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CLASSIFICATION AND CLIMATE ZONE GREENHOUSE GAS INVENTORY BENCHMARKING IN HIGHER EDUCATION

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ABSTRACT

The higher education field lacks benchmarking methods in the area of greenhouse gas emission inventories. This study establishes useful benchmarks by examining the measurable characteristics of climate zone, size, and residential character that affect building energy usage and emissions. Through a quantitative analysis of archival data, the effect of size, climate zone, and residential setting were confirmed for benchmarking validity. Further study could include analysis of other institutional characteristics and classifications or a further breakdown of the current study's characteristics.

Keywords: Greenhouse Gas Inventory, GHG benchmarking, building emissions, higher education benchmarking, American College and University Presidents Climate Committment

Introduction

Benchmarking is an important part of any industry, enabling the members to compare themselves with other institutions and identify best practices to emulate (Arnold, 1998). The higher education field lacks benchmarking methods in the area of greenhouse gas emission inventories. This study provides a framework establishing useful benchmarks for colleges and universities and the influence of climate zone, size (number of students), and residential character on greenhouse gas emission inventories was investigated.

Background

Francis Bacon (1973) said, "Knowledge is power" (p. 23). This is a powerful idea in that the more information a person has, the more insightful decisions they can make. Knowledge management is the practice of generating new knowledge, accessing valuable knowledge from outside sources, using this knowledge in decision making, and entrenching this knowledge in processes, products, and services to improve the business (Knowledge Management Gateway, 2008). An important component of knowledge management is the practice of benchmarking. By comparing cost, processes, or policies to another similar organization, the institution can make decisions on how make improvements or adopt best practices. In the case of greenhouse gas emission inventories in higher education, a benchmarking study has never been performed due to the lack of inventories available and the diversity of the institutions represented. This study does not an attempt to rank the institutions on their sustainability levels. The study addresses the need for benchmarking guidance so that the institutions can identify peers with the best practices, enabling the sharing of information and improvement of efficiencies.

On average, over half of an institution's greenhouse gas emission (GHG) inventory is comprised of building energy usage (American College and University Presidents Climate Committment, 2010). There are three major measurable influences on building energy usage on college and university campuses. One of the most influential factors affecting energy usage is the climate zone of the institution, which affects building and energy code (Institute for Sustainable Energy, 2006). The second and third influential factors are covered by the "size and setting" Carnegie classification (The Carnegie Foundation for the Advancement of Teaching, 2007). The size of the institution is the number of full-time students enrolled. It can be the difference between a small college of 1,000 students and a large university of 30,000 students, resulting in fewer or more buildings needed to fulfill the mission of the institution. The setting of the institution is defined by the percentage of students that physically reside on campus. The difference would be a commuter college that has no residence halls compared to a highly residential college where 90% of the students live on campus (The Carnegie Foundation for the Advancement of Teaching, 2010a).

Nature of the Study

This study is a quantitative analysis of archival data. The American College and University Presidents Climate Commitment consists of over 600 institutions that must perform a GHG inventory within the first year of the commitment. To have a larger pool of inventories within each climate zone, all of the available GHG inventories from the institutions will be used. Depending on how many are available at the time of data collection, the number of inventories will range from 550 to 600. The study will focus on "Scope 1 and 2" emissions due to their direct correlation with building energy usage (Pew Center on Global Climate Change, 2009). The data was analyzed by identifying the emissions by square foot of building and by full-time equivalent (FTE) number of students. This breakdown of the data is an accepted method of benchmarking in higher education (National Center for Education Statistics, 2010).

Permission is not needed to collect the GHG inventories from the AASHE website. Part of the climate commitment is the promise to "make the inventory reports publicly available by providing them to AASHE for posting and dissemination" (Association for the Advancement of Sustainability in Higher Education, 2008, p. 1). This dissemination makes the inventories public record.

The data was collected using a systematic process. The GHG inventory information (scope one and two emissions, student full time enrollment (FTE), and square feet of building) were taken off the AASHE reporting system website and entered into a spreadsheet (Association for the Advancement of Sustainability in Higher Education, 2008). The GHG inventory chosen will be the institution's first inventory, ranging from 1990 to 2010. The location of the institution was compared with the climate zone map provided by the Department of Energy (2009) and the climate zone was entered into the same spreadsheet. The "size and setting" classification data was taken from the Carnegie website and entered into the spreadsheet (The Carnegie Foundation for the Advancement of Teaching, 2007). Exclusion of ACUPCC institutions resulted from a lack of available classification or incomplete GHG data.

The data analysis was performed in stages. First, the spreadsheet was sorted by "size and setting". Averages of emissions were calculated in each "size and setting" variable. The averages were also broken down by emissions per FTE student and per square foot of building. The second stage of analysis re-sorted the data according to the variables of "size and setting" and climate zone. The data was then imported into a statistical analysis program. The program used the multivariate analysis of variance to examine if the climate zone and "size and setting" variables have an additive or interactive effect on the emissions.

Research Questions

The following questions guided the analysis of the greenhouse gas emission inventories. Does the "size and setting" classification have an effect on the institution's greenhouse gas emissions inventory? Does the climate zone have an effect on the institution's greenhouse gas emissions inventory?

Limitations

As stated on the ACUPCC website, the diverse nature of higher education institutions makes comparisons difficult (American College and University Presidents Climate Committment, 2010). Some institutions were excluded because Carnegie data was unavailable. The "size and setting" Carnegie classification should be the same as the institutions' makeup in the year of the GHG inventory. The Carnegie Foundation for the Advancement of Teaching (2007) only updates the classification data every 6-7 years so the inventory could have been completed in a different year as the classification process. The most influential factors on building energy use were chosen based upon years of facility and sustainability management experience, but that does not mean that other classification factors may also have influence.

There may be some slight differences in GHG emissions from different years, depending on which version of GHG calculator used. Clean Air-Cool Planet (2010), the developer of the calculator, has made improvements to their methods and the Environmental Protection Agency has enhanced its published emissions factors over the years so the methods for calculating a greenhouse gas emission inventory have improved over time. Another limitation is that it is assumed that institutions do not take active steps to reduce emissions before measuring its greenhouse gas emissions for the first time. Once an inventory has been completed, the school usually will take active steps to reduce its energy usage. Therefore, the institution's first published GHG inventory on the AASHE website, no matter the year, will be the one collected for study.

Delimitations

Whereas this study is a quantitative analysis of archival data, the reliability is high. The number of institutions in the ACUPCC represents approximately 15% of colleges and universities in the United States. Depending on how many institutions are in each climate zone, the generalizability differs in each category. For example, climate zone 1A consists of southern Florida and Hawaii. The number of ACUPCC institutions in this climate zone may be too small for a statistically significant analysis. In contrast, the generalizability in climate zone 4A and 5A should be high because over 50% of the ACUPCC institutions reside in these two climate zones.

LITERATURE REVIEW

The purpose of this study is to provide an approach for benchmarking greenhouse gas emission inventories in higher education institutions by analyzing the affect of climate zones and size and setting classifications on greenhouse gas emissions. Because this type of study has not been performed in the past, there are no similar greenhouse gas emission inventory benchmarking studies to analyze. The literature review examines the components of the study; Carnegie classifications, greenhouse gas emission inventories, climate zones, and the benchmarking of GHG inventories in other fields.

Carnegie Classification

Since the late 1970s, higher education has been improving the way institutions are classified and described. The Carnegie Foundation for the Advancement of Teaching (CFAT) (2007) has been in the forefront of this process since the early 1980s. The classification system developed by the CFAT has been widely utilized to study the field of higher education by representing and organizing institutional differences. It was developed to identify meaningful institutional groupings to be used in service of education research and policy development. It assists researchers in representing the sampled institutions, students, and faculty in a well organized and proper manner. The system is organized through six all-inclusive classifications; undergraduate instructional program, graduate instructional program, enrollment profile, undergraduate profile, size and setting, and basic (The Carnegie Foundation for the Advancement of Teaching, 2010c).

The classification pertinent to this study is the "size and setting" classification. This classification describes the "institutions' size and residential character" (The Carnegie Foundation for the Advancement of Teaching, 2010a). According to the foundation, size is perhaps the most influential variable in the framework as size influences institutional structure, complexity, culture, finances, and other factors. The residential character of the institution is possibly the second most influential factor in energy use, as it reflects the amount of buildings needed to fulfill its educational mission and the variety of programs that an institution provides.

Several measurements create the "size and setting" classification. The first measurement is the "level of institution" in which the institutions are identified by the degree programs in length of time. If the institution awarded less than a bachelor's degree, it was identified as a two-year institution. Four-year institutions are identified by the offering of bachelor's degrees and higher. The flow chart in Appendix A illustrates the categories within the classification.

The second measurement is the "enrollment size". Full-time equivalent (FTE) enrollment is based on a calculation of a full-time student plus a one-third part-time student (The Carnegie Foundation for the Advancement of Teaching, 2010a). For two-year colleges, enrollment is based on all undergraduates, as shown in Table 1. For four-year institutions, it is based on degree-seeking students at all levels.

Table 1

Carnegie Size and Setting Classifications: Two-Year Institutions

Category	Description	FTE Enrollment
VS2	Very small two-year	< 500
S2	Small two-year	500–1,999
M2	Medium two-year	2,000–4,999
L2	Large two-year	5,000–9,999
VL2	Very large two-year	≥ 10,000

Note. Adapted from The Carnegie Foundation for the Advancement of Teaching. (2010a). *Size & setting classification.* Retrieved from Classification description: http://classifications.carnegiefoundation.org/descriptions/size_setting.php

The third measurement is the "residential character" of the institution. It is based on two attributes; the proportion of undergraduates who attend full-time, and the proportion of undergraduates who live in institutionally-owned or -affiliated housing. Institutions with less than 25% of undergraduates living on campus were classified as primarily nonresidential. Institutions where at least half of degree-seeking undergraduates live on campus and where at least 80% attend full-time were classified as highly residential. The remaining four-year institutions were classified as primarily residential. Where few two-year institutions serve a residential population, these institutions are classified solely on FTE enrollment, as shown in Table 2. (The Carnegie Foundation for the Advancement of Teaching, 2010b)

Table 2

Carnegie Size and Setting Classifications: Four-Year Institutions

Category	Description	Residential Status	FTE Enrollment
VS4/NR	Very small four-year	Primarily nonresidential (< 25%)	< 1,000
VS4/R	Very small four-year	Primarily residential (25-49%)	< 1,000
VS4/HR	Very small four-year	Highly residential (≥ 50%)	< 1,000
S4/NR	Small four-year	Primarily nonresidential (<25%)	1,000–2,999
S4/R	Small four-year	Primarily residential (25-49%)	1,000–2,999
S4/HR	Small four-year	Highly residential (≥ 50%)	1,000–2,999

M4/NR	Medium four-year	Primarily nonresidential (<25%)	3,000–9,999
M4/R	Medium four-year	Primarily residential (25-49%)	3,000–9,999
M4/HR	Medium four-year	Highly residential (≥ 50%)	3,000–9,999
L4/NR	Large four-year	Primarily nonresidential (<25%)	≥ 10,000
L4/R	Large four-year	Primarily residential (25-49%)	≥ 10,000
L4/HR	Large four-year	Highly residential (≥ 50%)	≥ 10,000

Note. Adapted from The Carnegie Foundation for the Advancement of Teaching. (2010a). *Size & setting classification.* Retrieved from Classification description: http://classifications.carnegiefoundation.org/descriptions/size_setting.php

Greenhouse Gas Emission Inventory

Buildings consume over 50% of all energy generated around the world, and in the United States, 70% of electricity used by buildings is employed to provide air conditioning to the occupants (Roaf, Crichton, & Nicol, 2009). These figures are startling in their percentages and their impact on the environment. The American College & University Presidents Climate Commitment (2010) is an effort for higher education institutions to become more sustainable, reduce energy use, while educating their students in environmentally sound practices. As of January 2011, 676 institutions, representing all 50 states and over five million students have signed the commitment (American College and Univeristy Presidents Climate Committment, 2011). The institutions who have made this commitment are positively affecting one-third of the total student population in the U.S.

