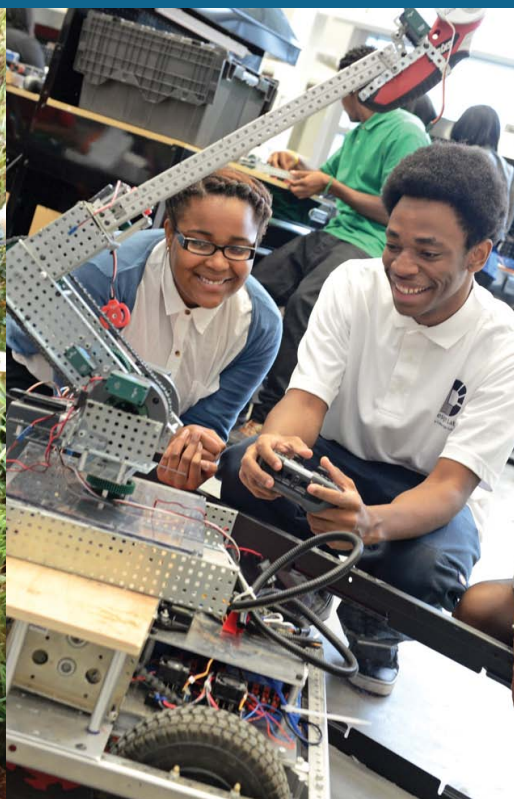
Interdisciplinary Environmental and Sustainability Education and Research:

Results from the Census of Community Colleges

A study conducted by the National Council for Science and the Environment for the Community College Affiliate Program



Shirley Vincent, Rica Santos, Louise Cabral, Lilah Sloane, and Stevenson Bunn

June 2014

National Council for Science and the Environment

CEER Center for Environmental Education Research
A Program of the National Council for Science and the Environment

CCAP Community College Affiliate Program
A Program of the National Council for Science and the Environment

National Council for Science and the Environment

The National Council for Science and the Environment (NCSE) is a not-for-profit organization that improves the scientific basis for environmental decision-making.

NCSE brings together individuals, institutions and communities to advance environmental and sustainability science, education, and their applications in five strategic areas:

- Strengthening Education and Careers;
- Communicating Science to the Public;
- Hosting the annual National Conference on Science, Policy and the Environment;
- Science Solutions to Specific Environmental Challenges; and
- Advancing Policy that Improves the Connection between Science and Decision-making.

For more information on NCSE, please visit www.NCSEonline.org.

Community College Affiliate Program

The Community College Affiliate Program (CCAP) of the National Council for Science and the Environment works to enhance environmental and sustainability efforts at member schools and in their respective communities. CCAP advances:

- The quality of interdisciplinary environmental and sustainability education and workforce training and development;
- Collaboration with other community colleges, 4-year institutions, and federal agencies;
- The participation of administrators, faculty and staff in environmental and sustainability efforts on campus and in the surrounding community;
- Student engagement, leadership and research in sustainability efforts.

CCAP strives to provide students with the knowledge and skills to understand today's environmental challenges, and prepare students at member schools to implement solutions to create resilient communities.

For more information on CCAP, please visit www.NCSEonline.org/CCAP.

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Executive Summary

The National Council for Science and the Environment (NCSE) has completed the first census of interdisciplinary environmental and sustainability (IES) and related credit programs and academic units at community colleges in the United States. This report summarizing its findings is the first research publication for NCSE's Community College Affiliate Program (CCAP).

The 2014 census of community colleges was conducted by reviewing all 1,287 associate degree-granting community college systems in the U.S. These were organized using the Carnegie Classification framework, including 14 associate institution classes and the tribal college class.[1] The census identified academic credit programs with a broad interdisciplinary environmental and sustainability approach as well as credit programs explicitly addressing environment and sustainability in technology, energy, and other disciplines and professional fields. These programs included associate and baccalaureate degrees; their formal specializations; and certificates. The census also identified institutes and centers focused on the environment and/or sustainability.

This report outlines how many IES and related degree programs there are, what types of degrees they offer, and where they reside within their colleges' administrative structures, as well as the amount and distribution of IES and related institutes and centers. Future reports will cover other census findings. Within this report, significant findings include:

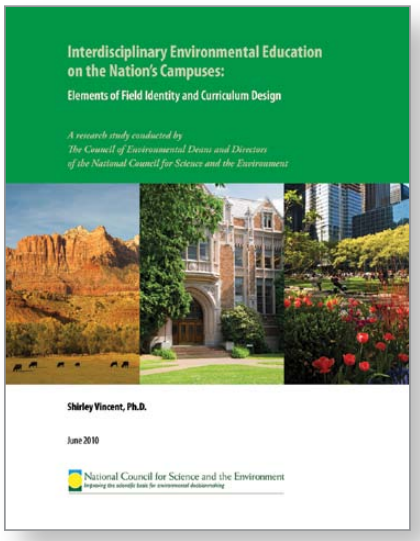
- A total of 939 IES and related degrees are offered at community college campuses throughout the U.S., concentrated in the Pacific, South Atlantic, and East North Central census divisions.
- The majority of IES and related degrees offered at community college campuses are Associate of/in Science or Associate of/in Applied Science degrees. Of 939 degrees identified, 16 are bachelor's degrees.
- The IES and related degrees fall into three categories, each with further subcategories, based on their names: broad IES degrees (43% of all degrees identified), such as environmental science(s), environmental studies, or natural resources; technology and energy degrees (34%), such as environmental technology or renewable energy; and degrees in other related disciplines and fields (23%), such as sustainable agriculture, forestry management, and environmental health.
- More than a quarter (27%) of community college campuses offer IES and related degrees, with the highest proportions of community college campuses offering IES and related degrees in North Dakota and Wyoming and the lowest proportions in Alaska and Rhode Island.
- About a tenth of IES and related degrees are housed in IES academic units; nearly half are in traditional departments, colleges, schools, or divisions; and the largest proportion are programs in offices of academic affairs or instruction.
- The census also identified 50 IES and related institutes and centers altogether, of which a majority have a general environmental and sustainability focus (36%) or an energy and climate change focus (28%).

1. For more information on the Carnegie Classification framework see classifications.carnegiefoundation.org.

Background – the NCSE Research Program on Environmental and Sustainability Higher Education

NCSE initiated its extensive research program on IES higher education in 2003. The first study sought to understand the nature and number of academic leaders' perspectives on ideal curriculum design for baccalaureate and graduate IES degree programs.

One of the most important findings from this initial study was a consensus on the identity of the IES field: it is focused on the interfaces and interactions of coupled human-nature systems with the goal of preparing students to be sustainability-oriented problem solvers. Key learning outcomes include disciplinary synthesis abilities, systems-thinking cognitive skills, knowledge of the sociopolitical and natural aspects of environmental problems, understanding of the limits of science and technology, and recognition of the importance of acknowledging and reporting uncertainty.[2]



IES programs have a distinctive role in higher education in preparing students to understand problems and devise solutions using insights gained from interdisciplinary knowledge and different epistemological viewpoints and a systems approach rather than a traditional reductionist approach.

In 2008, NCSE conducted a census to identify all baccalaureate and graduate IES degree programs offered by universities and colleges in the U.S. The census served to define and characterize the population for ongoing research.

The census was followed by an extensive national survey of IES program leaders. The three related research tasks together comprised the first comprehensive empirical study that sought to identify the defining characteristics of the field and describe the diversity of programs' administrative and curricular structures at U.S. higher education institutions.

The national survey of IES academic program administrators elucidated the characteristics that collectively describe the diversity of programs, including:

- Ideal core interdisciplinary knowledge and integrated skills competencies
- Ideal models for curriculum design
- A framework for understanding the diversity of programs
- Different types of administrative structures for programs

2. For more information on the study see: Vincent, S. and W. Focht (2010). U.S. higher education environmental program managers' perspectives on curriculum design and core competencies: implications for sustainability as a guiding framework. *International Journal of Sustainability in Higher Education* 10(2): 164-183. For a more thorough discussion on sustainability and its relationship to the consensus view of IES program identity see: Vincent, S. and W. Focht (2010). In search of common ground: exploring identity and the possibility of core competencies for interdisciplinary environmental programs. *Environmental Practice* 12(1):76-86.

The findings of these studies are summarized in the 2010 NCSE report *Interdisciplinary Environmental Education on the Nation's Campuses: Elements of Field Identity and Curriculum Design,* available on the NCSE website at www.NCSEonline.org/education-research-reports.

The 2012-14 Censuses and Surveys

The census of IES programs was updated and extended in 2012. A total of 1,562 public and not-for-profit and 76 for-profit schools were reviewed. The new census identified baccalaureate and graduate academic programs with an explicit interdisciplinary approach as well as academic programs in disciplines and professional fields with formal specializations in environment and sustainability; minors and certificate programs; and centers and institutes focused on the environment and/or sustainability. A series of three reports from NCSE illustrates the rapid growth in the IES field overall—especially in sustainability academic programs—and the emergence of new types of interdisciplinary energy programs:

- *Interdisciplinary Environmental and Sustainability Education: Results from the 2012 Census of U.S. Four-Year College and Universities*
- *Sustainability Education: Results from the 2012 Census of U.S. Four-Year College and Universities*
- *Broad and Non-traditional Energy Education: Results from the 2012 Census of U.S. Four-Year College and Universities*

A survey of the leaders of IES academic programs was completed in spring 2013. The survey instrument was developed with numerous experts and included questions on degree program attributes and curriculum design, program leadership and faculty, administrative structure and resources, internal and external partnerships, and influences on programs' success. A series of reports will be released throughout 2013-14 combining findings from the survey with case studies and relevant information from other published journal articles and reports. The first report was released in August 2013:

- *Interdisciplinary Environmental and Sustainability Education on the Nation's Campuses 2012: Curriculum Design*

A separate survey of the directors of IES institutes and centers at research universities was completed in summer 2013. This survey included questions on the institutes' and centers' mission and goals, administrative structure, personnel, and resources. The census identified a total of 1,121 IESICs at 236 universities. The directors of these IESICs were invited to participate in the survey. Completed survey responses were received from the directors of 340 IESICs for a response rate of 28%. This report was released in March 2014:

- *Interdisciplinary Environmental and Sustainability Education and Research: Institutes and Centers at Research Universities*

A census of associate degree-granting institutions in the U.S. was completed in spring 2014. The census identified 939 IES and related degree programs and 50 IES and related institutes and centers located in 1,287 community college systems. This report describes those findings from the census.

Rapid Growth in Environmental and Sustainability Higher Education

The number of IES programs continues to expand dramatically. The 2012 census identified 1,151 academic units/programs offering 1,859 IES baccalaureate and graduate degrees located at 838 colleges and universities. In the four years following the 2008 census, the number of schools offering IES programs increased by 29%, the number of academic units by 37%, and the number of degree programs by 57%.

