Square Peg, Square Hole:
Important Considerations in the Appointment of ACUPCC Implementation Liaisons

by

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__________________________________________________________
Ryan L. Tuttle, Author
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ABSTRACT

Ryan L. Tuttle for the degree of Master of Public Policy
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Title: Square Peg, Square Hole:
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The absence of federal climate legislation in the United States has led to a growth of sub-federal and non-governmental programs to combat greenhouse gas emissions. One such program, the American College and University Presidents’ Climate Commitment (ACUPCC) seeks to mitigate greenhouse emissions from higher education through the voluntary commitment of signatory institutions to become carbon neutral. Signatory institutions appoint an implementation liaison (IL) who is responsible for running ACUPCC activities, leading the development of a Climate Action Plan (CAP), and reporting on progress to the ACUPCC. Accountability is an important element in voluntary programs such as the ACUPCC, and assessing the factors which lead to program success and program accountability is critical to this endeavor. This paper seeks to understand the role that the implementation liaison’s background and capacity within the institution plays in successful implementation of the ACUPCC. Through logistic analysis of ACUPCC signatories’ implementation profiles and their reporting status, this paper presents evidence that the role of implementation liaisons in their respective institution has a significant effect on compliance with ACUPCC deadlines. Institutions which appoint implementation liaisons who specialize in sustainability or environmental issues or are from environmentally-based offices on campus are less likely to be delinquent in their reporting requirements than institutions whose IL comes from a non-environmental background or office.

KEYWORDS: CLIMATE ACTION PLANNING | CLIMATE CHANGE | ORGANIZATIONAL THEORY
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Growing international awareness of the impending consequences of anthropogenic climate change has highlighted the need for proactive measures to mitigate production of greenhouse gasses (Lemons, 2011, p. 380). Despite scientific consensus on the necessity of taking action against climate change, global action remains piecemeal at best. To date, the United States, a major contributor to climate change, has no national plan to mitigate emissions (Lemons, 2011, p. 381). In the absence of meaningful federal action, the onus of fighting climate change has fallen to a patchwork of cities, states, and non-governmental organizations.

One of the unique non-governmental initiatives to fight climate change is the American College and University Presidents’ Climate Commitment (ACUPCC). The ACUPCC is a voluntary initiative signed by presidents of US institutions of higher education (IHEs) expressing institutional dedication to achieve climate neutrality on campus. This initiative is critically important for two major reasons: first, it demonstrates that voluntary efforts to mitigate climate change are gaining support across the country; second, and perhaps more importantly, institutions of higher education play a unique leadership role in the development of academic attitudes toward the gravity of combating climate change, often serving as cultural centers and sounding boards for innovation within their local communities (Huen et al. 2009; Dyer and Andrews 2011). Committing an institution to action is a crucial first step in combating climate change; however, implementing and assessing the success of climate action programs is a challenging and ongoing process. Progress reporting and reporting standards serve a critical role
in climate change and sustainability programs; these reports and standards help mitigate the risk of greenwashing, and allow participants to learn from triumphs and shortcomings of their peers.

ACUPCC institutions exhibit wide divergence in their level of compliance, some institutions are in full compliance while others struggle to meet any of their established deadlines. Reporting and assessment provide an excellent venue for examining the variety of variables that may influence an institution’s commitment and success in achieving climate action goals. This research focuses specifically on the role of the ACUPCC Implementation Liaison (IL) – the point person responsible for carrying out and reporting climate action progress at the institutional level. While institutions can do little to change major structural variables such as institution size or enrollment, designating the most appropriate individual to serve as implementation liaison is a major variable which can be more readily adjusted.

The hypotheses of this research are twofold: the first, ACUPCC institutions which appoint implementation liaisons with a sustainability or environmental career focus are expected to exhibit fewer reporting delinquencies due to anticipated differences in motivation, knowledge, and institutionalized leadership over non-environmentally focused liaisons; second, institutions which implement an IL from an environmental or sustainability related department or office are expected to exhibit fewer reporting delinquencies than institutions whose IL resides in a non-environmental department – such as facilities or finance.