To begin the process of planning for climate neutrality, the institutions must perform a greenhouse gas emission inventory within 1 year of signing the commitment. In order to complete a GHG inventory, the institutions need to understand the complexities of the process. An institution must choose a 1-year period to conduct the measurements and be consistent in future years with that time period. Greenhouse gas emission inventories use a standard set of reporting tables, in this instance the Clean Air Cool Planet calculator, so that all relevant gases, categories, and methodologies are consistent (Intergovernmental Panel on Climate Change, 2010). The study will focus on “Scope 1 and 2” emissions due to their direct correlation with building energy usage (Pew Center on Global Climate Change, 2009).

Climate Zones

A climate zone is an area or region that “shares the same weather conditions as measured by temperature, air pressure, precipitation, humidity, sunshine, cloudiness, and winds, averaged over a series of years” (Department of Energy, 2009). Climate zones have an important affect on energy usage, in turn affecting greenhouse gas emissions. Federal, state, and local energy and building codes are based on climate zones.

The climate zone classification adopted by the U.S. Department of Energy (2009) in 2004 divides the country into 8 temperature zones and 3 humidity subzones. This division results in 17 possible climate zones for the United States. The humidity subzones (humid, dry, and marine) are an important part of the climate zone classification as they have an effect on several types of energy related performance measures (Briggs, Lucas, & Taylor, 2002).

Table 3

United States Climate Zones

Zone No.	Climate Zone Name and Type	Representative City
1A	Very Hot – Humid	Miami, FL
1B	Very Hot – Dry	NA
2A	Hot – Humid	Houston, TX
2B	Hot – Dry	Phoenix, AZ
3A	Warm – Humid	Memphis, TN
3B	Warm – Dry	El Paso, TX
3C	Warm – Marine	San Francisco, CA
4A	Mixed – Humid	Baltimore, MD
4B	Mixed – Dry	Albuquerque, NM
4C	Mixed – Marine	Salem, OR
5A	Cool – Humid	Chicago, IL
5B	Cool – Dry	Boise, ID
5C	Cool-Marine	NA
6A	Cold – Humid	Burlington, VT
6B	Cold – Dry	Helena, MT
7	Very Cold	Duluth, MN
8	Subarctic	Subarctic

Note. Adapted from Briggs, R., Lucas, R., & Taylor, Z. T. (2002, March 26). *Climate classification for building energy codes and standards.* Retrieved from Department of Energy Building Energy Codes Program: http://www.energycodes.gov/implement/pdfs/climate_paper_review_draft_rev.pdf.

Climate has an important measurable effect on building energy use. Architects have been aware of this affect for years. Olgyay (1963) wrote about climate objectives for building architects, designers, and engineers for each climate region.

- Cool regions: increase heat production, radiation absorption, decrease radiation loss.
- Temperate regions: balance between heat production, radiation, and convection effects on a seasonal basis.
- Hot-Arid regions: reduce heat production, conduction gain, promote evaporation and loss of radiation.
- Hot-Humid regions: reduce heat production and radiation gain, promote evaporation loss.

These climate objectives affect many things, such as the house shape, window structure, insulation requirements, roof composition, and foundation makeup. No matter what the climate, the ideal house shape should minimize heat gain in the summer and heat loss in the winter. In temperate zones, the house should face the equator to collect winter sun, have shade to block the summer sun, and be well-ventilated for the summer (Hyde, 2008). Energy code requirements differ according to the eight climate zones, as shown in climate zone building requirement map in Appendix D.

Many studies indicate that climate zone affects energy use, which in turn affects energy and building code requirements. Mago, Chamra, and Huffed (2009) conducted a study on the performance of "combined heating and power" systems in different locations and climates and found that the energy efficiency performance was directly related to the climate zone. Kunchornrat, Namprakai, and du Pont (2009) studied climate zone influence in Thailand and found that the temperature zone affected energy conservation measures, thermal comfort and outdoor design conditions. Munther Salim (2009) studied energy use in computer data centers and found that the location's type of climate (dry, moist, or marine) made a significant difference in energy usage.

Benchmarking GHG Inventories

Awareness of greenhouse gases and their affect on the planet is on the rise, but Harvey and Grimm (2009) believed there is a lack of tools and references in this field to help institutions reach emission reduction benchmarks. In 2009, they presented a carbon emissions performance standard for basic building types using budgets for specific climate zones. The standard was based on climate zone and building type. Harvey and Grimm's (2009) intent for the new performance measure was if a company had a standard type of building (similar to the Department of Energy's Energy Star building types) the company could look at this carbon performance standard and estimate GHG emissions without having to perform an actual GHG inventory.

There is a need for more comprehensive benchmarking within different sectors of the economy and an exploration of how to account for diversity. The Association of Higher Education Facilities Officers (AHEFO) recognizes the need for a campus energy performance database. In a study performed for AHEFO, Medlin (2007) stated, "Goal-setting is blind without a reference, energy costs are becoming a greater portion of campus operating costs, institutions are missing substantial potential energy-reduction opportunities, and energy conservation needs analysis" (p. 18). In 2009, the U.S. Environmental Protection Agency (EPA), U.S. Energy Information Administration, and the U.S. Treasury formally recognized the need for more comprehensive production, energy, and emissions data to developing greenhouse gas benchmarks (SEI, Ross & Associates, and Oko-Institut, 2010b).

Several industries have led the charge to create standards in their field to assess GHG emissions. For example, in the global cement industry, companies share data on emissions per ton of cement so they can compare the efficiency of their manufacturing plants. The steel, aluminum, and petroleum refining industries have created similar benchmarks (SEI et al., 2010b). The use of benchmarks to improve energy efficiency has been an accepted practice in these industries for many years while the use of GHG benchmarks is still in development. The AHEFO has recently added energy benchmarking to their annual Facilities Core Data Survey, resulting in annual Facilities Performance Indicators, but it has not gone as far as to add greenhouse gases (Medlin, 2007). Table 4 summarizes several of the industries in the process of developing GHG benchmarks and how they may use them.

Table 4

Industry GHG Energy Benchmark Programs

Sector	**Program**	**Use of benchmark**	**Basis for benchmark**
Cement	Cement Sustainability Initiative	Voluntary industry comparison	Average of existing facilities
Steel	International Iron and Steel Institute EcoTech program	Voluntary industry comparison	Hypothetical plant employing commercially available, cost-effective energy-saving technologies

Aluminum	Proposed European Union Benchmark for primary aluminum	Basis for allocating emissions allowances	Top 10% most carbon-efficient installations in Europe
Electricity	Clean Development Mechanism	Baseline against which emission reductions are estimated	Standardized baseline methodology based on local power plant data and plans
Various	U.S. EPA Energy Star	Basis for awarding Energy Star label/designation	Top 25th percentile of energy performance

Note. Adapted from SEI, Ross & Associates, and Oko-Institut. (2010b, June 30). *Issues and options for benchmarking industrial ghg emissions.* Retrieved from Washington State Department of Ecology: http://www.ecy.wa.gov/climatechange/docs/Benchmarking_White_Paper_Final.pdf

GHG benchmarking in other industries has mainly been used as a management tool for identifying the potential for economic improvement. Such is the case in the Netherlands. The country signed a voluntary agreement for their industries to become as energy efficient as the most efficient industry in the world (Neelis, Worrell, Mueller, & Angelini, 2009). Each company can develop their own benchmarking methodology, which is then verified by a national energy agency. Similar to the Netherlands, the petroleum industry has created a database of global energy use which feeds an extensively used benchmarking methodology (SEI et al., 2010a).

Benchmarking GHG emissions is also becoming a political hot topic that may result in regulations to restrict emissions. The U.S. EPA issued a report in December 2009 that stated greenhouse gases “endanger both the public health and the public welfare of current and future generations” (SEI et al., 2010a). To approach the possible regulation of GHG emissions, discussion has begun within the government on how to standardize the approach. The EPA has developed a “sector-based” benchmark methodology to project “business-as-usual” GHG improvements and reduction goals as part of its Climate Leaders Partnership (Tonkonogy et al., 2007). In this program, a “Climate Leader” would differentiate itself by setting GHG reduction goals as compared to the sector performance benchmark.

Benchmarking in the GHG emissions field is growing and will continue to have challenges as the process is defined in each industry and data is collected and studied (Medlin, 2007). However, the benefits outweigh the challenges. The outcomes allow facility managers and administrators to set realistic energy conservation goals, allow comparisons for developing emissions reduction planning, improve facilities planning, and establish quantifiable goals for continuous improvement (Briselden, 1998).

METHODOLOGY

Research Design

This study is a descriptive quantitative analysis of archival data. It utilizes a snapshot in time in that it only uses 1 year of an institution’s greenhouse gas emission inventory. The first research question is “Does the “size and setting” classification have an effect on the institution’s greenhouse gas emissions inventory?” The second research question is “Does the climate zone have an effect on the institution’s greenhouse gas emissions inventory?” The analysis anticipated establishing an association between the dependent variables (emissions per student and emissions per square foot) and the independent variables (climate zone and "size and setting" classification), so that benchmarks can be established for the institutions. If the analysis showed there are significant differences in the means of the emissions based on the differences in climate zone and "size and setting", the variables are good options for benchmarking parameters.

Selection of Subjects

The ACUPCC consists of over 600 institutions that must perform a GHG inventory within the first year of signing the commitment. To have a greater chance of higher numbers within each climate zone and "size and setting" combination, all of the available GHG inventories from the institutions will be used. Depending on how many are available at the time of data collection, the number of inventories ranged from 500 to 600.