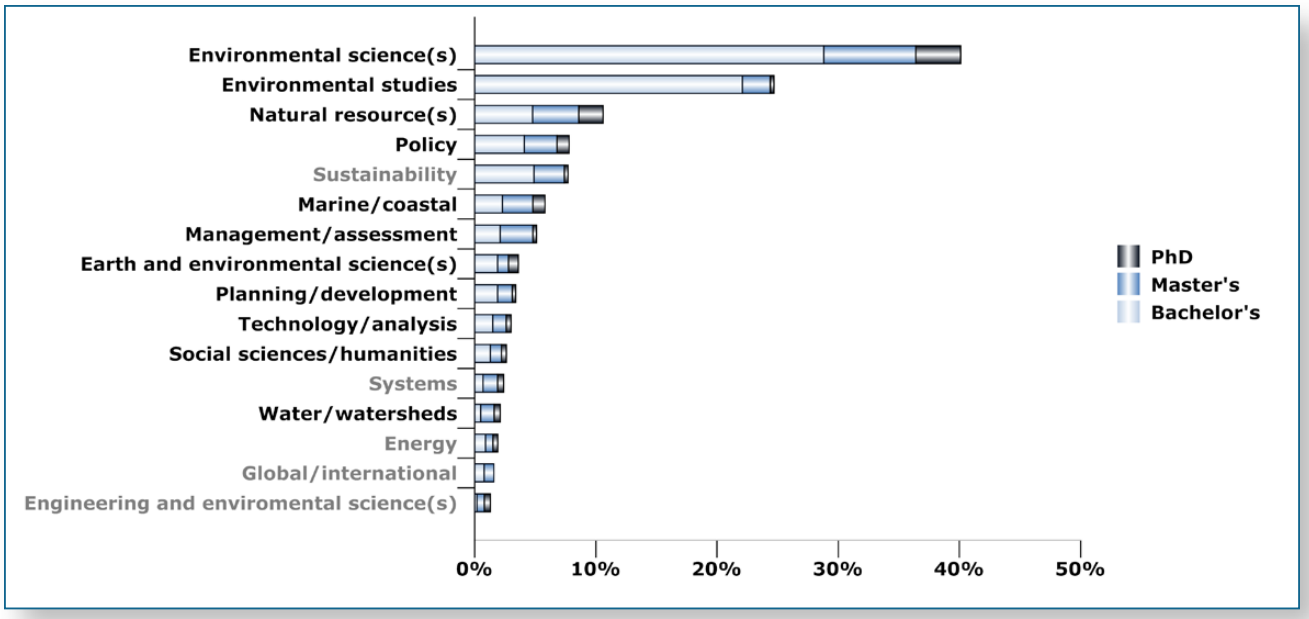
Matriculation in IES programs also increased; 64% of baccalaureate programs reported positive growth trends, as did 30% of master's programs, and 23% of doctoral programs. The average number of students enrolled in IES programs increased by 49% for undergraduate programs and 15% for master's programs; the average number of students enrolled in doctoral programs remained steady.

The census findings reveal several trends:

- The last few years have seen an expansion of IES institutes and centers administering academic programs; the proportion of IES degree programs offered by IES institutes, centers, colleges and schools increased by 6%.
- More degree programs focused on specific themes or problem-solving domains. The numbers of all types of IES degree programs increased, but the proportion of the total named environmental science(s) or environmental studies declined, while programs with other names such as Community, Environment and Development; Environmental Dynamics; or Coastal and Watershed Science and Policy increased.
- Tremendous growth in the number of sustainability degree programs—from 13 in 2008 to 141 in 2012.
- The emergence of new types of IES programs—interdisciplinary energy programs, environmental/sustainability systems programs, programs that combine engineering and environmental science, and programs with an international or global focus.
- More master's programs. The number of master's degrees increased by 68%, compared with 57% for baccalaureate degrees and 35% for doctoral degrees. A number of the new master's programs—37—have received a Professional Science Master's™ designation (www.NPSMA.org).

One of the defining characteristics of IES programs is their diversity, both in the types of programs offered and in their administrative structures. The largest proportion of IES degree program names, 40%, includes the term environmental science or sciences (Figure 1). Another 25% include the term environmental studies. Program names that include natural resource(s) comprise 11%. The growth in sustainability programs brings this category to 8%, tied with the proportion that includes policy in their names.

Figure 1. IES degree program categories (titles in gray indicate new program categories)



IES degrees are offered in a variety of administrative locations, including degree programs within a traditional disciplinary department or school; IES departments, schools, and colleges; IES centers and institutes; programs that span multiple departments, one or more colleges, or an entire institution; and degree programs operated by a consortium of campuses or institutions. The administrative homes for the majority of IES degrees are interdisciplinary academic units or programs. Many (41%) are located in interdisciplinary academic units—a department, school, college, or a center or institute. Another 37% are offered through interdisciplinary programs that span units. Only 22% are located in traditional academic departments or schools.

Community Colleges Census Overview

The census was conducted by reviewing the websites and catalogs of all associate degree-granting institutions in the United States. The list of institutions was obtained from the Carnegie Foundation for the Advancement of Teaching, which provides listings of all institutions of higher education in the U.S. sorted by institution type.[3,4] The census identified 1,018 public and not-for-profit and 268 for-profit community college systems, including districts comprising multiple colleges (e.g., Foothill-De Anza Community College District in California, comprising De Anza and Foothill Community Colleges) as well as colleges comprising multiple campuses (e.g., Cuyahoga Community College in Ohio, comprising the Eastern, Metropolitan, Western, and Westshore Campuses).

Community college systems, operating under unified leadership but comprising multiple locations, were expanded into a total of 2,236 community colleges in the database in order to more accurately reflect the number of communities where IES and related degree programs are available. The census included locations named "college" within systems named "district," and locations named "campus" within systems named "college." The census did not include locations named "center" or other limited-service locations. The frequencies were calculated using the 2,236 community college locations, which throughout this report will be referred to as "community colleges."

The census identified all academic credit programs with a broad interdisciplinary environmental and sustainability approach as well as credit programs explicitly addressing the environment and/or sustainability in technology, energy, and other disciplines and professional fields. These programs included associate and baccalaureate degrees; their formal specializations; and certificates. The census also identified institutes and centers focused on the environment and/or sustainability. Although the census attempted to identify all IES and related degrees and institutes/centers, some may have been missed if their foci were not sufficiently clear based on the materials examined.

This report focuses on IES and related degree programs and institutes and centers; future reports will cover other census findings.

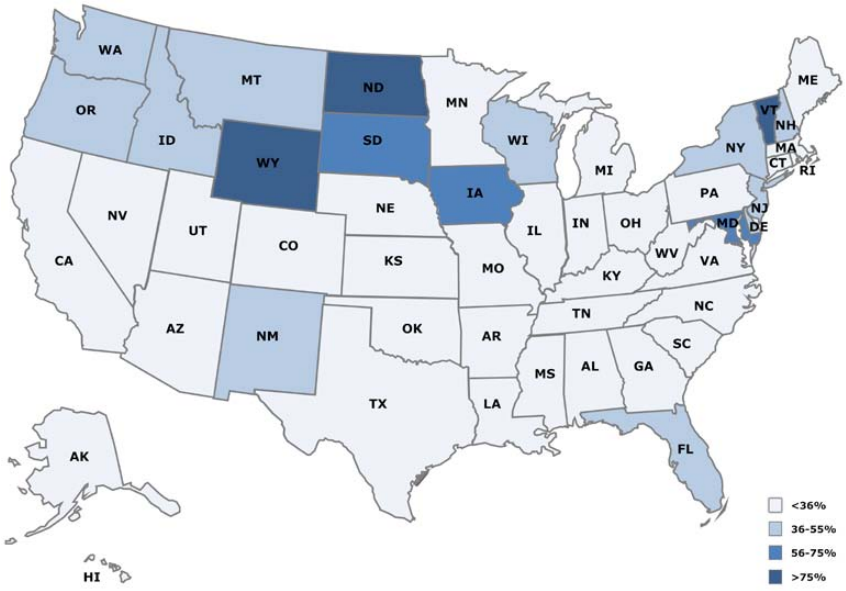
3. For the Carnegie Foundation listings of institutions, see classifications.carnegiefoundation.org/lookup_listings/standard.php.

4. The census excluded the small number of 4-year colleges and universities that offer associate degrees. Though these institutions are not included in this report, they will be identified in NCSE's next census of 4-year institutions.

How many IES and related degree programs are there, and where are they located?

The proportion of community colleges offering IES and related degrees is less than 36% in 33 states (Figure 2). States in the northern half of the country tend to have at least 36% of community colleges offering IES and related degrees. In the southern half, New Mexico and Florida also have above average proportions. The states with the highest proportions, Wyoming, North Dakota, and Vermont are also among the states with the fewest community colleges (Figure 2; Table 1).

Figure 2. Proportion of U.S. community colleges offering IES and related degrees



Throughout the U.S., 27% or 601 of the 2,236 community colleges offer IES and related degrees (Table 1). These institutions are concentrated in California, New York, Florida, and Texas, of which each has more than 30 IES and related degree-granting community colleges. Wisconsin, Washington, and Iowa have between 20 and 30 community colleges offering IES and related degrees. Nearly half (46%) of states have between 10 and 20 community colleges offering IES and related degrees, and the remaining 40% have less than 10.

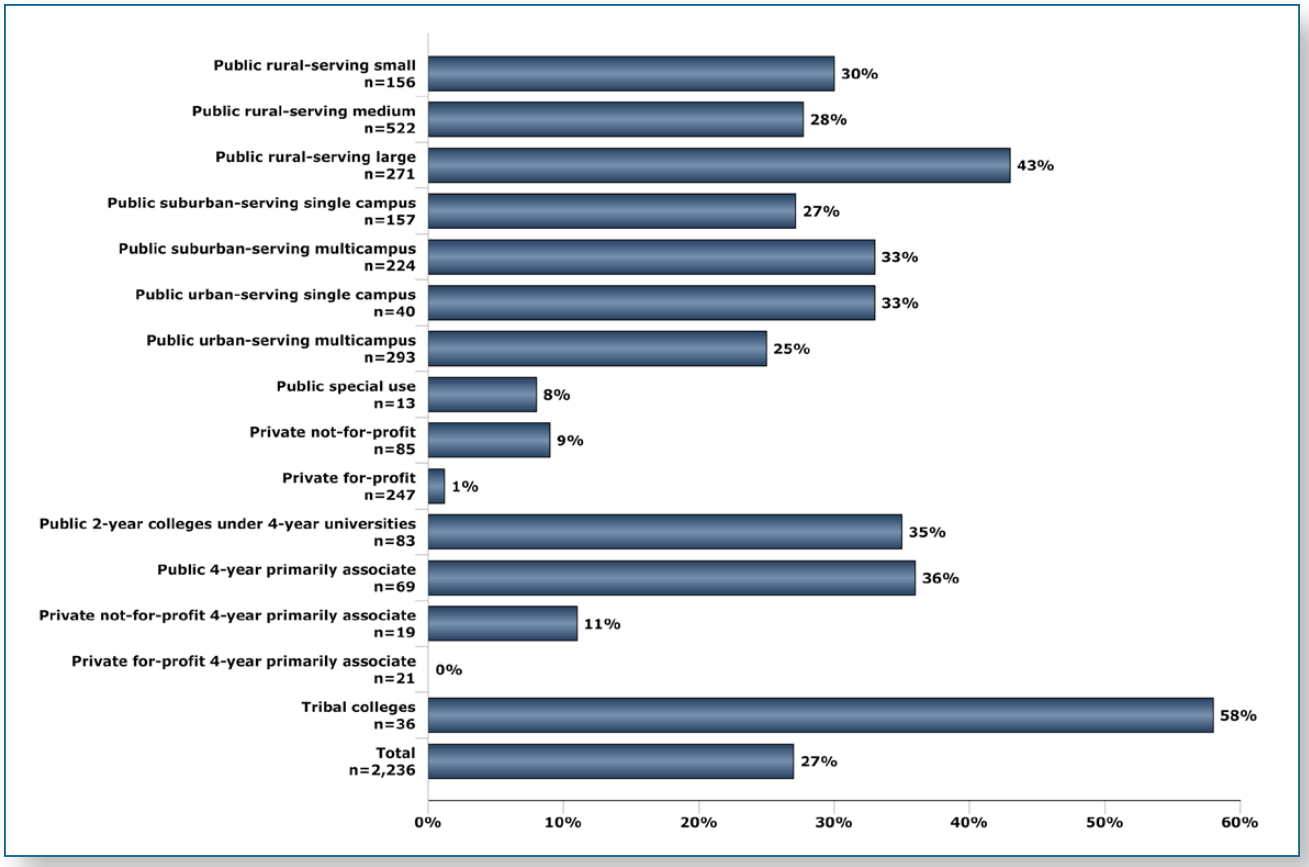
Table 1. U.S. community colleges offering IES and related degrees by state

