification for the Program**

**For specific legislative and regulatory language, please refer to the Connecticut General Statutes Section 10-64 through 10-65b and Regulation Sections 10-65-1 to 10-65-8, inclusive.**

The Superintendent of Schools for the operating district is to verify compliance with the following legislative requirements by checking the “YES” box for each item. ***A narrative MUST be attached for each “NO” item explaining specific measures the district will use to bring them into compliance with current legislation and regulations.***

YES	NO	Legislative and Regulatory Requirements for the 2016-17 school term.
		The facility and equipment funded by the State of Connecticut for the Regional Agricultural Science and Technology Center is used exclusively by the agriculture program.
		A certified staff member is designated as administrator for the program.
		All students in the program have a planned, supervised agricultural experience program which relates to the student’s goals and abilities and is in addition to regularly scheduled classes.
		The student leadership organization, FFA, is an integral part of the program.
		An inventory of equipment purchased with state funds is maintained and is available upon request.
		Support staff such as school nurse, clerical, custodial and teacher substitutes are provided to ensure purposes of the program and standards of health and safety are maintained.
		A racial and ethnic diversity plan, pursuant to Section 10-65a is accurate, on file and available upon request.
		A local advisory committee has met at least twice over the past year.
		A copy of the program of studies, classroom schedules and other supportive materials which will indicate no less than 320 minutes per week being provided for classroom instruction for Grades 10-12, time blocked to allow for laboratory, shop and fieldwork, and student/teacher ratios for the overall program and laboratory situations are available upon request.
		An admissions application for the program is available upon request.
		Certified agriculture and/or aquaculture staff are scheduled for proper coverage of the 12 month program.

**Please fill-in below the requested recruitment data from the 2021-2022 school year:**

- number of students who applied;
- number of students accepted;
- number of students that enrolled in the program;
- number of students not accepted because of lack of space availability in program; and
- number of students rejected for other than space availability.

I hereby certify that the information covered by Section 2, Form ED 503, is proper and valid in connection with the Regional Agricultural Science and Technology Education Center.

(Signature of ASTE Director\Department Head) (Date)

(Print Name ASTE Director\Department Head) (Date)

(Signature Superintendent of Schools) (Date)

(Print Name Superintendent of Schools) (Date)



**Appendix A**

<b>Current Employer</b>	<b>Position Within Company</b>	<b>Agricultural Related, yes/no</b>