Permission is not needed to obtain the GHG inventories from the AASHE website. Part of the climate commitment is the promise to "make the inventory reports publicly available by providing them to AASHE for posting and dissemination" (American College and University Presidents Climate Committment, 2007, p. 1). This dissemination makes the inventories public record.

Methodological Limitations

Some institutions were excluded because CFAT data was unavailable. The "size and setting" classification should be the same as the institutions' makeup in the year of the GHG inventory. There may be slight differences in GHG emissions depending on which version of GHG calculator used.

Instrumentation

The software used for this analysis is the IBM SPSS Statistics program, Version 18, with the Advanced Statistics module. SPSS is one of the most widely used statistical software programs in the social sciences (IBM, 2010). The "Advanced Statistics" module is one of the only software programs that can perform type of variance analysis needed in this study.

Data Collection

The data was collected in the following manner. The institution's first GHG inventory was taken from the AASHE website. The "Scope 1 and 2" emissions, student full-time enrollment (FTE), and total square feet of buildings from the AASHE website were entered into SPSS. The location of the institution was compared with the climate zone map provided by the Department of Energy (2009) and that climate zone was entered into SPSS. "Size and setting" data is available from 2004 and 2010 on the CFAT website. The year of the GHG inventory was compared to the closest year of the CFAT data and that Carnegie classification data was entered into SPSS. For example, if the institution completed its' GHG inventory in 2005, the 2004 Carnegie data will be used. If the institution's GHG inventory is from 2008, the 2010 Carnegie data will be used. Exclusion of ACUPCC institutions resulted from a lack of available Carnegie classification or GHG data.

Data Analysis

An analysis of variance is used to test hypotheses about differences between two or more means. If the means in each group are equal, the independent variables (climate zone and "size and setting") do not have a significant effect on the dependent variables (emissions by square foot and student FTE). Because there are two independent and two dependent variables, a multivariate analysis of variance *(MANOVA)* test is best suited for this study. The multivariate *F* value was based on a comparison of the error covariance and the effect covariance, due to the probable correlation of the variable (Lane, 2007). The significance level is $p < .05$. Univariate F tests were also performed to analyze the individual effects of the independent variables.

Interpretation

If the multivariate test is significant, the conclusion is that the combined effect of the independent variables is significant. If the results are significant, the identification of average emissions per independent variable will be provided in the findings section, with the "best practice" institution identified.

RESULTS

Population Demographics

There were 538 inventories available for analysis. Table 5 shows the number of institutions categorized by climate zone. The institutions residing in climates zones 4A, 5A, and 6A represent 61% of the population studied.

Table 5

Population by Climate Zone

Zone	Climate & Humidity Zone	# of Inventories
1A	Very Hot – Humid	3
2A	Hot – Humid	25
2B	Hot – Dry	7
3A	Warm – Humid	41
3B	Warm – Dry	41
3C	Warm – Marine	13
4A	Mixed – Humid	99
4B	Mixed – Dry	4
4C	Mixed – Marine	30
5A	Cool – Humid	162
5B	Cool – Dry	24
6A	Cold – Humid	69
6B	Cold – Dry	7
7A	Very Cold – Humid	11
7B	Very Cold – Dry	1
7C	Very Cold - Marine	1

Dividing the institutions by humidity levels, 76% reside in a humid climate (A), 16% in a dry climate (B), and 8% in a marine climate (C), as shown in Figure 1. There were no institutions to represent zones 1B, 5C, and 8.

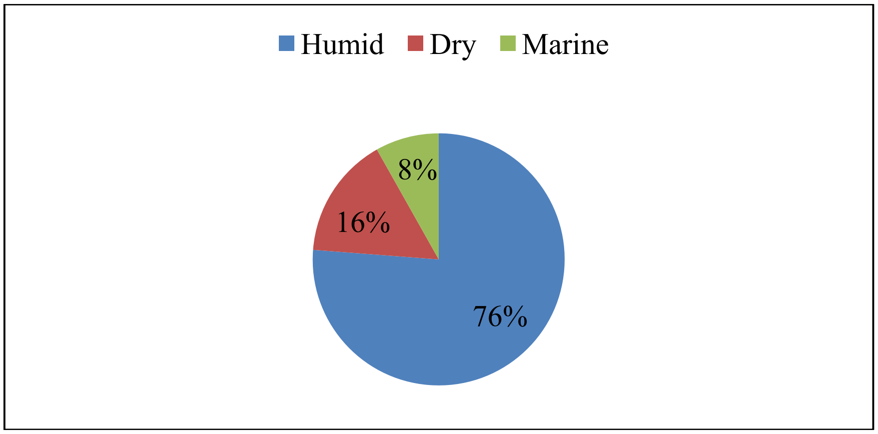

Figure 1. Humidity Zone Population Distribution

Table 6 presents the distribution of inventories across the "size and setting" classification. 28% of the inventories were from two-year schools.

Table 6

Population by "Size and Setting"

Size & Setting	Description	# of Inventories
-2	Special focus institution	14
1	Very small two-year	4
2	Small two-year	17
3	Medium two-year	70
4	Large two-year	39
5	Very large two-year	19
6	Very small four-year, primarily nonresidential	10
7	Very small four-year, primarily residential	7
8	Very small four-year, highly residential	25
9	Small four-year, primarily nonresidential	13
10	Small four-year, primarily residential	18
11	Small four-year, highly residential	84
12	Medium four-year, primarily nonresidential	23
13	Medium four-year, primarily residential	54
14	Medium four-year, highly residential	35
15	Large four-year, primarily nonresidential	51
16	Large four-year, primarily residential	40
17	Large four-year, highly residential	13
18	Exclusively graduate/professional	2

Of the four-year institutions, 18% were primarily non-residential, 22% were primarily residential, and 29% were highly residential, as shown in Figure 2.

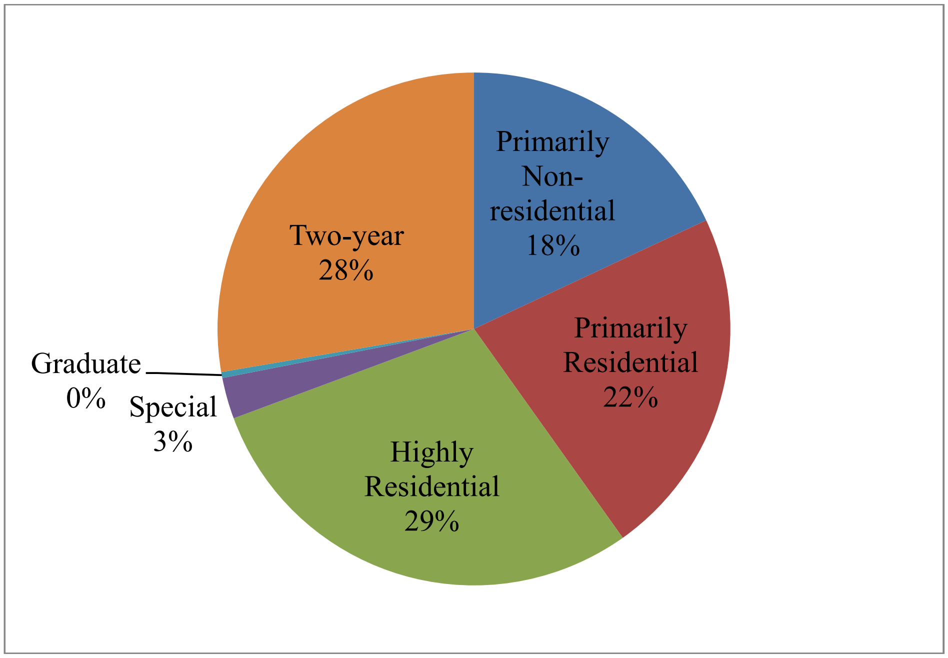

Figure 2. "Size and Setting" Population Distribution

Data Analysis

Several statistical tests were run in the SPSS software to analyze the data. A multivariate analysis of variance (*MANOVA*) was completed in three different variable combinations. A univariate analysis of variance *(ANOVA)* was completed in six different variable combinations. The customary significance level of $p < .05$ was used for all tests. When the p level is less than the significance level, the results were statistically significant.

Summary

All three *MANOVA* tests returned insignificant results when the Emissions per Square Foot and Emissions per FTE dependent variables were combined. When the dependent and independent variables were analyzed separately through *ANOVA* tests, several combinations returned significant results. Emissions per Square Foot by Climate Zone, Emissions per Square Foot by Size, and Emissions per FTE by "Size and Setting" had significant results. Results of all nine statistical tests are available at http://drsharonjaye.webs.com.

Discussion of Findings

The first research question asked, "Does the "size and setting" classification have an effect on the institution's greenhouse gas emissions inventory?" The answer is yes. The "size and setting" classification has an effect on both the emissions per square foot and emissions per FTE. The second research question asked, "Does the climate zone have an effect on the institution's greenhouse gas emissions inventory?" This answer is yes and no. The climate zone has an effect on emissions when measured by square feet, but not by FTE.

The *MANOVA* tests analyzed the variables' combined effect on emissions. When the dependent and independent variables were merged, the combined effect was not significant. When analyzed separately through univariate tests, there were several tests that had significant results. In the square foot analysis, emissions were affected independently by climate zone and by "size and setting." When analyzing the emissions per FTE, only the "size and setting" variable was significant. For each test that combined the independent variable, insignificant results were found.

The results were surprising at first, but after some thought, made sense. Due to small number of institutions represented in each size/zone combination, the data set does not yet allow for such minute analysis. The comparison of 16 climate zones to 19 "size and setting" classifications resulted in too many subsections of data. Having only one school per size/zone combination would have resulted in a data set of at least 304 schools. With a population of 538 institutions represented, there was a high probability that there were not enough institutions within each combination to make the results statistically significant. By breaking down the data into analysis by just zone or just size, each individual combination was more numerous in population, resulting in a more significant result. The results do show that each independent variable does have an effect on the institution's emissions and should be considered when benchmarking.

Emissions per Square Foot by Climate Zone

The mean average of emissions per square foot in each climate/humidity zone is represented by Figure 3. This illustrates how the climate zone and humidity levels affect emissions. Evaluating the basic climate zones based on temperature (zones 1-7) there is a general slope downward in emissions as the climate gets colder. The higher the average temperature, the higher level of emissions emitted during energy consumption. Evaluating the data by humidity levels, the humid (A) and dry (B) climates had very similar emissions, showing that between those climates, the humidity has less of an impact. The marine (C) climate had a significantly lower emissions curve than A and B in emissions per square foot, except in climate zone 7, meaning a school in California should not compare themselves to a school in Virginia.