State	IES and related degree-granting community colleges	Proportion of all community colleges	State	IES and related degree-granting community colleges	Proportion of all community colleges
Alaska n=5	0	0%	North Carolina n=101	13	13%
Alabama n=55	12	22%	North Dakota n=11	10	91%
Arkansas n=40	8	20%	Nebraska n=22	1	5%
Arizona n=47	14	30%	New Hampshire n=9	4	44%
California n=167	49	29%	New Jersey n=32	16	50%
Colorado n=50	16	32%	New Mexico n=28	10	36%
Connecticut n=21	7	33%	Nevada n=9	1	11%
Delaware n=5	2	40%	New York n=82	37	45%
Florida n=98	38	39%	Ohio n=88	20	23%
Georgia n=109	14	13%	Oklahoma n=29	9	31%
Hawaii n=7	1	14%	Oregon n=40	18	45%
Iowa n=36	21	58%	Pennsylvania n=84	14	17%
Idaho n=5	2	40%	Rhode Island n=4	0	0%
Illinois n=77	20	26%	South Carolina n=56	13	23%
Indiana n=19	2	11%	South Dakota n=8	5	63%
Kansas n=43	11	26%	Tennessee n=38	10	26%
Kentucky n=52	1	2%	Texas n=154	31	20%
Louisiana n=40	2	5%	Utah n=27	2	7%
Massachusetts n=37	10	27%	Virginia n=47	4	9%
Maryland n=23	17	74%	Vermont n=14	12	86%
Maine n=10	2	20%	Washington n=53	24	45%
Michigan n=57	19	33%	Wisconsin n=66	29	44%
Minnesota n=57	15	26%	West Virginia n=22	4	18%
Missouri n=36	6	17%	Wyoming n=11	10	91%
Mississippi n=23	3	13%	For-profit in multiple states n=62	2	3%
Montana n=20	10	50%	**Total n=2,236**	**601**	**27%**

Several institution types have higher than average proportions of community colleges that offer IES and related degrees; these include public rural-serving institutions, public suburban-serving institutions, public 2-year colleges under 4-year universities, and public 4-year primarily associate degree-granting colleges (Figure 3). The proportions of special categories of community colleges that offer IES and related degrees vary from the overall average (Figure 4). Historically black colleges and universities (HBCU) and minority-serving institutions (MSI) have lower proportions. American University of Health Sciences in California, the only institution in the category of community colleges that offer an

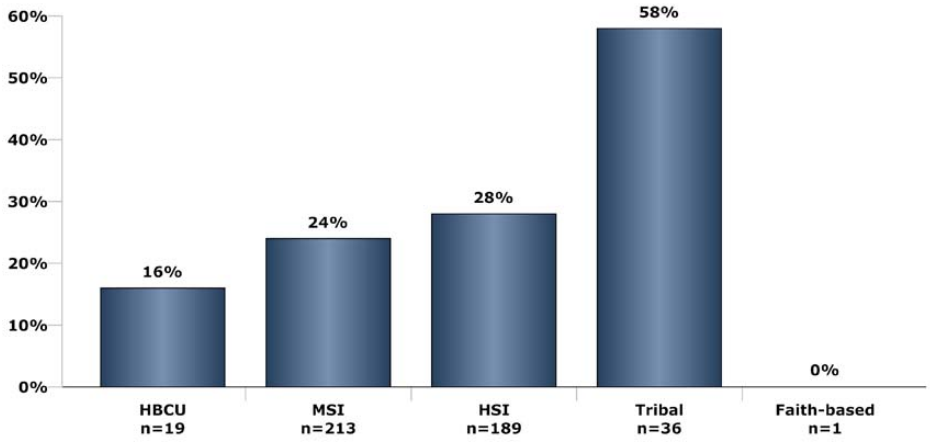
explicit faith-based education, does not offer IES and related programs.[5] Other special categories have proportions higher than the overall average. Hispanic-serving institutions (HSI) are slightly more likely than other institutions to have IES and related degree-granting programs, while tribal colleges are much more likely.

Figure 3. Proportion of community colleges offering IES and related degrees by Carnegie associate degree-granting institution type



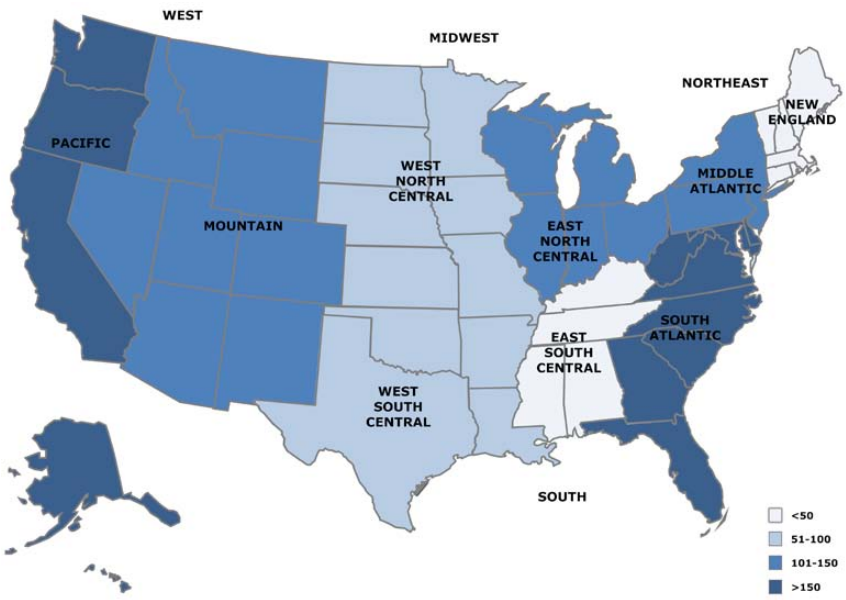
5. All special categories are included in the Carnegie data with the exception of institutions offering an explicit faith-based education. These institutions were classified based on their website content, not their historical or current affiliation with a religious organization. Many, but not all, HBCU and HSI schools are also classified as MSI institutions (federally recognized as Title IV colleges and universities).

Figure 4. Proportion of special category community colleges offering IES and related degrees



The census identified 939 IES and related degrees. Nearly a third of these are located in the Pacific (17%) and South Atlantic (17%) states (Figure 5; Table 2). The East South Central and New England states have the fewest IES and related degrees, comprising 3% and 5%, respectively.

Figure 5. Number of IES and related degree programs by census division[6]



6. For more information on census regions, census divisions, and their constituent states, see census.gov/geo/reference/gtc/gtc_census_divreg.html

The IES and related degrees fall into three name categories: broad IES, technology and energy, and other related disciplines and fields degrees. Broad IES degrees are most represented in the Pacific states and least represented in the East South Central states (Table 2). Technology and energy degrees are most represented in the East North Central states, where almost a quarter (24%) of these degrees are located, and least represented in the New England states. Degrees in other related disciplines and fields are most represented in the Pacific states and least represented in the New England states.

Table 2. IES and related degree programs by census division

Census division	Broad IES degrees n=406	Technology and energy degrees n=319	Other related disciplines and fields degrees n=214	Total n=939
New England	8%	2%	3%	**5%**
Middle Atlantic	16%	6%	7%	**11%**
East North Central	11%	24%	13%	**16%**
West North Central	8%	13%	10%	**10%**
South Atlantic	15%	18%	19%	**17%**
East South Central	1%	3%	7%	**3%**
West South Central	6%	10%	7%	**8%**
Mountain	16%	10%	10%	**13%**
Pacific	18%	13%	22%	**17%**

Note: Excludes degrees at for-profit institutions in multiple states (proportion of degrees offered at these institutions is <1%)

What kinds of IES and related degree programs exist, and where are they housed within community colleges?

The three most prevalent degree types at community colleges are Associate of/in Science(s), Associate of/in Arts, and Associate of/in Applied Science(s). The degree types were standardized to Associate of Science, Associate of Arts, and Associate of Applied Science for data organization and analysis.

Based on a review of degree types as defined by 16 statewide community college systems,[7] Associate of Science and Associate of Arts degrees are typically intended to prepare students to transfer into baccalaureate programs, often at nearby partner 4-year institutions. Associate of Applied Science degrees are typically intended to prepare students for immediate employment, career advancement, or occupational licensure.

Further distinctions between Associate of Science and Associate of Arts degrees vary among states. Most often, both are intended to provide a broad liberal arts and science background transferable to baccalaureate programs, but Associate of Science degrees are specialized for baccalaureate programs with substantial lower division requirements in math and sciences, such as programs in STEM fields and agriculture. Bay College in Michigan offers an Associate of Science in Pre-Natural Resources designed to transfer to a variety of baccalaureate programs, including Ecosystem Management, Environmental Science, Fisheries and Wildlife, Forestry, and Outdoor Recreation. In some states, Associate of Science degrees may not have intended transferability; Florida is an example. Associate of Arts may serve as the default title for associate degrees at community colleges where only one type of degree is offered.

Most IES and related degrees are Associate of Science (41%) or Associate of Applied Science (37%) degrees (Figure 6). Associate of Arts degrees comprise 15% of all IES and related degrees. Only 16 bachelor's degrees comprising 2% were identified. The remaining 6% are other types of associate degrees, such as Associate of Arts and Sciences, Associate of Applied Technology, Associate of Occupational Studies, and Associate of Technical Studies. Of the 16 bachelor's degrees identified at community colleges, 14 are broad IES degrees and 2 are other related disciplines and fields, specifically forestry, degrees. These include 8 Bachelor of Science, 6 Bachelor of Arts, and 2 Bachelor of Applied Science degrees.