The following section will outline the challenges of climate change, the role of sub-federal and non-governmental entities in combatting climate change, history and structure of the ACUPCC, and the state of the literature regarding climate action planning and best practices. Section III provides necessary theoretical background, while Section IV presents the dataset,
variables, and logistical model utilized. Results are presented in Section V before discussing the findings and limitations of the study in Section VI. Finally, Section VII will conclude with a summary of the importance of the findings to the climate action planning literature, and an appraisal of future directions.
Anthropogenic Climate Change and National Responses

Anthropogenic climate change – the altering of baseline climate patterns partially-resulting from human-introduced greenhouse gases such as carbon dioxide and methane – traps radiative heat in the atmosphere, resulting in an increase in average planetary temperature (Pachauri, 2008). Left unchecked, current simulations suggest that increasing carbon concentrations will result in negative consequences such as: oceanic warming and rising, alteration of ecosystem weather patterns and seasons, and growing incidences of climatic feedback loops which exacerbate the intensity of climate change (Pachauri, 2008). While there are a number of disparate projections on the acceptable “tipping point” of carbon concentration to prevent runaway climate change (the point at which positive feedback loops take over and humans lose their ability to moderate greenhouse gas levels at any effective manner) there is consensus that current consumption patterns are unsustainable and will result in increasingly severe climatic, ecological, and financial damage if left at the status quo (Rockström et al. 2009).

In response to the growing body of evidence provided by the scientific community, a number of international panels and treaties have been devised to study and react to the issues presented by global climate change. The United Nations’ Intergovernmental Panel on Climate Change (IPCC) has been widely responsible for building consensus on the scientific realities of climate change, while treaties such as the Kyoto Protocol were enacted to bind signatory countries to take proactive action in the face of climate change. The most widely prescribed solution to runaway climate change is mitigation of carbon emissions and the eventual creation...
of a carbon-neutral society – one which produces no net-carbon emissions through human activities (Pachauri, 2008).

Combatting climate change will require unprecedented global cooperation; the innumerable number of pollution sources dictates that action should be taken from the highest possible level in order to provide the highest level of coordination. Many nations have chosen to sign non-binding international agreements such as the Kyoto Protocol along with development of national legislation. The United States, however, has failed to take meaningful action toward ameliorating climate change at the federal level. In the absence of nationwide initiatives, and agreements that impose significant penalties on signatories for non-compliance, a number of subnational and non-governmental programs have begun to appear across America (Benson, 2010, p. 1025).

Among the highest profile examples of sub-federal climate planning the United States has been the emergence of three regional greenhouse gas programs: The Northeastern Regional Greenhouse Gas Initiative (RGGI), the Western Climate Initiative (WCI), and Midwestern Regional Greenhouse Gas Reduction Accord (MRGGRA) (Benson, 2010, p. 1028). States that voluntarily agree to join these initiatives become part of cap-and-trade systems similar to those proposed at the federal level and in international agreements such as the European Union Emissions Trading Scheme (EU ETS) (Benson, 2010, p. 1028-1029). The three emissions-trading schemes utilize mandatory compliance periods and enforce penalties for non-compliance equal to three times the discrepancy in allowances at the end of the period (Zyla, 2010, p. 4).

While these programs present high potential, they also face a number of challenges. In particular, the presence of a regional commitment may incentivize some companies to outsource
highly polluting enterprises – such as power production – to neighboring non-signatory states (Benson, 2010, p. 1030). This action creates a potential penalty for states that participate in greenhouse agreements, as they risk job attrition to neighboring non-signatories, one of the drawbacks to regional, rather than federal cap-and-trade programs.