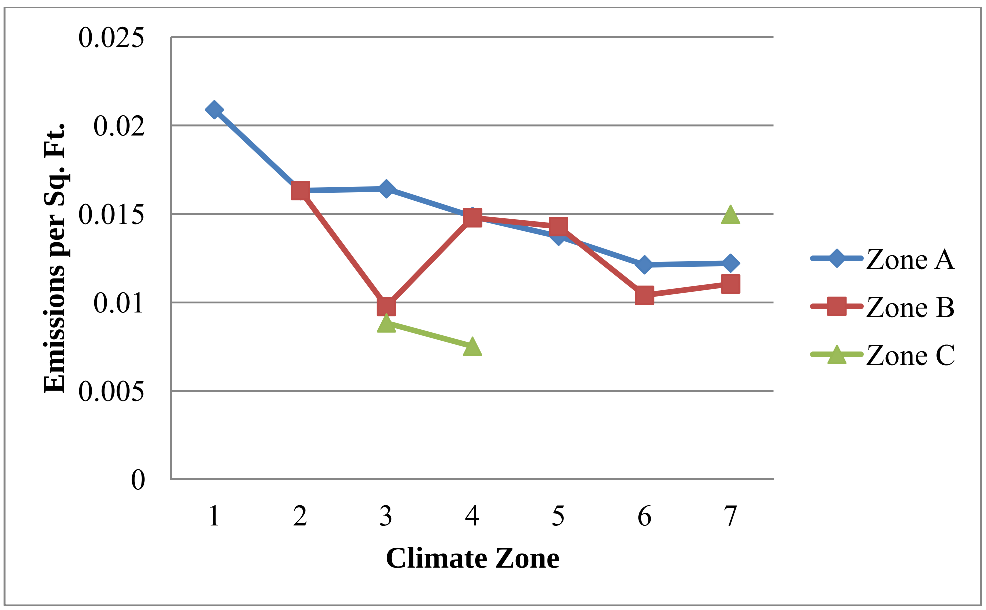

Figure 3. Emissions per Square Foot by Climate & Humidity Zone

Emissions per Square Foot by "Size and Setting"

The mean average of emissions per square foot by the "size and setting" classification is represented in Figure 4. The emission differences between the residential settings show how the number of buildings needed to fulfill the institution's missions can affect emissions. It shows how the more buildings on campus, the more energy used, in turn emitting more greenhouse gas emissions. For the more non-residential schools, the emissions did not change significantly between the different size categories. So a very small two-year school could compare themselves against a very large two-year school and be confident in the benchmark. The more residential schools did show differences in the emissions per square foot depending on their size. So a very small highly residential school would not want to compare themselves against a large highly residential school. Interestingly, there seems to be an economy of scale between the small and medium residential schools, whereas the medium institutions showed fewer emissions per square foot. Comparing each residential category against the other, there were significant differences. In benchmarking, this would mean a highly residential institution should not compare themselves to a nonresidential school.

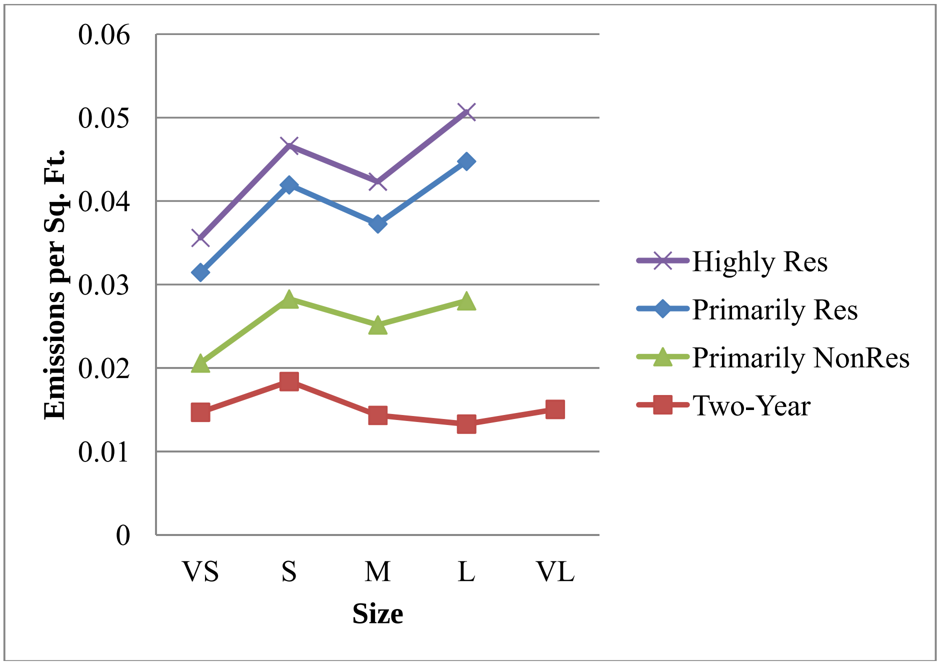

Figure 4. Emissions per Square Foot by "Size and Setting"

Emissions per FTE by "Size and Setting"

Just as in square foot analysis for "size and setting", the same conclusions can be made in analyzing emissions per student FTE for the "size and setting" classification. Emissions differed significantly between the different residential settings, while the slope of each emissions group followed similar lines.

Among two-year institutions, the emissions per student did not change significantly across the different size institutions, so that a very small two-year school could compare themselves again a large two-year school with confidence. But in comparing two-year and four-year institutions, the differences were significant, especially between the medium and large institutions. This analysis also shows a possible economy of scale between the small and medium four-year residential institutions. The differences between each residential setting were apparent, as shown in Figure 5. This demonstrates that in benchmarking, schools should compare themselves to others with similar residential settings.

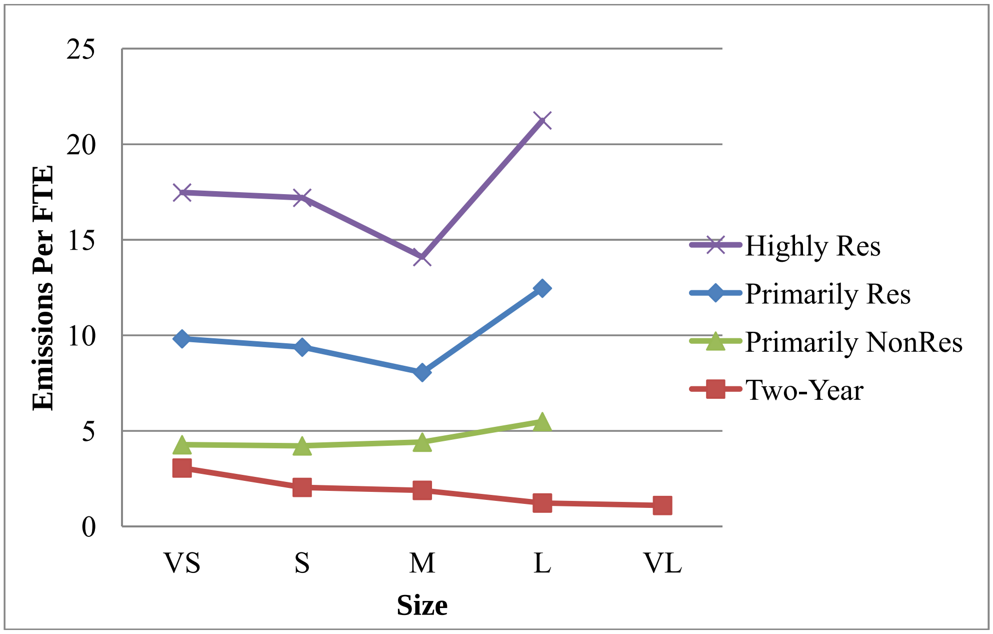

Figure 5. Emissions per FTE by "Size and Setting"

Benchmarks

From the results of the statistical tests, it would seem that creating three separate benchmark lists, one for each statistically significant test, would be appropriate. When attempting to create these tables, a pattern emerged. In the climate zone results, the zones that had emissions data from marine climates were identified because a school from a marine climate will most likely always have a lower emissions factor. In the "size and setting" results, the two year school with the lowest emissions was always the best practice school. So while it is important to recognize that the individual tests results are important, they do not function well for benchmarks. To benchmark higher education institutions, both the climate zone and "size and setting" must be considered.

A listing of each school in the data set with their climate zone and "size and setting" classification in alphabetical order is available at *http://drsharonjaye.webs.com*. A catalog of the benchmarks by square footage and by student FTE, first listed by climate zone, then by "size and setting" is also available. At the beginning of each section, the average emission of that group is listed, with the best practice school highlighted in bold. To determine how it is ranked and identify a comparable best practice school, an institution should locate its climate zone and "size and setting" classification in the alphabetical listing. Then the institution can locate its ranking within the benchmarks lists. The emissions are reported in metric tons of carbon dioxide equivalent (MT CO2e). Several zone/size groupings do not currently have benchmarks. If the grouping only has one school, then that school would be considered the "best practice" school until another institution in that group performs an inventory. Institutions in a group by themselves could compare themselves to the group closest to them in climate zone, size, and residential setting.

Recommendations for Implementation

Benchmarking greenhouse gas emissions for higher education institutions is as diverse as the institutions represented in this study. Emissions should be considered on a square foot and per student basis. Climate zone and "size and setting" should be considered when benchmarking emissions. The benchmarks should be revisited every year to take advantage of new inventories as institutions complete the first step of the American College and University Presidents Climate Commitment.

Indications for Further Research

Because this field is so new and this study is the first of its kind, there are endless opportunities for further research. The data could be analyzed by temperature climate zone without the humidity levels to allow for more institutions within each category. Analysis of the differences between the eight climate zones should be analyzed to determine if zones can be combined for benchmarking purposes, such as 2 & 3, 4 & 5, and 6 & 7, to allow for a greater population to be used in the statistical tests. Two-year and four-year institutions could be analyzed separately. The differences between the size of the school and the residential character within the four year category could be explored in depth to determine the economies of scale. The differences between emissions per square foot and emissions per student FTE could be analyzed. And when additional inventories become available, the data could be recalculated with univariate combinations. In addition to different combinations of this study's variables, other variables could be studied, such as endowment size, public vs. private ownership, enrollment profiles and many others. The possibilities for further research are endless!