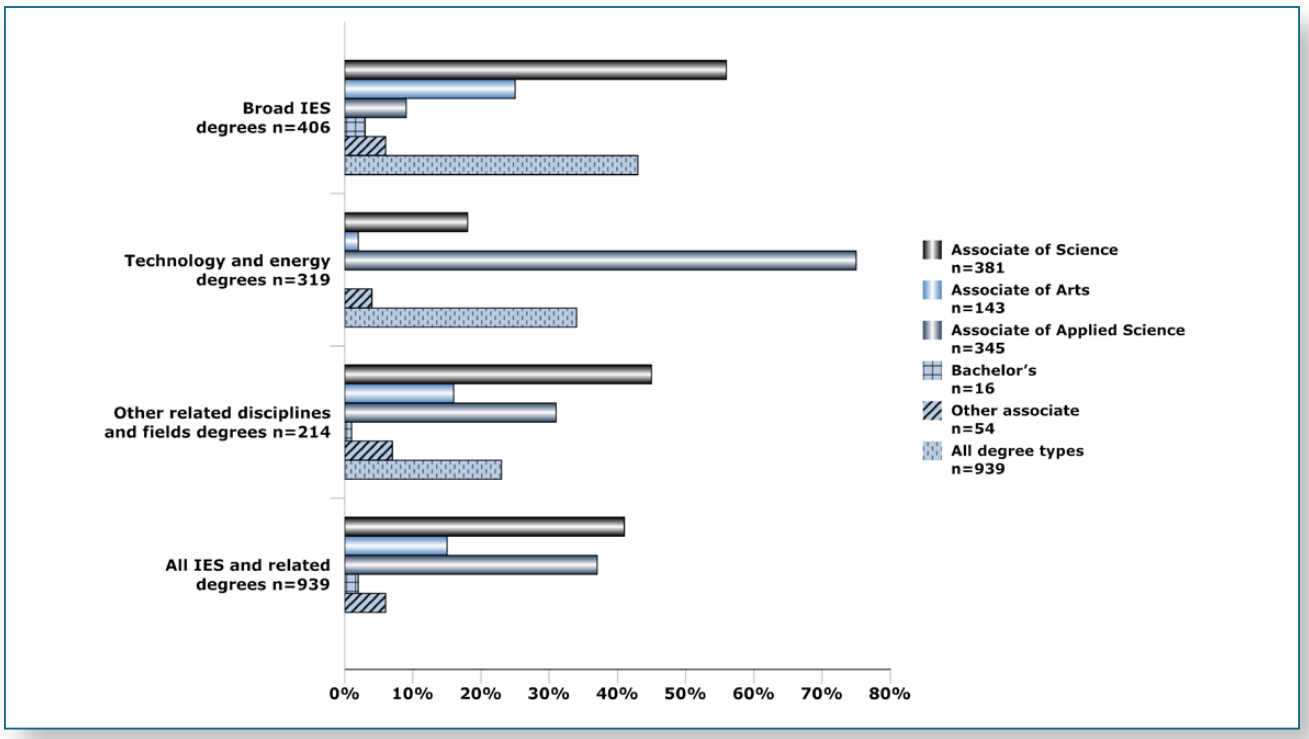
Broad IES degrees make up the largest proportion (43%) of IES and related degrees. Broad IES degrees include those named environmental science(s), environmental studies, natural resources, sustainability, marine/coastal science/studies, or other environmental topics. Over half (56%) of broad IES degrees are Associate of Science degrees.

Another 34% are in the technology and energy name category. Technology and energy degrees include all IES and related degrees with "technology/technician" or "energy" in their names, such as environmental technology, natural resources technician, and alternative energy. Technology and energy degrees overwhelmingly tend to be Associate of Applied Science degrees, with three-quarters (75%) in this type.

7. Degree type definitions were found online for Arkansas, Colorado, Florida, Idaho, Maryland, Minnesota, Montana, North Carolina, North Dakota, Oklahoma, Oregon, Tennessee, Texas, Utah, West Virginia, and Wisconsin.

The smallest proportion (23%) are in the other related disciplines and fields degrees name category. These include degrees in other disciplines and fields with environmental and/or sustainability emphases in their names. Examples are sustainable agriculture, forestry management, and environmental health. The degree types in this name category have a similar distribution to that of all IES and related degrees, with higher proportions of Associate of Science (45%) and Associate of Applied Science (31%) degrees and a smaller proportion of Associate of Arts degrees (16%).

Figure 6. IES and related degree names and types



A small proportion (7%) of IES and related degrees offer formal specialization options (Table 3). Formal specialization options are most common for Associate of Science (9%) and Associate of Applied Science degrees (8%). Very few of Associate of Arts (3%) and other associate degrees (2%) offer specializations.

Examples from each name category include:

- Rose State College in Oklahoma offers an Associate of Science in Environmental Science with three options: Quality/Safety, Natural Resources, and Science and Analytical. All options prepare students to transfer into environmental science bachelor's degree programs.
- Cascadia Community College in Washington offers an Associate of Applied Science in Environmental Technologies and Sustainable Practices with three emphases: Business, Technology, and Water Quality. While these degrees are intended to prepare students for immediate employment, Cascadia's Associate of Applied Science degrees require the same liberal arts and sciences courses as the associate degrees intended to prepare students for transfer to 4-year institutions.

- Potomac State College of West Virginia University offers an Associate of Arts in Forestry with four majors: Parks and Recreation, Resource Management, Wildlife Resources, and Wood Industries. Students complete the 4-year forestry program at West Virginia University.

Table 3. Formal specializations by degree type

Degree type	Max # of specializations	Mean # of specializations	Proportion of degrees with specializations
Associate of Science n=381	4	2	9%
Associate of Arts n=143	4	2	3%
Associate of Applied Science n=345	5	3	8%
Bachelor's n=16	2	2	6%
Other associate n=54	2	2	2%
Total n=939	5	2	7%

Broad IES Degrees

The 406 broad IES degrees have a variety of names. Nearly half (49%) are named environmental science(s), and about a quarter (23%) are named environmental studies (Table 4). Degrees named natural resources, including natural resources conservation and management, make up 15%. Only 19 degrees focusing on general sustainability were identified; other sustainability degrees had particular emphases or career skills that placed them in the two other name categories. Broad IES degrees may be offered as specializations within liberal arts and sciences degree programs; for example, the Associate of Science in General Science at Baton Rouge Community College in Louisiana has concentrations in Coastal Environmental Science, Environmental Management Systems, and Natural Resource Management.

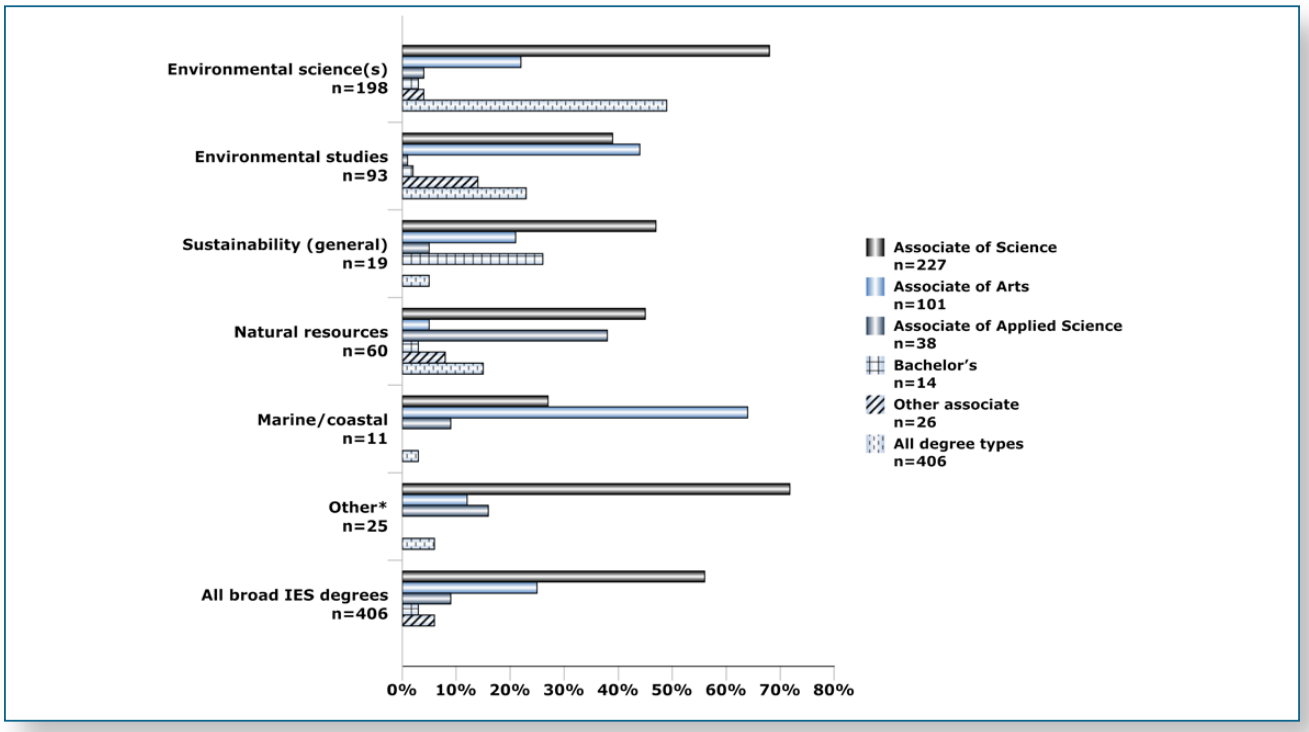
Most broad IES degrees are Associate of Science (56%) or Associate of Arts (25%) degrees (Figure 7). Out of all broad IES degrees, environmental studies and marine/coastal degrees are more likely to be Associate of Arts degrees, and natural resources degrees are more likely to be Associate of Applied Science degrees.