In addition to regional approaches, a number of states have adopted sustainability policies and practices through a variety of programs (Dernbach, 2012, p. 87). These initiatives have grown rapidly and have spawned two federal websites for tracking and disseminating initiatives – The Department of Energy’s Database of State Incentives for Renewables and Efficiency (DSIRE) and the Center for Climate and Energy Solutions (C2ES) (Dernbach, 2012, p. 89). Far from being comprehensive, however, state initiatives tend to be focused towards energy-related concerns; as Dernbach explains, “Only four states—Minnesota, New Jersey, Oregon, and Washington—have addressed sustainability in a holistic fashion through the use of executive orders, planning, and periodic reporting on progress. Instead, states tend to be focusing principally on energy.” (2012, p. 89)

Studies by Delmas and Montes-Sancho (2011) and Carley (2009) have explored the efficacy of two of the energy programs introduced by states: the Renewable Portfolio Standard (RPS) and the Mandatory Green Power Option (MGPO). State run RPS programs require that a portion of the state’s power be derived from renewable energy sources; these programs stipulate that utilities must invest in providing a specified percentage of their electricity generation from renewable sources (Carley, 2009, p. 3071). Renewable Portfolio Standard programs have grown dramatically in the past two decades from only three programs in 1998, to 29 states and the District of Columbia in 2012 (Carley, 2009 p. 3071; Dernbach, 2012, p. 89). While the growth of
these programs is promising, their effectiveness remains an ongoing question. Carley found no statistical relationship between RPS policies and states’ percentage of renewable energy (2009, p. 3077); however, RPS employing states have seen an increase in total renewable energy (rather than percent of total), indicating that RPS programs may be helping states make some progress toward greater renewable production relative to the status quo (p. 3079). Carley’s research points to poorly structured design and weak enforcement mechanisms as a potential flaw in the implementation of RPS programs, indicating that enforcement and design are critical elements of designing climate and energy programs (2009, p. 3079).

Mandatory Green Power Options (MGPOs), which compel energy suppliers to “provide an option for their customers to purchase green power either directly from their electric company or from an alternative provider,” are employed by 24 states and appear to have a more effective track record than their RPS counterparts (Delmas and Montes-Sancho, 2011, p. 2274). Delmas and Montes-Sancho found that MGPO programs were effective in improving installed renewable energy capacity, and ascribed this success in-part to the market-oriented qualities of Mandatory Green Power Options (2011, p 2282).

State-led programs have proven to be a mixed-bag of RPS, MGPO, energy-efficient building codes, greenhouse gas inventories, and a variety of other initiatives. Ultimately many of the states have taken progressive stances on climate change and energy efficiency, but to varying effect, with the more liberal coastal and midwestern portions of the nation generally advancing more rapidly than the more dominantly conservative southern regions of the country (Dernbach, 2012, p. 89-93).
Recently, a number of city governments have also ventured into the climate action arena by producing municipal climate action plans to deal with their greenhouse gas emissions. The value of these plans, however, has been called into question by recent research, which suggests that city plans have heretofore failed to induce major action toward reducing greenhouse gasses. Kousky and Schneider (2003) note that the reduction targets of many cities are fairly modest (p. 11), and that most mitigation is driven by financial and political rationale rather than genuine environmental concern – a condition which may threaten the long term viability of municipal climate plans (p. 3). In his 2012 study of municipal climate plans, Adam Millard-Ball argues that climate plans prove to be largely rhetorical devices with little practical effect on the decisions of local government and citizenry (p. 289). Ultimately, Millard-Ball concludes that city climate action plans largely exist as a way to rebrand existing initiatives or produce planned cost savings in a politically appealing package (p. 291). He notes that one plausible reason for the failure of municipal climate action plans to make marked differences in city emissions is the lack of enforceable mechanisms within many climate action plans; the plans largely represent a roadmap rather than a coherent policy program with legal penalties (2012, p. 302). Similar to the findings from Renewable Portfolio Standards, this finding reinforces the idea that a recurring shortcoming of subnational climate action policies arises in the form of weak enforcement mechanisms and penalties.