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APPENDIX E

Emissions per Square Foot and Emissions per FTE by Climate Zone

and “Size and Setting” Descriptive Statistics

Emissions per Square Foot and Emissions per FTE by Climate Zone and "Size and Setting" Descriptive Statistics

	Zone	Size	Mean	Std. Deviation	N
EmisSqFT	1A	15	.024911234500	.0145293833596	2
		16	.012853200000	.	1
		Total	.020891889667	.0124103541074	3
	2A	3	.015294191750	.0046425184322	4
		4	.010339892000	.	1
		5	.020917304660	.0220455676405	5
		8	.010770493000	.0013882542582	2
		9	.013952045000	.	1
		11	.017502758000	.0077968450405	2
		12	.012794070000	.0043284155681	2
		13	.009436962000	.	1
		14	.016593833000	.0084625790039	2
		15	.020144723250	.0053319974327	4
		16	.012471812000	.	1
		Total	.016314608092	.0104251390352	25
	2B	3	.017725318000	.0077267085331	2
		4	.015518897000	.0018397065827	2
		5	.016551430000	.	1
		15	.015601051500	.0067425537795	2
		Total	.016320280429	.0043754862419	7
	3A	-2	.022542302000	.	1
		1	.015274693000	.0078160741023	2
		2	.028890594125	.0387380774657	4
		3	.016634239667	.0049649686744	3
		4	.011657023000	.0012694674172	3
		7	.011500069000	.	1
		8	.012570791000	.0006702170204	2
		9	.010078022000	.0015069265751	2
		10	.006870768850	.0086788124697	2
		11	.013384280200	.0012282403758	5
		12	.012724018000	.	1
		13	.017093906000	.	1

		15	.017561552857	.0070784096862	7
		16	.017664329333	.0044139330305	6
		17	.023447143000	.	1
		Total	.016418790224	.0125226300328	41
	3B	2	.024820976500	.0203478369644	2
		3	.008003394843	.0061110915802	7
		4	.006915859971	.0037845100098	7
		5	.008320258660	.0025644887071	5
		6	.003493429600	.	1
		8	.006458317800	.0013148902326	2
		11	.011833551450	.0116612654059	4
		12	.006849308000	.	1
		13	.007585658500	.0027557711959	2
		14	.009319576000	.	1
		15	.011199589300	.0028249261309	5
		16	.013440765625	.0050672358071	4
		Total	.009768866122	.0070352251121	41
	3C	-2	.014748870000	.	1
		3	.010361244000	.	1
		4	.009660473825	.0056270334405	4
		5	.005013591600	.	1
		6	.003948576700	.	1
		13	.008454043000	.	1
		14	.009593014000	.	1
		15	.006517402400	.	1
		16	.008863683500	.0017931146098	2
		Total	.008846615692	.0039030526694	13
	4A	-2	.014441024250	.0073599997744	2
		2	.009263281800	.0020743216994	3
		3	.015517156371	.0067052540130	7
		4	.014579112600	.0030240065235	5
		5	.009873709150	.0111689776709	2
		7	.010566682000	.0053605213538	2
		8	.012886195550	.0053825400850	6
		9	.008579254000	.	1
		10	.018691411020	.0151026519997	5
		11	.013457245711	.0041182427814	19
		12	.012351664600	.0050188921871	5

		13	.014070494429	.0037068164928	14
		14	.016326500167	.0051498448443	6
		15	.014164313333	.0054557227792	9
		16	.021639494125	.0059211796634	8
		17	.020020320000	.0057369705220	5
		Total	.014863738421	.0062503017756	99
	4B	1	.018804243000	.	1
		2	.012313710500	.	1
		6	.010313677000	.	1
		15	.017707890000	.	1
		Total	.014784880125	.0041149160117	4
	4C	2	.000692165000	.	1
		3	.011220836267	.0128985157544	6
		4	.007326334150	.0046189117922	2
		5	.008526658000	.	1
		6	.000724584115	.0005917223482	2
		9	.007284011600	.0070516328406	2
		11	.006420364300	.0027851736814	4
		12	.007097626433	.0022005543383	3
		13	.006580465500	.	1
		14	.004301222933	.0025212575164	3
		15	.009402439325	.0062812411005	4
		16	.014485923000	.	1
		Total	.007525595048	.0069224417142	30
	5A	-2	.020864795167	.0232582949901	9
		2	.018408263500	.0137389030320	2
		3	.015966094111	.0133182066021	27
		4	.018725568708	.0079320176242	12
		5	.022455898750	.0146119392851	4
		7	.005463333300	.	1
		8	.008495468267	.0035454821865	9
		9	.015963858500	.0047240057497	2
		10	.012949719000	.0042331093610	6
		11	.011589447407	.0040437922874	28
		12	.010371230186	.0048552969820	7
		13	.011317059440	.0047988272701	15
		14	.010901659567	.0041240697213	18
		15	.010222286000	.0018948050199	4

		16	.016165966955	.0066394836662	11
		17	.012499990500	.0023582051638	6
		18	.006705882500	.	1
		Total	.013736251427	.0094992930823	162
	5B	2	.038238477000	.	1
		3	.026005074000	.	1
		4	.008704908000	.	1
		6	.009323489767	.0016916815496	3
		9	.005136741000	.	1
		10	.011216516000	.	1
		11	.013795838500	.0048483561341	2
		12	.013770520000	.0012585468329	2
		13	.009144368567	.0037942577611	3
		15	.017070916000	.0052680203476	7
		16	.011785707500	.0002083511344	2
		Total	.014287743125	.0074673007682	24
	6A	-2	.024584034000	.	1
		1	.009466726000	.	1
		2	.011895505000	.	1
		3	.013876864500	.0048898760680	10
		4	.016862998500	.0090493284328	2
		6	.004306666600	.	1
		7	.011002014750	.0032730958203	2
		8	.008007106333	.0027940629883	3
		9	.009493715500	.0017988591452	2
		10	.012928986000	.0047498541927	3
		11	.011072485621	.0038432470164	19
		12	.010570460250	.0054532750252	2
		13	.012467093523	.0024057825385	13
		14	.012024444250	.0013954773189	4
		15	.012421978000	.	1
		16	.021434384500	.0053505037721	2
		17	.008872897000	.	1
		18	.004274471000	.	1
		Total	.012125703858	.0045578187451	69
	6B	6	.007449551500	.	1
		9	.006645051000	.	1
		13	.011991686000	.	1

		15	.012021011533	.0051915093613	3
		16	.010668812000	.	1
		Total	.010402590729	.0038121962097	7
	7A	2	.009801349800	.0031429414328	2
		3	.009073725500	.0055369635876	2
		7	.015918354000	.	1
		8	.006795928300	.	1
		9	.008661300000	.	1
		11	.015248870000	.	1
		13	.013823667000	.0044432511236	2
		16	.022349996000	.	1
		Total	.012215630264	.0051426960935	11
	7B	10	.011046068000	.	1
		Total	.011046068000	.	1
	7C	15	.014977804000	.	1
		Total	.014977804000	.	1
	Total	-2	.019895743643	.0186159361102	14
		1	.014705088750	.0059437199979	4
		2	.018385485824	.0206619406351	17
		3	.014326656473	.0100932939290	70
		4	.013284298228	.0070031980139	39
		5	.015044763658	.0140489125279	19
		6	.005893153893	.0037833545537	10
		7	.010859878543	.0039745313684	7
		8	.009767713544	.0040610896874	25
		9	.009893354323	.0042637045490	13
		10	.013663691600	.0089396553142	18
		11	.012004197020	.0046664869243	84
		12	.010847532178	.0042712279511	23
		13	.012085626826	.0039825468958	54
		14	.011636873571	.0050710308976	35
		15	.014778323996	.0063972938098	51
		16	.016692198050	.0061201538753	40
		17	.015955506385	.0059160941841	13
		18	.005490176750	.0017192675595	2
		Total	.013323357428	.0083478946438	538
EmisFTE	1A	15	4.18878150000	.243678613449	2
		16	9.14516300000	.	1

		Total	5.84090866667	2.866751150316	3
	2A	3	1.28405281250	.581413373519	4
		4	1.18750000000	.	1
		5	1.54967206800	1.053484864091	5
		8	5.79290890000	2.177288269555	2
		9	2.93342200000	.	1
		11	8.83944250000	3.325465916271	2
		12	2.54161170000	.875714413261	2
		13	2.59810200000	.	1
		14	11.33981085000	8.236124026738	2
		15	5.07316770000	3.407785559431	4
		16	8.72682000000	.	1
		Total	4.22602537160	4.011300380266	25
	2B	3	1.44867725000	.636612831296	2
		4	.75103150000	.624145619505	2
		5	.96703110000	.	1
		15	3.44350320000	.551735339527	2
		Total	1.75049357143	1.266600254844	7
	3A	-2	40.76920700000	.	1
		1	3.10993865000	2.775801904638	2
		2	1.62015663500	.670010062798	4
		3	2.35794890000	1.392629612303	3
		4	.77868206667	.205592061063	3
		7	9.01889500000	.	1
		8	9.72083950000	4.235225258305	2
		9	2.58235535000	.112378854388	2
		10	2.13393720000	1.078732124051	2
		11	9.44478006000	2.077152893289	5
		12	2.59678840000	.	1
		13	7.20851400000	.	1
		15	4.24509110000	1.844971642261	7
		16	6.77983642933	1.434094869133	6
		17	16.50037400000	.	1
		Total	5.96821941015	6.711674615711	41
	3B	2	3.97250321500	4.657177490893	2
		3	.34990922714	.192396436133	7
		4	.39585451000	.388937290049	7
		5	.42289234400	.225959130727	5

		6	.21664275000	.	1
		8	4.11326325000	2.941843163361	2
		11	7.48688517500	7.379755020219	4
		12	1.02166440000	.	1
		13	2.01045460000	1.041300153796	2
		14	2.49879930000	.	1
		15	3.47268864000	2.754302637423	5
		16	6.11032875000	1.727969846161	4
		Total	2.51260135024	3.514716263963	41
	3C	-2	48.77100400000	.	1
		3	.61328360000	.	1
		4	.40663654500	.178338394598	4
		5	.33762947000	.	1
		6	.75994110000	.	1
		13	2.48212220000	.	1
		14	3.23995100000	.	1
		15	.82607640000	.	1
		16	2.78128265000	.057880437706	2
		Total	4.93993225000	13.216190236836	13
	4A	-2	10.13975785000	9.956072176520	2
		2	.98478149533	.798059385486	3
		3	1.30099686271	.870801877314	7
		4	1.15085744600	.557353396059	5
		5	.89877375000	.917504636162	2
		7	5.67709630000	2.288583199958	2
		8	10.72274973050	5.671054133015	6
		9	2.04340360000	.	1
		10	7.23859987600	6.217261782847	5
		11	8.58179503421	3.669380430217	19
		12	3.51878762000	2.234389870008	5
		13	3.87189851579	1.835456454933	14
		14	8.93640533333	3.860645025999	6
		15	4.00400768889	3.189580577087	9
		16	9.80386867500	5.326323514852	8
		17	12.40175644000	8.653584861967	5
		Total	6.25018810797	5.152786793322	99
	4B	1	4.00354000000	.	1
		2	1.98765430000	.	1