Table 4. Broad IES degrees' names and types

Broad IES degree name subcategory	Associate of Science n=227	Associate of Arts n=101	Associate of Applied Science n=38	Bachelor's n=14	Other associate n=26	All degree types n=406	Proportion of all broad IES degrees
Environmental science(s)	134	43	8	**5**	8	198	49%
Environmental studies	36	41	1	**2**	13	93	23%
Sustainability (general)	9	4	1	**5**	0	19	5%
Natural resources	27	3	23	**2**	5	60	15%
Marine/coastal	3	7	1	**0**	0	11	3%
Other*	18	3	4	**0**	0	25	6%

*Includes program names with conservation, management, policy, specialist, systems

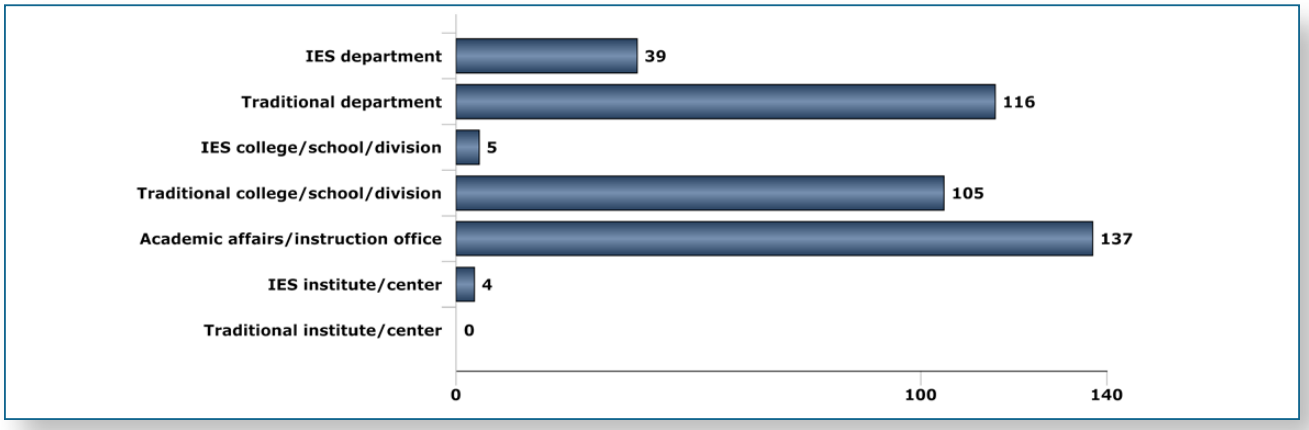
Figure 7. Broad IES degrees' names and types



*Includes program names with conservation, management, policy, specialist, systems

Broad IES degrees are most often located under offices of academic affairs or instruction (34%); large proportions are also housed in traditional departments and traditional colleges, schools, or divisions (Figure 8). Housed in the Division of Advanced Technology and Applied Science, the Environmental Studies degree at Saddleback College in California is interdisciplinary and prepares students for a variety of entry-level employment opportunities such as risk assessment scientists, park rangers, and ecological restoration technicians. A majority of these traditional departments are focused on the natural sciences, particularly biology. An example is the Department of Biology at Indian River State College

Figure 8. Broad IES degrees' administrative locations



in Florida, which offers Associate of Arts degrees in Environmental Science and Marine Science. Small proportions of broad IES degrees are housed in IES departments (10%) and IES colleges, schools, or divisions (1%). With only 4 degrees administered by institutes or centers, degrees in the broad IES category are the least likely out of all IES and related degrees to be located in institutes or centers.

Table 5. IES academic units offering broad IES degrees by Carnegie associate degree-granting institution type n=27

Public rural-serving medium n=6
Department of Environmental Science (Corning Community College)
Department of Environmental Science (Lower Columbia College)
Department of Environmental Science/Water Quality Technology (Casper College)
Department of Environmental Studies (Feather River College)
Department of Forestry and Natural Resources (Columbia College)
Department of Natural Resources (Treasure Valley Community College)
Public rural-serving large n=6
Department of Agriculture and Natural Resources (Hawkeye Community College)
Department of Agriculture/Natural Resources (Santa Rosa Junior College)
Department of Environmental Conservation (Skagit Valley College)
Department of Environmental Sciences (Spokane Community College)
Department of Marine Science Technology (College of the Redwoods)
Division of Agriculture and Environmental Sciences (Modesto Junior College)
Public suburban-serving single campus n=4
Department of Environmental Conservation/Horticulture (Finger Lakes Community College)
Department of Environmental Sciences (Rio Hondo College)
Department of Environmental Studies (Ohlone College)
Department of Environmental Technology (Southwestern College)
Public suburban-serving multicampus n=2
Department of Environmental Studies and Sustainability (Sierra College)
Center for Sustainability and Alternative Energy (Burlington County College)
Public urban-serving single campus n=1
Department of Environmental Science (Hudson County Community College)
Public urban-serving multicampus n=4
Department of Environmental Science (Moorpark College)
Department of Environmental Science and Technology (Austin Community College District)
Department of Marine Science (Oxnard College)
Department of Natural Resources (American River College)
Public 2-year colleges under 4-year universities n=1
College of Food, Agricultural, and Environmental Sciences (The Ohio State University Agricultural Technical Institute)
Public 4-year primarily associate n=2
School of Agriculture and Natural Resources (Abraham Baldwin Agricultural College)
Institute of Marine and Environmental Studies (Daytona State College)
Tribal colleges n=1
Department of Tribal Environmental Science (United Tribes Technical College)

Technology and Energy Degrees

The 319 degrees in the technology and energy name category are about equally split between technology (45%) and energy (44%) degrees (Table 6; Figure 9). The remaining 11% have other names such as Sustainable Agriculture Technology (Associate of Applied Science at Zane State College in Ohio) and Green Construction Technology (Associate of Applied Science at Howard College in Texas).

The majority (75%) of technology and energy degrees are Associate of Applied Science degrees, which prepare students for immediate employment in a field indicated by the degree name. Examples include Power Generation and Alternative Energy (St. Philip's College in Texas) and Forest Management and GIS Technology (Southeastern Community College in North Carolina). A minority of technology and energy degrees are designed to transfer to 4-year institutions; Associate of Science degrees comprise 18% and Associate of Arts degrees comprise 2%.

General alternative energy degrees make up the largest proportion (30%) of technology and energy degrees. More than three-quarters (80%) of general alternative energy degrees prepare students for immediate employment. About 14% of technology and energy degrees are focused on specific alternative energy sources (wind, solar, biofuels), and students in these degree programs often have opportunities for hands-on training. For example, Cloud County Community College in Kansas offers a Wind Energy Technology degree and a wind turbine available for training, in addition to two operating turbines in an on-campus wind farm.

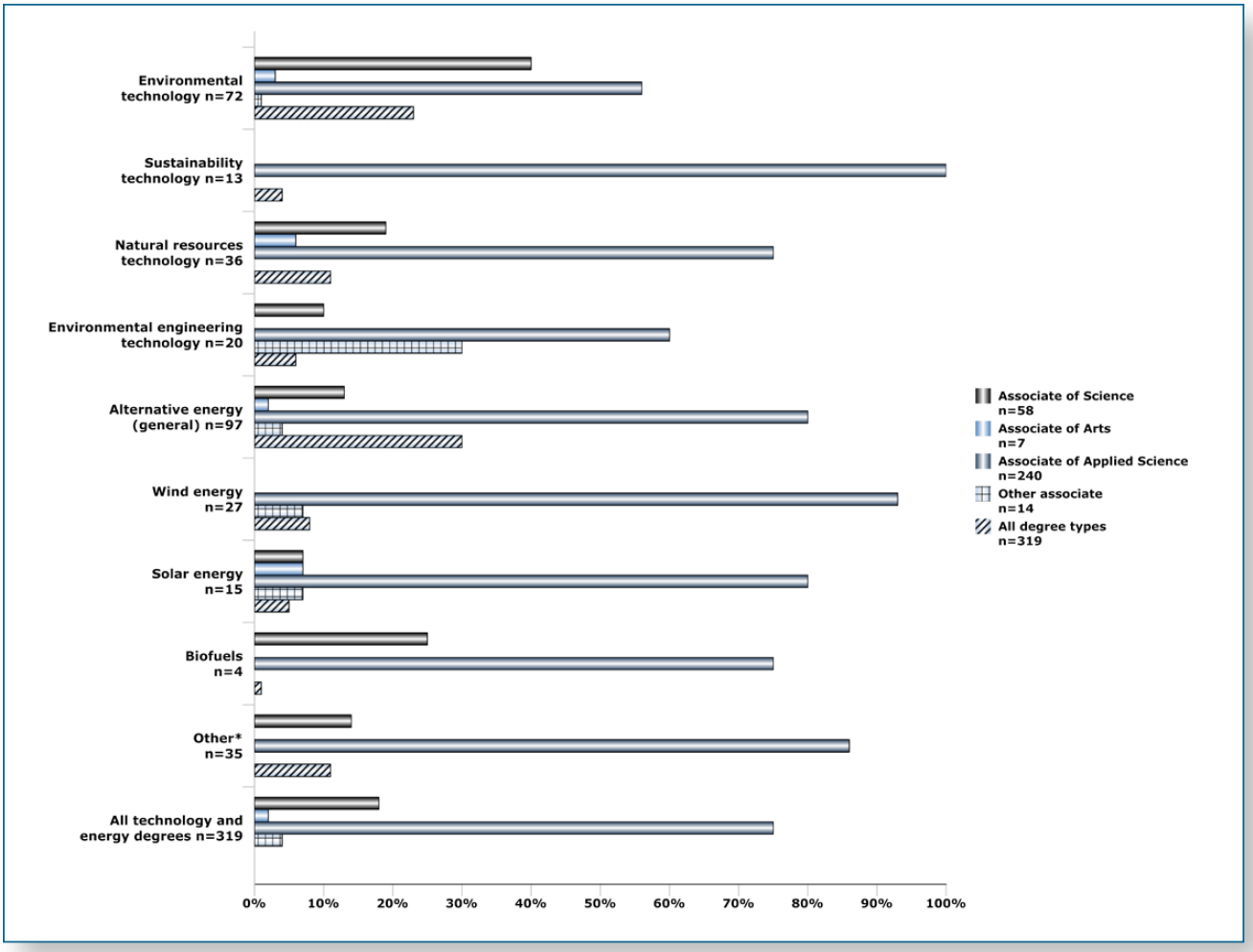
Environmental technology degrees make up the second largest proportion (23%) of technology and energy degrees. While over half (56%) of these degrees are Associate of Applied Science degrees, environmental technology degrees also more likely than other technology and energy degrees to transfer to 4-year institutions; 40% are Associate of Science degrees. These transferable environmental technology degrees offer a mix of career skills and foundation courses for continuing onto bachelor's programs in environmental science(s) or other natural sciences.

Table 6. Technology and energy degrees' names and types

Technology and energy degree name subcategory	Associate of Science n=58	Associate of Arts n=7	Associate of Applied Science n=240	Bachelor's n=0	Other associate n=14	Total n=319	Proportion of all technology and energy degrees
Environmental technology	29	2	40	0	1	72	23%
Sustainability technology	0	0	13	0	0	13	4%
Natural resources (forestry/fisheries/ wildlife) technology	7	2	27	0	0	36	11%
Environmental engineering technology	2	0	12	0	6	20	6%
Alternative energy (general)	13	2	78	0	4	97	30%
Wind energy	0	0	25	0	2	27	8%
Solar energy	1	1	12	0	1	15	5%
Biofuels	1	0	3	0	0	4	1%
Other*	5	0	30	0	0	35	11%

*Includes program names with agriculture, compliance, construction, freshwater, health/safety, marine

Figure 9. Technology and energy degrees' names and types



*Includes program names with agriculture, compliance, construction, freshwater, health/safety, marine

Similar to broad IES degrees, over a third (39%) of technology and energy degrees are located under offices of academic affairs or instruction (Figure 10). Traditional colleges, schools, or divisions and traditional departments house another 26% and 17%, respectively. Small numbers of technology and energy degrees are housed in departments with names reflecting foci on IES (19), technology (11), or energy (6). Only 7% of these degrees are housed in IES academic units.