The American College and University Presidents’ Climate Commitment

While sub-federal initiatives offer some hope of action in ameliorating climate change, one of the more intriguing developments in the last decade has been the implementation of the American College and University Presidents’ Climate Commitment (ACUPCC). The ACUPCC
is a nationwide commitment signed by college and university presidents that commits their institution to set a self-imposed date by which they will become climate neutral – that is, through reductions and offsets, the operation of the institution will produce no net greenhouse gas emissions (White, 2008, p. 218)

The ACUPCC began in 2006 with an initial group of 12 signatory schools (ACUPCC, 2010, p. 4). As the program grew, it integrated with the Association for the Advancement of Sustainability in Higher Education (AASHE) and Second Nature to develop a fully fledged program and support system. In the 8 years since its founding, the ACUPCC has grown to nearly 700 institutions (ACUPCC, 2010, p. 4). As of 2010, American institutions of higher education were estimated to makeup approximately 2% of all United States greenhouse gas emissions, with ACUPCC signatories representing approximately 0.6% of all emissions (Sinha et al. 2010, p. 58). Elimination of emissions associated with member schools would mark an important step in reducing US greenhouse emissions; this also represents an important symbolic step on the gravity of fighting climate change, one that carries into the minds of future generations through students attending ACUPCC institutions.

While the emissions reductions achieved through the ACUPCC are a critical outcome of the process, equal weight should be given to the leadership role that signatory institutions play in producing a generation of scholars and professionals with climate literacy – that is, that they understand the importance of combatting climate change. Colleges and universities stand in a unique position to influence the mindsets of their students. Combatting climate change hinges on knowledge of a wide variety of disciplines and carries a strong ethical dimension that must be cultivated. By taking up the mantle of combating climate change, higher education institutions
take responsibility for imparting the ethical necessity of solving climate change on their students (Cortese et al. 2008, p. 2; Lemons, 2011, p. 383). With this responsibility in mind, the ACUPCC requires participants to include information on how sustainability will be integrated into their curriculum as part of the climate action plan, which they ultimately submit as part of the process. As Brylinsky notes in her assessment of ACUPCC progress, “The impact of leading by example is felt most directly by the over 6 million students who attend an ACUPCC institution (approximately one-third of all college and university students in the United States)” (2012, p. 153).

The programmatic responsibilities of ACUPCC signatories are relatively straightforward. In the first year, signatories develop their implementation structure by appointing an Implementation Liaison (IL) who is responsible for leading implementation efforts and communicating progress to the ACUPCC. Institutions also commit to a series of tangible actions, submit an implementation profile, and provide a greenhouse gas inventory. Within two years, the institution is responsible for developing a Climate Action Plan (CAP), which sets a target climate neutrality date – by which the institution will produce zero net-emissions of greenhouse gases – and establishes the processes and strategies that it will use to achieve this neutrality date. Target climate neutrality dates are self-imposed and range dramatically depending on the particular circumstances of the institution. Some institutions have already achieved neutrality, while others have set their neutrality date near the turn of the twenty-second century – the average institution with a currently established date seeks climate neutrality by the year 2041. The third year requires submission of an updated greenhouse gas inventory, which must be submitted every other year indefinitely, and the fourth year requires submission of a CAP Progress Report, also
due every other year (ACUPCC, 2010, p. 6). These reports are compiled by Second Nature and kept in a publicly available reporting system as the primary system of accountability and transparency in the ACUPCC process.