		6	.96027803000	.	1
		15	5.70319560000	.	1
		Total	3.16366698250	2.112859120562	4
	4C	2	.12780829000	.	1
		3	.79198382833	1.231372145470	6
		4	.57903338000	.239132369394	2
		5	.74946770000	.	1
		6	.16317625300	.193303459444	2
		9	1.36647190000	1.079436260983	2
		11	2.90917702500	.873119663939	4
		12	2.65392470000	1.248763426961	3
		13	1.67993200000	.	1
		14	1.52349828333	1.009260278298	3
		15	3.55545210000	2.319278437252	4
		16	2.23158650000	.	1
		Total	1.73829486587	1.563423137741	30
	5A	-2	18.52745785444	46.375979310923	9
		2	2.78959445000	2.016286631572	2
		3	2.40669679441	2.855304107466	27
		4	2.29261010775	1.426751064222	12
		5	1.80040988500	2.021180112754	4
		7	4.46594000000	.	1
		8	7.87651724444	4.840977410912	9
		9	2.56518795000	.070491121463	2
		10	5.40331136667	1.474034260234	6
		11	7.54992398204	3.540308547592	28
		12	2.23010477000	1.334874348720	7
		13	3.05624948393	1.944247897932	15
		14	5.92556531111	5.043458714701	18
		15	3.83503567500	2.486131303159	4
		16	5.73606172727	3.550721294718	11
		17	5.40451763333	2.101728428527	6
		18	.58641976000	.	1
		Total	5.40671477270	11.427253995311	162
	5B	2	1.69920780000	.	1
		3	11.50922400000	.	1
		4	.81106530000	.	1
		6	2.16685096667	.617828185571	3

		9	1.34212770000	.	1
		10	3.22910210000	.	1
		11	7.73990900000	2.496159062480	2
		12	2.88375855000	1.029168393462	2
		13	3.63218986667	1.910443751836	3
		15	5.13041775714	2.521521677367	7
		16	4.57813975000	1.606302725727	2
		Total	4.26268284583	2.832282432127	24
	6A	-2	9.13783200000	.	1
		1	2.00792070000	.	1
		2	2.20752900000	.	1
		3	2.13161788200	1.361668310319	10
		4	1.60433193000	1.213692037516	2
		6	.95139910000	.	1
		7	4.75045440000	1.917153584251	2
		8	4.24269626667	2.589721606464	3
		9	1.50665662000	1.215726397868	2
		10	4.13532690000	1.119303645196	3
		11	7.88834375789	4.092981696458	19
		12	1.20122372000	.554796235077	2
		13	3.64416307692	.906390971389	13
		14	4.54134042500	.977900631300	4
		15	2.73833750000	.	1
		16	11.99384000000	1.822904311336	2
		17	3.26989960000	.	1
		18	2.37219740000	.	1
		Total	4.73429550812	3.558978244266	69
	6B	6	2.50276760000	.	1
		9	2.73396226400	.	1
		13	11.90545100000	.	1
		15	7.03177886667	6.516491988999	3
		16	4.02369640000	.	1
		Total	6.03731626629	4.996516376999	7
	7A	2	2.89316415000	1.136222097392	2
		3	1.24446685000	.187241804948	2
		7	4.44615360000	.	1
		8	4.06843570000	.	1
		9	3.15395470000	.	1

		11	10.33450100000	.	1
		13	4.23035110000	.594904349940	2
		16	9.50242900000	.	1
		Total	4.38558529091	2.985111596536	11
	7B	10	4.44668200000	.	1
		Total	4.44668200000	.	1
	7C	15	2.79502960000	.	1
		Total	2.79502960000	.	1
	Total	-2	20.40747709929	38.123011424997	14
		1	3.05783450000	1.798812921424	4
		2	2.04515847329	1.724156569389	17
		3	1.89034416597	2.340293741964	70
		4	1.22734721521	1.149138552738	39
		5	1.10084933526	1.150103883262	19
		6	1.22179339860	.984748425035	10
		7	5.54087000000	2.026912931108	7
		8	7.65102805532	4.735903895999	25
		9	2.17293953108	.819292185175	13
		10	5.16458371000	3.571204142447	18
		11	7.81704597199	3.824794746904	84
		12	2.52339505783	1.469980442107	23
		13	3.64216192000	2.011785492728	54
		14	6.04093817571	4.780444630053	35
		15	4.26088708627	2.764745175906	51
		16	6.97460454190	3.844255909978	40
		17	8.78508935385	6.742516629488	13
		18	1.47930858000	1.262735478935	2
		Total	4.89504583181	7.564147211011	538

Dissertation Data

Name	State	Climate Zone	Size and Setting	
Adams State College	Colorado	6B	13	
Agnes Scott College	Georgia	3A	8	
Albion College	Michigan	5A	11	
Alfred University	New York	6A	11	
Allegheny College	Pennsylvania	5A	11	
American University	DC	4A	14	
Antioch University Los Angeles	California	3B	6	
Antioch University New England	New Hampshire	5A	18	
Antioch University, Seattle	Washington	4C	6	
Appalachian State University	North Carolina	5A	16	
Aquinas College	Michigan	5A	11	
Arizona State University	Arizona	2B	15	
Auburn University	Alabama	3A	15	
Augsburg College	Minnesota	6A	10	
Austin College	Texas	3A	11	
Austin Community College	Texas	2A	5	
Babson College	Massachusetts	5A	-2	
Ball State University	Indiana	5A	16	
Bard College	New York	5A	10	
Bates College	Maine	6A	11	
Bellevue Community College	Washington	4C	4	
Bemidji State University	Minnesota	7A	13	
Bentley College (University)	Massachusetts	5A	14	
Berea College	Kentucky	4A	11	
Bergen Community College	New Jersey	5A	4	
Berkshire Community College	Massachusetts	5A	2	
Berry College	Georgia	4A	11	
Bethany College	West Virginia	5A	8	
Black Hills State University	South Dakota	6A	13	
Boise State University	Idaho	5A	15	
Boston Architectural College	Massachusetts	5A	-2	
Bowdoin College	Maine	6A	11	
Bowie State University	Maryland	4A	13	
Brandeis University	Massachusetts	5A	14	
Bridgewater State College (University)	Massachusetts	5A	13	
Bristol Community College	Massachusetts	5A	3	
Brookhaven College	Texas	3A	4	
Broome Community College	New York	6A	3	
Bryn Mawr College	Pennsylvania	4A	11	
Bucknell University	Pennsylvania	5A	14	
Bunker Hill Community College	Massachusetts	5A	3	
Butte College	California	3B	4	

Cabrillo College	California	3C	4	
California State Polytechnic University, Pomona	California	3B	15	
California State University, Bakersfield	California	3B	12	
California State University, Chico	California	3B	15	
California State University, Monterey Bay	California	3C	14	
Cape Cod Community College	Massachusetts	5A	3	
Carleton College	Minnesota	6A	11	
Carteret Community College	North Carolina	3A	2	
Cascadia Community College	Washington	4C	2	
Case Western Reserve University	Ohio	5A	14	
Castleton State College	Vermont	6A	11	
Catawba College	North Carolina	3A	10	
Cedar Valley College	Texas	3A	3	
Central College	Iowa	5A	11	
Central Connecticut State University	Connecticut	5A	12	
Central Washington University	Washington	5B	13	
Centralia College	Washington	4C	3	
Centre College	Kentucky	4A	11	
Century (Community and Technical) College	Minnesota	6A	4	
Chabot College	California	3C	4	
Chaffey College	California	3B	4	
Chandler-Gilbert Community College	Arizona	2B	3	
Chatham University	Pennsylvania	5A	8	
Cincinnati State Technical & Community College	Ohio	4A	4	
Claremont McKenna College	California	3B	11	
Clark University	Massachusetts	5A	11	
Clemson University	South Carolina	3A	16	
Coastline Community College	California	3B	3	
Coe College	Iowa	5A	11	
Colby College	Maine	6A	11	
Colby-Sawyer College	New Hampshire	6A	8	
Colgate University	New York	6A	11	
College of Lake County	Illinois	5A	4	
College of Marin	California	3C	3	
College of Menominee Nation	Wisconsin	6A	1	
College of Saint Benedict	Minnesota	6A	11	
College of Saint Rose	New York	5A	13	
College of the Atlantic	Maine	6A	7	
College of the Holy Cross	Massachusetts	5A	11	
Colorado College	Colorado	5B	11	
Colorado State University	Colorado	5B	15	
Columbus State Community College	Ohio	5A	5	
Community College of Denver	Colorado	5B	3	
Concordia University	Nebraska	5A	11	
Connecticut College	Connecticut	5A	11	
Coppin State University	Maryland	4A	12	

Cornell University	New York	6A	16	
County College of Morris	New Jersey	5A	4	
Dakota County Technical College	Minnesota	6A	3	
Davidson College	North Carolina	3A	11	
De Anza College	California	3C	5	
Delaware State University	Delaware	4A	10	
Delta College	Michigan	5A	4	
DePauw University	Indiana	5A	11	
Des Moines Area Community College	Iowa	5A	4	
Dickinson College	Pennsylvania	5A	11	
Drake University	Iowa	5A	13	
Drew University	New Jersey	5A	11	
Drury University	Missouri	4A	13	
Duke University	North Carolina	4A	17	
Durham Technical Community College	North Carolina	4A	3	
East Los Angeles College	California	3B	5	
Eastern Connecticut State University	Connecticut	5A	13	
Eastern Iowa Community College District	Iowa	5A	3	
Eastern Washington University	Washington	5B	12	
Eastfield College	Texas	3A	4	
Eckerd College	Florida	2A	11	
Edmonds Community College	Washington	4C	3	
El Centro College	Texas	3A	3	
Emerson College	Massachusetts	5A	13	
Emory & Henry College	Virginia	4A	8	
Everett Community College	Washington	4C	3	
Fairfield University	Connecticut	5A	14	
Ferrum College	Virginia	4A	8	
Finger Lakes Community College	New York	5A	3	
Fitchburg State College	Massachusetts	5A	13	
Florida Atlantic University	Florida	2A	15	
Florida Gulf Coast University	Florida	2A	13	
Florida International University	Florida	1A	15	
Foothill College	California	3C	4	
Fort Lewis College	Colorado	5B	13	
Framingham State College	Massachusetts	5A	13	
Franklin & Marshall College	Pennsylvania	5A	11	
Franklin College of Indiana	Indiana	5A	8	
Franklin Pierce University	New Hampshire	5A	11	
Frostburg State University	Maryland	4A	13	
Furman University	South Carolina	3A	11	
Gainesville State College	Georgia	4A	3	
Gateway Community College	Arizona	2B	3	
Gateway Technical College	Wisconsin	6A	3	
George Mason University	Virginia	4A	15	
George Washington University	District of Columbia	4A	17	