Institutes and centers administering technology and energy degrees are most likely to be institutes and centers focused on energy. Examples include the Center for Sustainability and Alternative Energy at Burlington County College in New Jersey, which offers an Associate of Science in Sustainable Energy Studies and an Associate of Applied Science in Renewable Energy Technology, and the Missouri Alternative and Renewable Energy Technology Center at Crowder College in Missouri, which offers a degree in Alternative Energy either as an Associate of Arts or an Associate of Applied Science as well as an Associate of Science in Pre-Engineering with an emphasis on Alternative Energy.

Figure 10. Technology and energy degrees' administrative locations

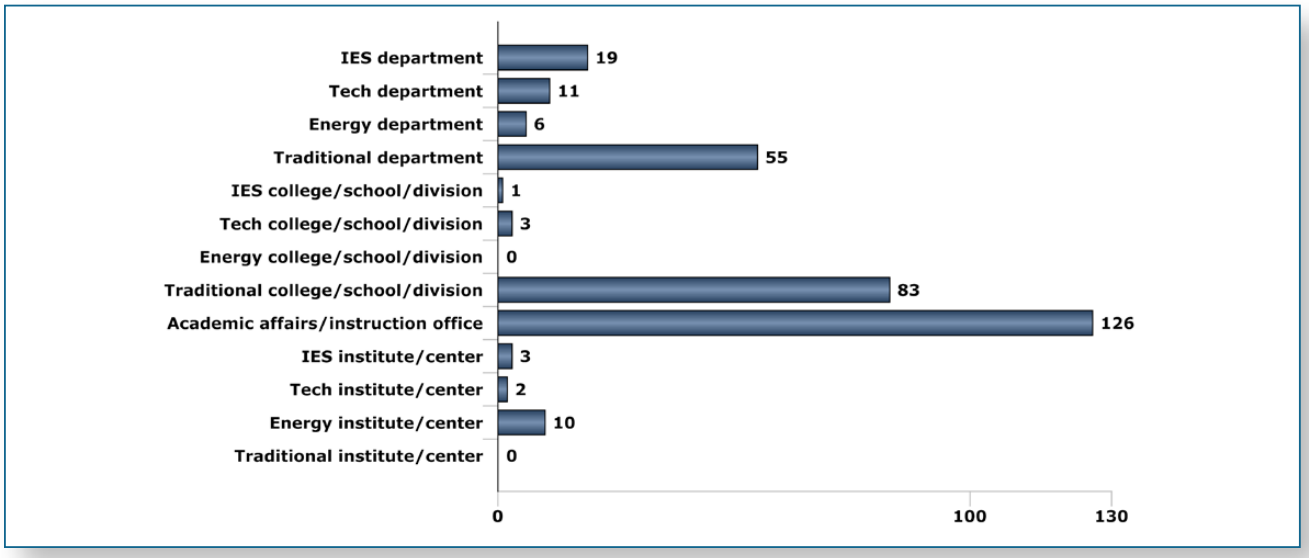


Table 7. IES academic units offering technology and energy degrees by Carnegie associate degree-granting institution type n=15

Public rural-serving small n=1
Department of Forest Management Technology (Montgomery Community College)
Public rural-serving medium n=2
Department of Forestry and Natural Resources (Columbia College)
Department of Natural Resources (Grays Harbor College)
Public rural-serving large n=3
Department of Forestry and Natural Resources (College of the Redwoods)
Department of Natural Resources and Forestry Science (Shasta College)
Institute for Sustainable Practices (Lane Community College)
Public suburban-serving single campus n=2
Department of Environmental Conservation/Horticulture (Finger Lakes Community College)
Department of Environmental Sciences (Rio Hondo College)
Public suburban-serving multicampus n=2
Department of Environmental Studies (De Anza College)
Department of Natural Resources (Lake-Sumter Community College)
Public urban-serving multicampus n=1
Department of Environmental Programs (Hillsborough Community College)
Public 2-year colleges under 4-year universities n=1
College of Food, Agricultural, and Environmental Sciences (The Ohio State University Agricultural Technical Institute)
Public 4-year primarily associate n=2
Department of Forest Resources (Abraham Baldwin Agricultural College)
Institute of Marine and Environmental Studies (Daytona State College)
Tribal colleges n=1
Department of Tribal Environmental Science (United Tribes Technical College)

Other Related Disciplines and Fields Degrees

The 214 degrees in other related disciplines and fields indicate the prevalence of environmental and sustainability foci in community college curricula, including business, health and safety, geosciences, and engineering. The largest proportion of these degrees are in the area of forestry (29%), of which 56% are Associate of Science and 25% are Associate of Arts degrees (Table 8; Figure 11). Also making up large proportions are degrees in sustainable agriculture, horticulture, and landscape (19%); degrees in fisheries and wildlife conservation (12%), and degrees in developing sustainable communities and the built environment (10%).

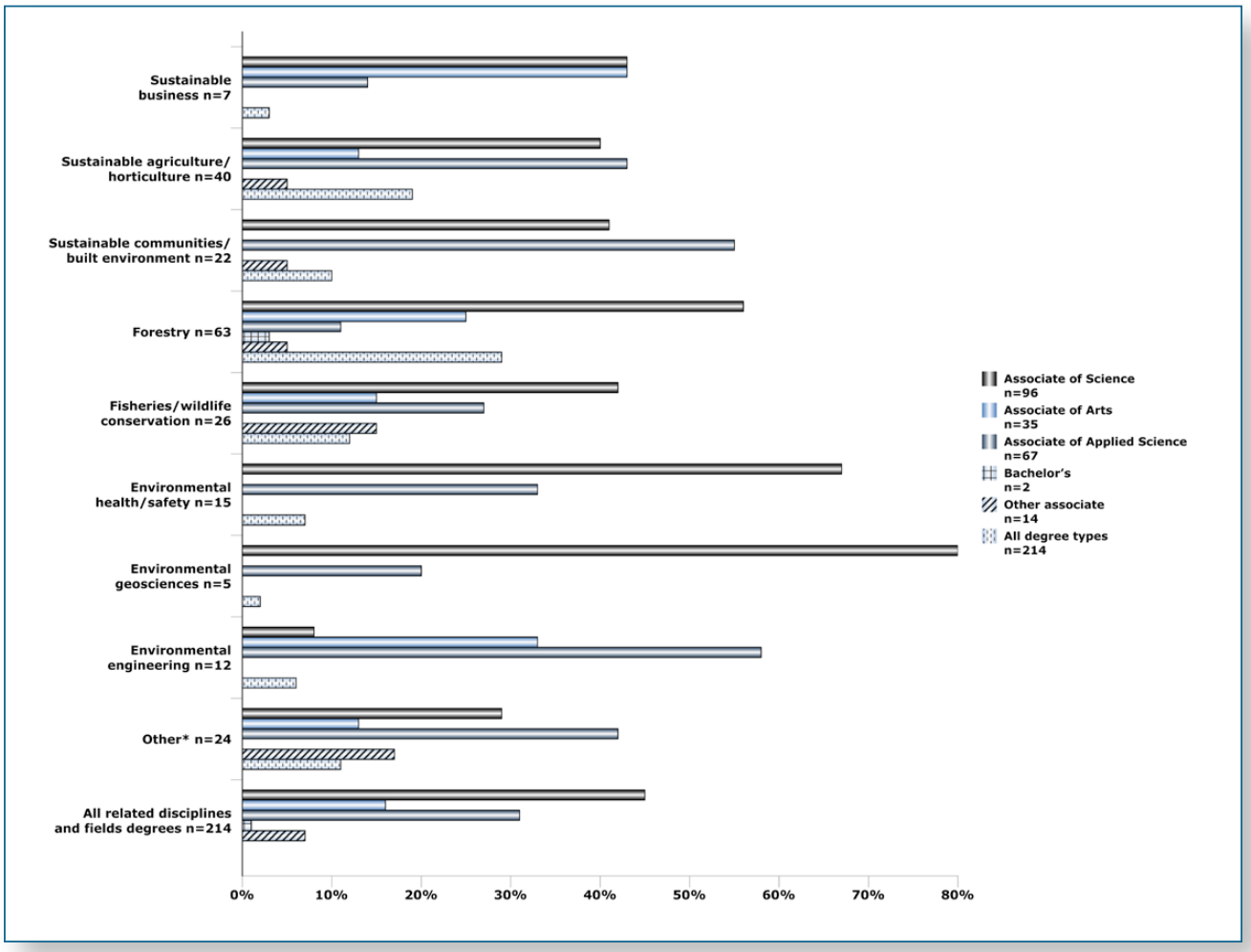
Other related disciplines and fields degrees tend to be Associate of Science degrees (45%), though nearly a third are Associate of Applied Science degrees (31%) which typically prepare students for careers after program completion. Bristol Community College in Massachusetts offers a major in Sustainable Agriculture yielding an Associate of Science degree that not only transfers to baccalaureate programs, but also prepares students for immediate employment in a number of agricultural professions and results in students' eligibility to serve as agricultural volunteers in the Peace Corps. Degrees in the areas of environmental engineering (58%) and sustainable communities and the built environment (55%) are more likely than other degrees in this name category to be Associate of Applied Science degrees.

Table 8. Other related disciplines and fields degrees' names and types

Other related disciplines and fields degree name subcategory	Associate of Science n=96	Associate of Arts n=35	Associate of Applied Science n=67	Bachelor's n=2	Other associate n=14	Total n=214	Proportion of all other related disciplines and fields degrees
Sustainable business	3	3	1	0	0	7	3%
Sustainable agriculture/horticulture	16	5	17	0	2	40	19%
Sustainable communities/built environment	9	0	12	0	1	22	10%
Forestry	35	16	7	2	3	63	29%
Fisheries/wildlife conservation	11	4	7	0	4	26	12%
Environmental health/safety	10	0	5	0	0	15	7%
Environmental geosciences	4	0	1	0	0	5	2%
Environmental engineering	1	4	7	0	0	12	6%
Other*	7	3	10	0	4	24	11%

*Includes program names with cuisine, education, freshwater, law enforcement, tourism

Figure 11. Other related disciplines and fields degrees' names and types



*Includes program names with cuisine, education, freshwater, law enforcement, tourism

Similar to all other IES and related degrees, degrees in other related disciplines and fields are most often found under offices of academic affairs or instruction (Figure 12). Traditional colleges, schools, or divisions and traditional departments also house significant proportions of these degrees. An example is the School of Engineering, Design, and Construction at Seminole State College of Florida, which offers an Associate of Arts in Environmental Engineering. Out of the three name categories, other related disciplines and fields degrees have the highest proportion (17%) of degrees housed in IES academic units (10% in IES departments; 3% in IES colleges, schools, or divisions; and 4% in IES institutes and centers). IES departments housing 21 of these degrees included departments for agriculture, forestry, and natural resources focused on the environment and/or sustainability, such as the Department of Agriculture/Natural Resources at Santa Rosa Junior College in California, which offers an Associate of Science in Sustainable Agriculture.