The Implementation Liaison serves a critical role in carrying out the ACUPCC commitment of a signatory school. Tasked with communicating and reporting on status, the IL is the primary individual responsible for holding their institution accountable to the ACUPCC (ACUPCC, 2013a). External visibility of the IL varies widely, with some institutions widely recognizing their Liaison for their work, while other institutions show little outward evidence of their participation in the ACUPCC. The ACUPCC and Second Nature have organized seminars and support structures to help implementation liaisons, focusing on peer-to-peer mechanisms to ensure implementation liaisons have all the resources they need to successfully guide their institution through the ACUPCC process (ACUPCC, 2013b; ACUPCC, n.d.).

As ACUPCC membership grows and the program becomes more widely recognized, the importance of reporting and accountability becomes increasingly critical. Sustainability activities have enjoyed a positive reputation during the past decade, particularly on college and university campuses (Breen, 2010, p. 685). Because of the competitive nature of modern higher education, morally laudable commitments such as the ACUPCC risk being used as greenwashing leverage in the pursuit of attracting prospective students. These risks increase the necessity of standardized reporting and oversight to ensure institutions are held accountable to their climate action commitments.

Preliminary examination of selected ACUPCC climate action plans revealed a wide variation in plan quality. Some plans provide intricate detail to mechanisms designed for
achieving climate neutrality, while other plans read more like an advertising pamphlet of existing sustainability and energy efficiency programs. Accountability is important to protect against the phenomena of repackaging existing sustainability programs – such as those observed by Millard-Ball in city climate action planning – it also helps ensure that institutions are not using ACUPCC signatory status as a greenwashing mechanism to entice students while failing to follow through on their commitment.

Reporting therefore serves a crucial role in the ACUPCC, allowing a measure of accountability by making progress public and enabling research to explore best practices that may improve the chances of success for new and existing ACUPCC signatories. Previous literature suggests that cross-institutional reporting is an important element in assisting colleges and universities that fall behind in sustainability initiatives (Shriberg, 2002a, p. 153-154). As Shriberg notes: “assessment tools can help alleviate this problem through identification of best practices and focusing campus efforts on continual improvement. These tools also facilitate communication of progress within and across institutions, which is key to mutual success in moving toward the ambitious and amorphous target of sustainability in higher education” (Shriberg, 2002a, p. 154).

**ACUPCC Reporting and Assessment of Structural Best Practices**

There is a dearth of research assessing best practices of higher education institutions attempting to implement climate action planning. Most of the existing literature more directly addresses general campus sustainability measures rather than climate action. Furthermore, as James and Card (2012) note, much of this research primarily consists of comparison studies and case studies that detail specific sustainability initiatives – often in a manner more akin to self-

Addressing this gap in the literature is a critical step in improving the success of ACUPCC signatories in implementing and achieving their CAP goals.

Evidence of the challenges that ACUPCC fulfillment faces is already present in the literature, one study notes that despite the intentions of the ACUPCC and Second Nature to maintain its reporting database as a source of transparency and accountability, a number of signatories are long overdue on reporting their progress (Breen, 2010, p. 687). Because this reporting system is the only major source of accountability in the ACUPCC process, institutions that fall behind are subject to little scrutiny other than the potential for interested parties to lookup their status in the reporting system.

Improving reporting rates is a critical component in improving the accountability of the system. Because the ACUPCC and Second Nature maintain such a large cross-institutional database of climate action data, it is possible to examine this data for evidence of patterns and best practices which help ensure that signatory schools are meeting their reporting and progress deadlines. This paper focuses specifically on the role that the career focus and home office of the implementation liaison plays in reporting success using data from the ACUPCC database with the following section providing the necessary theoretical background for this endeavor.
SECTION III – THEORETICAL FRAMEWORK

This paper seeks to explore whether a significant relationship exists between the structure of ACUPCC implementation and the success of the institution in carrying out ACUPCC requirements and objectives. In particular, the primary research question asks whether the departmental focus and position within the institution of the appointed implementation liaison influences the propensity of the institution to miss reporting deadlines. I hypothesize that institutions with an implementation liaison appointed from an environmentally-directed component of the institution, such as an office of sustainability or environmental studies department, or with a sustainability-related position in the existing hierarchy will preside over a lower probability of reporting delinquency than institutions whose implementation liaison is situated in a non-sustainability-related position, such as university finance or plant services. This section outlines the theoretical background which underlies the aforementioned hypotheses. Because the literature on climate action programs in higher education is sparse, most relevant examples of campus change and organization for this study come from organizational theory and the emerging field focused on the growth of campus sustainability programs – a natural companion program to CAP planning.