Georgia Institute of Technology	Georgia	3A	17	
Georgia Southern University	Georgia	3A	15	
Georgian Court University	New Jersey	4A	9	
Gettysburg College	Pennsylvania	5A	11	
Glouchester County College	New Jersey	4A	3	
Goddard College	Vermont	6A	6	
Golden West College	California	3B	4	
Goshen College	Indiana	5A	8	
Goucher College	Maryland	4A	11	
Governors State University	Illinois	5A	9	
Grand Rapids Community College	Michigan	5A	4	
Grand Valley State University	Michigan	5A	16	
Green Mountain College	Vermont	6A	8	
Greenfield Community College	Massachusetts	5A	2	
Guilford College	North Carolina	4A	11	
Gustavus Adophus College	Minnesota	6A	11	
Hamilton College	New York	6A	11	
Hampshire College	Massachusetts	5A	11	
Harford Community College	Maryland	4A	3	
Harrisburg Area Community College	Pennsylvania	5A	5	
Harvey Mudd College	California	3B	8	
Haverford College	Pennsylvania	4A	11	
Haywood Community College	North Carolina	4A	2	
Hibbing Community College	Minnesota	7A	2	
Hillsborough Community College	Florida	2A	5	
Hiram College	Ohio	5A	8	
Hobart & William Smith Colleges	New York	5A	11	
Hocking Technical College	Ohio	5A	3	
Hollins University	Virginia	4A	8	
Holyoke Community College	Massachusetts	5A	3	
Houghton College	New York	6A	11	
Houston Community College	Texas	2A	5	
Howard Community College	Maryland	4A	3	
Huston-Tillotson University	Texas	2A	8	
Illinois College	Illinois	5A	11	
Illinois State University	Illinois	5A	16	
Indiana State University	Indiana	5A	13	
Inver Hills Community College	Minnesota	6A	3	
Iowa Lakes Community College	Iowa	6A	3	
Ithaca College	New York	6A	14	
Jackson Community College	Michigan	5A	3	
James Madison University	Virginia	4A	16	
Jamestown Community College	New York	5A	3	
Johnson County Community College	Kansas	4A	5	
Joliet Junior College	Illinois	5A	4	
Juniata College	Pennsylvania	5A	11	

Kalamazoo College	Michigan	5A	11	
Kankakee Community College	Illinois	5A	3	
Keene State College	New Hampshire	5A	14	
Kennesaw State University	Georgia	3A	15	
Kent State University, Stark	Ohio	5A	3	
Keystone College	Pennsylvania	5A	9	
Labette Community College	Kansas	4A	2	
LaGrange College	Georgia	3A	8	
Lake Michigan College	Michigan	5A	3	
Lake Superior College	Minnesota	7A	3	
Lakeshore Technical College	Wisconsin	6A	2	
Lane Community College	Oregon	4C	4	
Lansing Community College	Michigan	5A	5	
Las Positas College	California	3B	3	
Lasell College	Massachusetts	5A	11	
Lee College	Texas	2A	3	
Lesley University	Massachusetts	5A	13	
Lewis & Clark College	Oregon	4C	11	
Lewis & Clark Community College	Illinois	4A	3	
Life University	Georgia	3A	10	
Lincoln Land Community College	Illinois	5A	3	
Linfield College	Oregon	4C	11	
Lorain County Community College	Ohio	5A	4	
Loras College	Iowa	5A	11	
Los Angeles City College	California	3B	4	
Los Angeles Harbor College	California	3B	3	
Los Angeles Mission College	California	3B	3	
Los Angeles Pierce College	California	3B	4	
Los Angeles Southwest College	California	3B	3	
Los Angeles Trade-Technical College	California	3B	4	
Los Angeles Valley College	California	3B	4	
Loyola Marymount University	California	3B	13	
Luther College	Iowa	6A	11	
Lynchburg College	Virginia	4A	11	
Macalester College	Minnesota	6A	11	
Madison Area Technical College	Wisconsin	6A	4	
Maharishi University of Management	Iowa	5A	8	
Manchester Community College	Connecticut	5A	3	
Manhattanville College	New York	4A	11	
Marymount Manhattan College	New York	4A	10	
Massachusetts Bay Community College	Massachusetts	5A	3	
Massachusetts College of Art and Design	Massachusetts	5A	-2	
Massachusetts College of Liberal Arts	Massachusetts	5A	10	
Massasoit Community College	Massachusetts	5A	3	
McDaniel College	Maryland	4A	11	
McLennan Community College	Texas	2A	3	

Medical University of South Carolina	South Carolina	3A	-2	
Mercer County Community College	New Jersey	5A	4	
Mercyhurst College	Pennsylvania	5A	14	
Mesa Community College	Arizona	2B	5	
Messiah College	Pennsylvania	4A	11	
Metropolitan State College of Denver	Colorado	5B	15	
Metropolitan State University	Minnesota	6A	12	
Middlebury College	Vermont	6A	11	
Middlesex Community College	Massachusetts	5A	3	
Mills College	California	3B	11	
Minneapolis Community & Technical College	Minnesota	6A	3	
Minnesota State Community & Technical College	Minnesota	7A	3	
Minot State University	North Dakota	7A	9	
Mississippi State University	Mississippi	3A	15	
Monroe Community College	New York	5A	5	
Montana State University - Bozeman	Montana	6B	16	
Montana Tech of The University of Montana	Montana	6B	9	
Monterey Institute of International Studies	California	3C	6	
Montgomery County Community College	Pennsylvania	4A	4	
Morgan State University	Maryland	4A	13	
Mount Mercy College	Iowa	5A	10	
Mount St. Mary's University	Maryland	4A	11	
Mount Union College	Ohio	5A	11	
Mount Wachusett Community College	Massachusetts	5A	3	
Naropa University	Colorado	5B	6	
Nassau Community College	New York	4A	5	
New College of Florida	Florida	2A	8	
New England Institute of Technology	Rhode Island	5A	-2	
New Mexico State University - Alamogordo	New Mexico	3B	2	
New Mexico State University - Carlsbad	New Mexico	3B	2	
New Mexico State University - Dona Ana	New Mexico	3B	3	
New Mexico State University - Grants	New Mexico	4B	1	
New Mexico State University - Main Campus	New Mexico	3B	15	
New York University	New York	4A	17	
Norfolk State University	Virginia	4A	13	
North Arkansas College	Arkansas	4A	2	
North Carolina State University	North Carolina	4A	16	
North Iowa Area Community College	Iowa	6A	3	
North Lake College	Texas	3A	3	
North Shore Community College	Massachusetts	5A	3	
Northeastern University	Massachusetts	5A	16	
Northern Arizona University	Arizona	5B	16	
Northern Essex Community College	Massachusetts	5A	3	
Northern Kentucky University	Kentucky	4A	15	
Northland College	Wisconsin	7A	8	
Northwest Vista College	Texas	2A	3	

Norwalk Community College	Connecticut	5A	3	
Oberlin College	Ohio	5A	11	
Ocean County College	New Jersey	4A	4	
Ohio University	Ohio	5A	16	
Olympic College	Washington	4C	3	
Onondaga Community College	New York	5A	4	
Orange Coast College	California	3B	5	
Oregon Institute of Technology	Oregon	5B	9	
Oregon State University	Oregon	4C	15	
Pacific Lutheran University	Washington	4C	14	
Palo Alto College	Texas	2A	3	
Park University	Missouri	4A	12	
Parkland College	Illinois	5A	4	
Pasadena City College	California	3B	5	
Peninsula College	Washington	4C	3	
Pennsylvania State University - Penn State Berks	Pennsylvania	4A	10	
Pine Manor College	Massachusetts	5A	8	
Pitzer College	California	3B	8	
Plymouth State University	New Hampshire	6A	14	
Point Loma Nazarene University	California	3B	11	
Pomona College	California	3B	11	
Portland Community College	Oregon	4C	5	
Portland State University	Oregon	4C	15	
Pratt Institute	New York	4A	-2	
Prescott College	Arizona	4B	6	
Purchase College, State University of New York	New York	4A	14	
Quinsigamond Community College	Massachusetts	5A	3	
Radford University	Virginia	4A	13	
Ramapo College of New Jersey	New Jersey	5A	14	
Randolph College	Virginia	4A	8	
Rhodes College	Tennessee	3A	11	
Rice University	Texas	2A	14	
Richland College	Texas	3A	4	
Rider University	New Jersey	5A	14	
Rio Salado College	Arizona	2B	4	
Rochester Community and Technical College	New York	6A	3	
Rochester Institute of Technology	New York	5A	17	
Roger Williams University	Rhode Island	5A	14	
Rose-Hulman Institute of Technology	Indiana	5A	-2	
Rosemont College	Pennsylvania	4A	7	
Rowan University	New Jersey	4A	13	
Saint John's University	Minnesota	6A	11	
Saint Joseph's College of Maine	Maine	6A	9	
Saint Norbert College	Wisconsin	6A	11	
Saint Peter's College	New Jersey	4A	10	
Saint Xavier University	Illinois	5A	12	

Salem State College	Massachusetts	5A	12	
Salisbury University	Maryland	4A	13	
San Antonio College	Texas	2A	5	
San Francisco State University	California	3C	15	
San Joaquin Delta College	California	3B	5	
Santa Clara University	California	3C	13	
Santa Fe Community College	New Mexico	5B	2	
Santa Monica College	California	3B	5	
School for International Training	Vermont	6A	18	
School of the Arts Institute Chicago	Illinois	5A	-2	
Scottsdale Community College	Arizona	2B	4	
Seattle Pacific University	Washington	4C	14	
Seattle University	Washington	4C	13	
Sewanee: The University of the South	Tennessee	4A	11	
Shoreline Community College	Washington	4C	3	
Simmons College	Massachusetts	5A	14	
Simpson College	Iowa	5A	10	
Slippery Rock University of Pennsylvania	Pennsylvania	5A	13	
Smith College	Massachusetts	5A	14	
South Dakota School of Mines & Technology	South Dakota	6A	-2	
South Suburban College	Illinois	5A	3	
Southern Connecticut State University	Connecticut	5A	13	
Southern New Hampshire University	New Hampshire	5A	13	
Southern Polytechnic State University	Georgia	3A	9	
Southwestern College	Kansas	4A	7	
Springfield College	Massachusetts	5A	14	
St. Catherine University	Minnesota	6A	13	
St. Clair County Community College	Michigan	5A	3	
St. Cloud State University	Minnesota	6A	15	
St. Lawrence University	New York	6A	11	
St. Louis Community College at Florissant Valley	Missouri	4A	3	
St. Louis Community College at Meramec	Missouri	4A	4	
St. Mary's College of Maryland	Maryland	4A	11	
St. Philip's College	Texas	2A	4	
State University of New York at Albany	New York	5A	17	
State University of New York at Binghamtom	New York	6A	17	
State University of New York at Buffalo	New York	5A	16	
State University of New York at Fredonia	New York	5A	14	
State University of New York at New Paltz	New York	6A	13	
State University of New York at Stony Brook	New York	4A	17	
State University of New York College of Env. Science and For	New York	5A	10	
State University of New York, College at Geneseo	New York	5A	14	
State University of New York, College at Oswego	New York	5A	14	
State University of New York, College at Potsdam	New York	6A	14	
State University of New York, Empire State College	New York	5A	12	
Stetson University	Florida	2A	14	