Figure 12. Other related disciplines and fields degrees' administrative locations

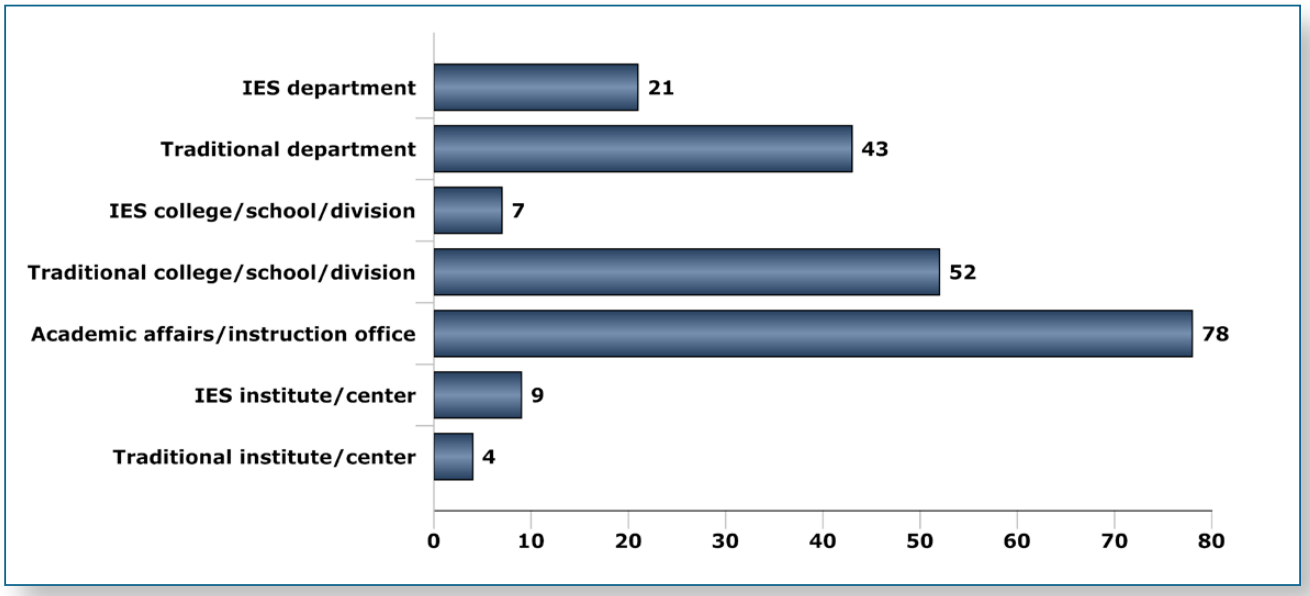


Table 9. IES academic units offering other related disciplines and fields degrees by Carnegie associate degree-granting institution type n=21

Public rural-serving medium n=6
Department of Forestry and Natural Resources (Columbia College)
Department of Landscape and Environmental Design (New Hampshire Technical Institute, Concord's Community College)
Department of Natural and Industrial Resource (Central Oregon Community College)
Department of Natural Resources (Treasure Valley Community College)
Department of Natural Resources Technology (Horry-Georgetown Technical College)
Great Lakes Water Studies Institute (Northwestern Michigan College)
Public rural-serving large n=5
Department of Agriculture/Natural Resources (Santa Rosa Junior College)
Department of Forestry and Natural Resources (Modesto Junior College)
Department of Natural Resources and Forestry Science (Shasta College)
School of Natural Resources (Hocking College)
Institute for Sustainable Practices (Lane Community College)
Public suburban-serving single campus n=3
Department of Environmental Conservation/Horticulture (Finger Lakes Community College)
Department of Environmental Science (Brookdale Community College)
Department of Sustainable Energy Studies (Southwestern College)
Public suburban-serving multicampus n=2
Department of Environmental Studies (De Anza College)
Green Construction and Energy Center (Palm Beach State College)

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Public urban-serving multicampus n=2
Department of Agriculture and Natural Resources (Pierce College)
Department of Agriculture and Natural Resources (Reedley College)
Public 2-year colleges under 4-year universities n=1
College of Food, Agricultural, and Environmental Sciences (The Ohio State University Agricultural Technical Institute)
Public 4-year primarily associate n=1
Department of Forest Resources (Abraham Baldwin Agricultural College)
Tribal colleges n=1
Department of Tribal Environmental Science (United Tribes Technical College)

How many IES and related institutes and centers are there, and where are they located?

A total of 50 IES and related institutes and centers were found throughout the U.S., mostly in the southern half of the country, specifically in the South Atlantic division, which has 30%. Florida, one of the South Atlantic states, has 14% of all identified institutes and centers (Figure 13; Table 10). Only 23 states were found to have at least one IES and related institute or center. The New England and East South Central divisions have one each: the Center for Environmental Sciences and Engineering at the University of Connecticut Waterbury and the Alabama Center for Excellence in Clean Energy Technology at Calhoun Community College.

Figure 13. Number of IES and related centers by state

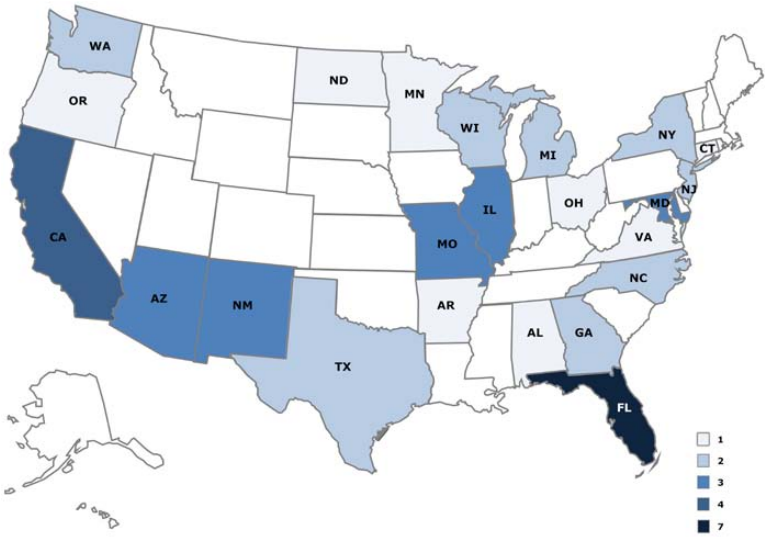

Table 10. IES and related institutes and centers by census division

Census division	General environmental and sustainability n=18	Natural systems n=4	Energy and climate change n=14	Societal systems n=4	Technology and informatics n=5	Human wellbeing n=5	Total n=50	Proportion of all institutes and centers
New England	-	-	-	-	1	-	1	2%
Middle Atlantic	1	-	2	-	-	1	4	8%
East North Central	5	1	1	-	-	1	8	16%
West North Central	1	-	2	1	-	1	5	10%
South Atlantic	4	1	3	2	3	2	15	30%
East South Central	-	-	1	-	-	-	1	2%
West South Central	1	-	2	-	-	-	3	6%
Mountain	2	-	3	-	1	-	6	12%
Pacific	4	2	-	1	-	-	7	14%

NCSE's recent report on IES and related institutes and centers at research universities found that IES and related institutes and centers fall into 7 broad categories based on their names and primary foci (Vincent et al., 2014).[8] These categories were used to categorize institutes and centers at community colleges. General environmental and sustainability institutes and centers have a broad focus on environment and/or sustainability and may target a particular place, region, or biome. The other categories are institutes and centers that focus on natural systems such as aquatic systems or forests; energy and climate change; societal systems such as environmental policy or law; technology and informatics; and human wellbeing such as risk assessment or sustainable agriculture. The seventh category, IES and related institutes and centers focusing on sustainable built environments, was not represented among the institutes and centers identified in the census on community colleges.

Most IES and related institutes and centers (36%) have a general environmental and sustainability focus, and over a quarter (28%) have an energy and climate change focus (Figure 14). Institutes and centers focused on technology and informatics and human wellbeing are equally represented (10%) each, as are those focused on natural systems and societal systems (8%) each. Examples include:

- The Institute of Florida Studies at Hillsborough Community College (general environmental and sustainability) promotes Florida's environmental systems and natural history through education, training, research, and information. The Institute offers non-credit courses for both Water and Wastewater Treatment Operators "C" Licenses, as well as outdoor recreation and service programs for the local community.
- The Institute of Marine and Environmental Studies at Daytona State College in Florida (natural systems) primarily provides educational enrichment and field experiences, offering Associate of Arts degrees in Environmental Science, Marine Science, Marine Biology, and Ocean Engineering, as well as an Associate of Science in Environmental Science Technology.
- The Energy Institute at Houston Community College's Northeast College in Texas (energy and climate change) offers industry-specific credit programs in energy and related industries, including certificates in solar and wind energy technology.
- The Institute for Sustainable Practices at Lane Community College in Oregon (societal systems) works on improving sustainability in educational and operational practices, administering a Recycling Education Center, a Learning Garden, and five Associate of Applied Science degrees: Energy Management, Renewable Energy Technology, Resource Conservation Management, Water Conservation Technology, and Sustainability Coordinator.
- The Global Institute for Sustainability Technologies at Asheville-Buncombe Technical Community College in North Carolina (technology and informatics) engages communities throughout its region to advocate for sustainable technologies, practices, and education initiatives.
- The Spencer Crest Nature Center at Corning Community College (human wellbeing) provides environmental, educational, and recreational activities for the greater community on 250 acres and 7 miles of trails with ponds, a stream, and a museum of natural systems.

8. For more information on the study on IES and related institutes and centers at research universities, see Vincent, S., R. Santos, and L. Cabral. 2014. *Interdisciplinary Environmental and Sustainability Education and Research: Institutes and Centers at Research Universities.* National Council for Science and the Environment.