SUNY, Orange County Community College	New York	5A	3	
SUNY, Rockland Community College	New York	5A	3	
Sweet Briar College	Virginia	4A	8	
Syracuse University	New York	5A	17	
Temple University	Pennsylvania	4A	15	
Texas Christian University	Texas	3A	13	
The City College of New York	New York	4A	12	
The College of New Jersey	New Jersey	5A	14	
The Community College of Baltimore County	Maryland	4A	5	
The Evergreen State College	Washington	4C	12	
The National Graduate School of Quality Management	Massachusetts	5A	-2	
The New School University	New York	4A	13	
The Ohio State University	Ohio	5A	16	
The Richard Stockton College of New Jersey	New Jersey	4A	13	
The University of Montana Missoula	Montana	6B	15	
The University of Montana Western	Montana	6B	6	
Tompkins Cortland Community College	New York	6A	3	
Towson University	Maryland	4A	15	
Transylvania University	Kentucky	4A	11	
Trident Technical College	South Carolina	3A	4	
Trinity College	Connecticut	5A	11	
Trinity University	Texas	2A	11	
Truckee Meadows Community College	Nevada	5B	4	
Tulane University	Louisiana	2A	16	
Union College	New York	5A	11	
Unity College	Maine	6A	8	
University of Alaska, Anchorage	Alaska	7C	15	
University of Arizona	Arizona	2B	15	
University of Arkansas, Main Campus	Arkansas	4A	16	
University of Baltimore	Maryland	4A	12	
University of California, Berkeley	California	3B	16	
University of California, Davis	California	3B	15	
University of California, Irvine	California	3B	16	
University of California, Los Angeles	California	3B	16	
University of California, San Diego	California	3B	16	
University of California, San Francisco	California	3C	-2	
University of California, Santa Barbara	California	3C	16	
University of California, Santa Cruz	California	3C	16	
University of Central Florida	Florida	2A	15	
University of Central Missouri	Missouri	4A	13	
University of Central Oklahoma	Oklahoma	3A	15	
University of Cincinnati	Ohio	4A	15	
University of Colorado at Boulder	Colorado	5B	15	
University of Colorado at Colorado Springs	Colorado	5B	12	
University of Colorado at Denver	Colorado	5B	15	
University of Connecticut	Connecticut	5A	17	

University of Delaware	Delaware	4A	16	
University of Denver	Colorado	5B	13	
University of Florida	Florida	2A	15	
University of Hawai'i at Manoa	Hawai'i	1A	15	
University of Houston-Downtown	Texas	2A	12	
University of Houston-Victoria	Texas	2A	9	
University of Idaho	Idaho	5A	16	
University of Illinois at Chicago	Illinois	5A	15	
University of Illinois at Urbana-Champaign	Illinois	5A	16	
University of LaVerne	California	3B	13	
University of Louisville	Kentucky	4A	15	
University of Maine	Maine	6A	13	
University of Maine at Augusta	Maine	6A	9	
University of Maine at Farmington	Maine	6A	10	
University of Maine at Fort Kent	Maine	7A	7	
University of Maine at Machias	Maine	6A	7	
University of Maine at Presque Isle	Maine	6A	10	
University of Maryland, Baltimore	Maryland	4A	-2	
University of Maryland, Baltimore County	Maryland	4A	13	
University of Maryland, College Park	Maryland	4A	16	
University of Maryland, Eastern Shore	Maryland	4A	14	
University of Maryland, University College	Maryland	4A	15	
University of Massachusetts Amherst	Massachusetts	5A	17	
University of Massachusetts Boston	Massachusetts	5A	12	
University of Massachusetts Dartmouth	Massachusetts	5A	13	
University of Massachusetts Lowell	Massachusetts	5A	13	
University of Massachusetts Worcester (Medical School)	Massachusetts	5A	-2	
University of Memphis	Tennessee	3A	15	
University of Miami	Florida	1A	16	
University of Minnesota, Crookston	Minnesota	7A	11	
University of Minnesota, Duluth	Minnesota	7A	13	
University of Minnesota, Morris	Minnesota	6A	11	
University of Minnesota, Twin Cities	Minnesota	6A	16	
University of Mississippi	Mississippi	3A	16	
University of Missouri - Columbia	Missouri	4A	16	
University of Missouri - Kansas City	Missouri	4A	15	
University of Missouri - Saint Louis	Missouri	4A	12	
University of Mount Union	Ohio	5A	11	
University of Nevada, Las Vegas	Nevada	3B	15	
University of Nevada, Reno	Nevada	5B	15	
University of New England	Maine	6A	11	
University of New Hampshire	New Hampshire	5A	17	
University of New Mexico Main Campus	New Mexico	4B	15	
University of New Mexico Valencia	New Mexico	4B	2	
University of North Carolina at Chapel Hill	North Carolina	4A	16	
University of North Carolina at Charlotte	North Carolina	3A	16	

University of North Dakota	North Dakota	7A	16	
University of North Texas	Texas	3A	15	
University of Oklahoma Norman Campus	Oklahoma	3A	16	
University of Oregon	Oregon	4C	15	
University of Pennsylvania	Pennsylvania	4A	17	
University of Portland	Oregon	4C	14	
University of Puget Sound	Washington	4C	11	
University of Redlands	California	3B	14	
University of Rhode Island	Rhode Island	5A	16	
University of Richmond	Virginia	4A	14	
University of Saint Thomas	Minnesota	6A	13	
University of South Carolina Aiken	South Carolina	3A	9	
University of South Carolina Beaufort	South Carolina	3A	2	
University of South Carolina Columbia	South Carolina	3A	16	
University of South Carolina Salkehatchie	South Carolina	3A	1	
University of South Carolina Sumter	South Carolina	3A	2	
University of South Carolina Union	South Carolina	3A	1	
University of South Carolina Upstate	South Carolina	3A	12	
University of South Florida	Florida	2A	15	
University of Southern Maine	Maine	6A	12	
University of Southern Mississippi	Mississippi	3A	16	
University of Tennessee, Chattanooga Campus	Tennessee	4A	13	
University of Tennessee, Knoxville	Tennessee	4A	16	
university of Toledo Main Campus	Ohio	5A	15	
University of Utah	Utah	5B	15	
University of Vermont	Vermont	6A	14	
University of Washington Bothell	Washington	4C	9	
University of Washington Seattle	Washington	4C	15	
University of Washington Tacoma	Washington	4C	9	
University of Wisconsin-Eau Claire	Wisconsin	6A	13	
University of Wisconsin-Green Bay	Wisconsin	6A	13	
University of Wisconsin-Oshkosh	Wisconsin	6A	13	
University of Wisconsin-River Falls	Wisconsin	6A	13	
University of Wisconsin-Stevens Point	Wisconsin	6A	13	
University of Wisconsin-Stout	Wisconsin	6A	13	
University of Wisconsin-Whitewater	Wisconsin	6A	13	
University of Wyoming	Wyoming	6B	15	
Ursinus College	Pennsylvania	4A	11	
Utah State University	Utah	6B	15	
Valdosta State University	Georgia	2A	12	
Valencia Community College	Florida	2A	5	
Vermilion Community College	Minnesota	7A	2	
Victor Valley College	California	3C	4	
Villanova University	Pennsylvania	4A	14	
Virginia Commonwealth University	Virginia	4A	15	
Virginia Wesleyan College	Virginia	4A	10	

Wake Technical Community College	North Carolina	4A	4	
Warren Wilson College	North Carolina	4A	8	
Washington & Jefferson College	Pennsylvania	5A	11	
Washington and Lee University	Virginia	4A	11	
Washington College	Maryland	4A	11	
Washington State University Pullman	Washington	5B	16	
Washington State University Spokane	Washington	5B	6	
Washington State University Tri-Cities	Washington	5B	6	
Washington State University Vancouver	Washington	4C	6	
Washtenaw Community College	Michigan	5A	4	
Weber State University	Utah	5B	15	
Wells College	New York	5A	8	
Wentworth Institute of Technology	Massachusetts	5A	-2	
Wesley College	Delaware	4A	11	
Wesleyan College	Georgia	3A	7	
Wesleyan University	Connecticut	5A	14	
West Los Angeles College	California	3B	3	
Western (Wisconsin) Technical College	Wisconsin	6A	3	
Western Connecticut State University	Connecticut	5A	13	
Western Iowa Tech Community College	Iowa	5A	3	
Western Michigan University	Michigan	5A	15	
Western Oregon University	Oregon	4C	12	
Western State College of Colorado	Colorado	7B	10	
Western Washington University	Washington	4C	16	
Westminster College Utah	Utah	5B	10	
Wheelock College	Massachusetts	5A	8	
Whitworth University	Washington	5B	11	
Wilkes University	Pennsylvania	5A	10	
Willamette University	Oregon	4C	11	
William Paterson University of New Jersey	New Jersey	5A	12	
Wilson (Technical) Community College	North Carolina	3A	2	
Wilson College	Pennsylvania	5A	7	
Winona State University	Minnesota	6A	13	
Wofford College	South Carolina	3A	11	
Worcester State College	Massachusetts	5A	12	
Xavier University	Ohio	4A	13	
Yeshiva University	New York	4A	14	
American Public University System	LACK OF CARNEGIE			
Anaheim University	LACK OF CARNEGIE			
Bainbridge Graduate Institute	LACK OF CARNEGIE			
Bridgemont Community & Technical College	LACK OF CARNEGIE			
Central New Mexico Community College	LACK OF CARNEGIE			
Confederation College	LACK OF CARNEGIE			
Interdenominational Theological Center	LACK OF CARNEGIE			

Missouri University of Science & Technology	LACK OF CARNEGIE			
Northeast Lakeview College	LACK OF CARNEGIE			
Presidio Graduate School (of Management)	LACK OF CARNEGIE			
State University of New York, Upstate Medical University	LACK OF CARNEGIE			
The Universities at Shady Grove	LACK OF CARNEGIE			
University of Maryland, Center for Env. Science	LACK OF CARNEGIE			
University of Minnesota, Rochester	LACK OF CARNEGIE			
Manchester Community College	LACK OF CARNEGIE (NH)			
Anna Maria College	REMOVED DUE TO ABNORMAL EMISSIONS INFO			
Paul Smith's College of Arts & Sciences	REMOVED DUE TO ABNORMAL EMISSIONS INFO (-518499)			

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