Figure 14. IES and related institutes and centers' categories

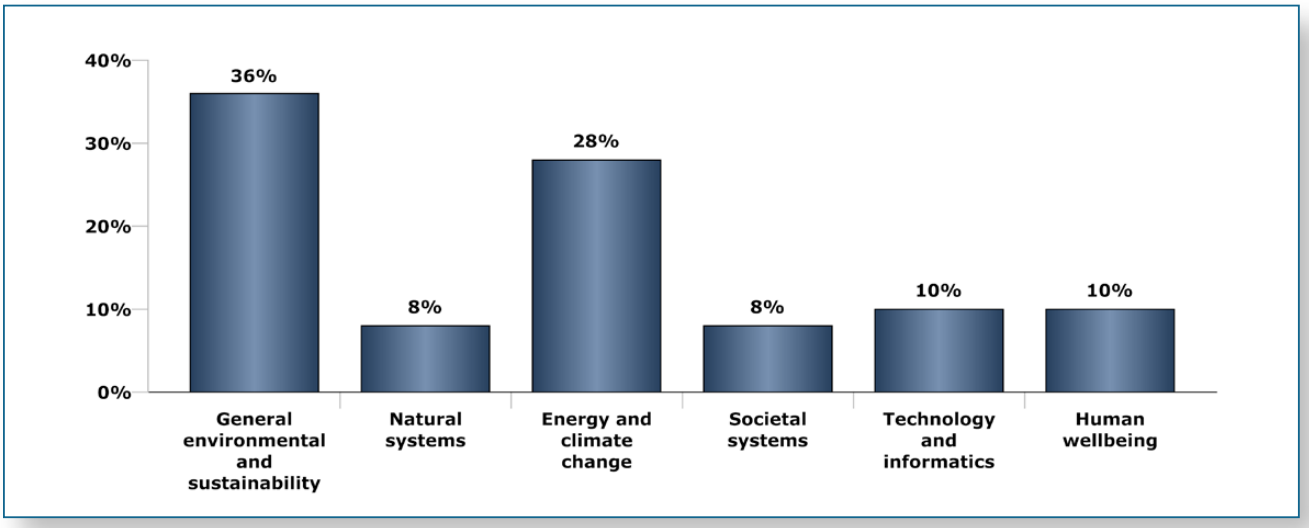

Table 11. IES and related institutes and centers by Carnegie associate degree-granting institution type n=50

Public rural-serving small n=2
Green Industries Institute (North Florida Community College)
North American Wind Research and Training Center (Mesalands Community College)
Public rural-serving medium n=7
High Sierra Institute (Columbia College)
Center for Energy Workforce Development (Okefenokee Technical College)
Center for Leadership in Environmental Education (Chesapeake College)
Environmental Center (Lake Michigan College)
Great Lakes Water Studies Institute (Northwestern Michigan College)
Missouri Alternative and Renewable Energy Technology Center (Crowder College)
Spencer Crest Nature Center (Corning Community College)
Public rural-serving large n=14
Alabama Center for Excellence in Clean Energy Technology (Calhoun Community College)
Green Steps Sustainability Initiatives (Cabrillo College)
Institute for Community Advancement (College of Central Florida)
The Green Institute (Heartland Community College)
The John A. Logan Sustainability Center (John A. Logan College)
Institute for Climate Education (Asheville-Buncombe Technical Community College)
Global Institute for Sustainability Technologies (Asheville-Buncombe Technical Community College)
EnergySmart Academy and Center of Excellence for Green Building and Energy Efficiency (Santa Fe Community College)
Sustainable Technologies Center (Santa Fe Community College)
Energy Institute (Hocking College)
Institute for Sustainable Practices (Lane Community College)
Lamar Bruni Vergara Environmental Science Center (Laredo Community College)

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William A. Grant Water and Environmental Center (Walla Walla Community College)
Center for Sustainable Living (Gateway Technical College)
Public suburban-serving single campus n=3
National Great Rivers Research and Education Center (Lewis and Clark Community College)
The Environmental Center (Anne Arundel Community College)
Energy Institute (Salem Community College)
Public suburban-serving multicampus n=4
Kirsch Center for Environmental Studies (De Anza College)
Southern Maryland Studies Center (College of Southern Maryland)
Center for Sustainability and Alternative Energy (Burlington County College)
Marine Science and Technology Center (Highline Community College)
Public urban-serving multicampus n=7
Energy Institute (Estrella Mountain Community College)
Oxnard College Marine Education Center and Aquarium (Oxnard College)
Institute of Florida Studies (Hillsborough Community College)
Institute for Workforce Innovation (Metropolitan Community College)
Institute for Interdisciplinary and Global Studies (St. Louis Community College)
Energy Institute (Houston Community College's Northeast College)
Center for Geospatial and Engineering Technologies (J. Sargeant Reynolds Community College)
Private not-for-profit n=1
Golisano Institute for Sustainability (National Technical Institute for the Deaf)
Public 2-year colleges under 4-year universities n=1
Center of Excellence in Renewable Energy Technology Education (Phillips Community College of the University of Arkansas)
Public 4-year primarily associate's n=7
Center for Environmental Sciences and Engineering (University of Connecticut)
Environmental Center (Miami Dade College)
Institute of Marine and Environmental Studies (Daytona State College)
Employ Florida Banner Center for Energy (Indian River State College)
Earth Ethics Institute (Miami Dade College)
The Lewis F. Rogers Institute for Environmental and Spatial Analysis (University of North Georgia)
National Energy Center of Excellence (Bismarck State College)
Tribal colleges n=4
Dine Environmental Institute (Dine College)
Navajo Dryland Environments Laboratory (Dine College)
Environmental Institute (Fond du Lac Tribal and Community College)
Sustainable Development Institute (College of Menominee Nation)

Customized Consulting Services

NCSE is the premier organization for insight into the rapidly evolving fields of interdisciplinary environmental and sustainability (IES) education and IES research institutes and centers. NCSE conducts a comprehensive research program that includes national surveys, ongoing literature review, and in-depth work with clients at colleges and universities both large and small. The wealth of data and knowledge gained from NCSE's continuous research provides the basis for a myriad of custom-tailored consulting services designed to help program leaders advance their environmental and sustainability programs. Services include:

- Comparative assessment of an institution's program(s) and programs at peer institutions regionally and nationally. These services provide understanding of how programs compare to those at selected peer institutions and similar programs across the U.S.
- Strategic program assessment that provides effective and innovative strategies for positioning and advancing program(s) in the national IES education and research landscape. These services include recommendations on:
  - Administrative program location, management, and structure.
  - Overall institutional positioning and opportunities.
- Insights into curriculum and program design, including degree programs and integrating sustainability across the curriculum. These services are tailored to institutional needs and include:
  - Workshops and empirical processes (e.g., to reveal the number of perspectives and their commonalities and differences regarding decisions) to facilitate and support decision-making.
  - Recommendations for new programs (including proposal review) and revisions to existing programs.

The prices for consulting services are significantly discounted for NCSE University Affiliates. Please contact Dr. Shirley Vincent for a customized quote or more information on how NCSE's research and data can help you competitively position your program in the national IES education and research landscape.

Shirley Vincent, Ph.D.
NCSE Director of Education Research
svincent@ncseonline.org
918-629-5143

Testimonials from Clients

"Your report will be of great value to Burlington County College as we proceed to develop an Associate of Science degree in Sustainability – Policy and Management. I found your report to be thorough and balanced, well researched and documented, and presented in manner which led to clear and readily applied recommendations… I am grateful that we have had access to your extensive knowledge and expertise in the interdisciplinary environmental and sustainability education areas."

Robert Brzozowski – Academic Coordinator, Center for Sustainability and Alternative Energy, Burlington County College

"Your cogent analysis of opportunities and challenges provided us with significant data with which to collectively plan for our future as the Environmental Campus of the UMass system…The service you provided to our programs is tremendous…"

Robyn Hannigan – Dean, School for the Environment, University of Massachusetts-Boston

"Your recent evaluation and assessment of the Tufts University Interdisciplinary Environmental Studies Program was invaluable. We have already started to act upon your recommendations….your assessment is being incorporated into our strategic plan."

Colin Orians – Director, Environmental Studies Program, Tufts University

"[Shirley's] report has put our programs into a national context and has provided us with benchmarks that relate our program to the national norms. And, more specifically, it has allowed us to compare our programs to those of our aspirational peer institutions. The detailed quantitative analysis made the document especially compelling and useful in discussions with faculty and other UD administrators."

Nancy Targett – Dean, College of Earth, Ocean, and Environment, University of Delaware

"As a long-term consultant, prior to working in the academic community, I am thoroughly impressed with Shirley's technical skills, timeliness, and ability to stay focused on what is needed for the unique situation at hand. Shirley's professionalism and kind demeanor made a complex and sometimes controversial process easier than one might otherwise find. We owe much of our current progress to [Shirley and NCSE]."

Daniel Carter – Director, Environmental Studies Program, University of the South at Sewanee

Glossary of Terms

Interdisciplinary environmental and sustainability (IES) and related

Indicates an interdisciplinary approach with a focus on environmental and/or sustainability issues, either broadly or within a discipline or professional field

Community college systems (n=1,287)

Primary level associate degree-granting systems that operate under unified leadership, such as a single chancellor or president, but may comprise multiple locations, such as a district with multiple colleges or a college with multiple campuses

Community colleges (n=2,236 used to calculate statistics)

Within a community college system, degree-granting locations named "college" or "campus," not including locations named "center" or other limited-service locations

Institution types of community colleges

Carnegie Classification framework indicating institutional attributes based on Carnegie data from 2010; see classifications.carnegiefoundation.org/descriptions. The framework has been widely used in the study of higher education, both as a way to represent and control for institutional differences, and also in the design of research studies to ensure adequate representation of sampled institutions, students, or faculty.

Census regions and divisions

Groupings of states into 4 regions and 9 divisions as defined by the U.S. Census Bureau; see census.gov/geo/reference/gtc/gtc_census_divreg.html

Type categories of IES and related degrees

Indicate levels of degrees

- Associate of/in Science
- Associate of/in Arts
- Associate of/in Applied Science
- Other associate
- Bachelor's

Formal specializations

Coursework groups listed as specialization options under degrees, such as those named tracks, concentrations, or emphases

Name categories and subcategories of IES and related degrees

Indicate academic foci of degrees

- Broad IES: names indicate general IES foci
    - Environmental science(s)
    - Environmental studies
    - Sustainability (general)
    - Natural resources
    - Marine/coastal
    - Other

NCSE Community College Affiliate Members 2014-2015

Baton Rouge Community College, LA
Bay de Noc Community College, MI
Bristol Community College, MA
Bunker Hill Community College, MA
Cuyahoga Community College, OH
El Centro College, Dallas County Community College District, TX
Foothill College, CA
Georgia Piedmont Technical College, GA
Hillsborough Community College, FL
Houston Community College-Northeast, TX
Indian River State College, FL
Ivy Tech Community College of Indiana-Lafayette, IN
Kapi'olani Community College, HI
Moraine Valley Community College, IL
Prairie State College, IL
Saddleback College, CA
Seminole State College of Florida, FL
South Mountain Community College, AZ
St. Philip's College, Alamo Colleges, TX
University of New Mexico-Gallup, NM

Glossary of Terms, Continued

- Technology and energy: names include "technology/technician" or "energy"
  - Environmental technology
  - Sustainability technology
  - Natural resources (forestry/fisheries/wildlife) technology
  - Environmental engineering technology
  - Alternative energy (general)
  - Wind energy
  - Solar energy
  - Biofuels
  - Other
- Other related disciplines and fields: names include environmental and/or sustainability emphases
  - Sustainable business
  - Sustainable agriculture/horticulture
  - Sustainable communities/built environment
  - Forestry
  - Fisheries/wildlife conservation
  - Environmental health/safety
  - Environmental geosciences
  - Environmental engineering
  - Other

Institutes and centers

Organized research, education, or outreach units, such as those named institutes or centers

Categories of IES and related institutes and centers

Indicate names and primary foci of institutes and centers

- General environmental and sustainability
- Natural systems
- Energy and climate change
- Societal systems
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