College and University Organization

Examining the structure of climate change initiatives necessitates an understanding of the multifaceted complexity of college and university administration. The interplay between faculty, administration, trustees, and students makes campus governance uniquely challenging to classify and explain (Posner and Stuart, 2013, p. 265-266).
Shriberg’s (2000) analysis of sustainability in higher education offers one of the most comprehensive approaches to campus organization as it applies to the topic at hand. Shriberg begins by noting the Weberian approach to bureaucratic organization, which focuses on creating defined roles for specialized administrators to perform in order to minimize organizational ambiguity and uncertainty (Shriberg, 2000, p. 23; Weber, Translated 1946). He continues his model of campus organizations by noting later developments in organizational theory such as rational decision-making and institutional culture processes leading to internal bargaining processes and power struggles, ultimately concluding that there is no general consensus in the literature on organizational decision-making, but that scholars do agree that “colleges and universities are complex, with multiple competing interests” (2000, p. 24-25).

Shriberg’s analysis of campus organization continues with a discussion of several key attributes arising in the literature: diffuse power, the symbolic leadership of university presidents, the relatively horizontal and loosely coupled orientation of the campus leadership, and low levels of accountability within the organization (2000, p. 25-27). Colleges and universities are traditionally heavily resistant to change due to high decentralization, but recent decades have shown their propensity to implement change and take leadership in a number of social issues such as “diversity, smoking, fair wages, and apartheid” (p. 30-31). Ultimately, Shriberg argues that: “since sustainability is by definition a long-term view of the environment, to be successfully implemented and maintained, it must become part of the culture of the campus” (p. 32). This call for campus leadership toward an institutionalized focus on sustainability is a key argument in favor of developing strong institutional elements to implement climate action mechanisms within ACUPCC signatories.
A Model of Institutional Change Toward Sustainability

Aaron Allen’s examination of sustainability efforts at Tulane University in Louisiana provides a model for institutional change as it applies to the implementation of sustainability programs. Allen’s study of the institutional change literature yields six critical variables for change: advocacy, policy, resources, leadership, means and ends, and education (Allen, 1999, p. 16-17). The model of institutional change begins with advocacy and traces a series of steps toward achievement of desired means and ends. While all six variables are important components of Allen’s model, the three most critical variables to the current study are the “Leader(s)” variable – represented in this study by the department and title of the implementation liaison – the “Resources” variable – represented in this study by the presence of a dedicated department and other variables such as the size of the implementation structure, and the “Means and Ends” variable – represented in this study by the delinquency or non-delinquency of the institution in meeting required ACUPCC reporting requirements. The following sections will discuss how leadership and resources influence means and ends in further depth.

The Role of Leadership

Allen’s discussion of the leadership variable begins by noting that: “Leadership is the most important element for change. Lack of leadership is a common barrier to any kind of change […] Advocacy procures the leadership position, while policy and resources support it” (Allen, 1999, p. 22). Leadership – represented by the department and title of the implementation liaison – is the primary independent variable in this study and is hypothesized to be the most important element in keeping an ACUPCC school on track with meeting its commitments.
Allen’s model argues that the leader must have power and institutional support, must be centralized, networked, and dedicated, and finally, they must possess “technical, economic and interpersonal skills, as well as knowledge of environmental issues” (Allen, 1999, p. 23-24). This conception of a competent, networked, and dedicated leader is strongly supported in both the sustainability literature and the climate action literature. The following three sections outline these qualities in further depth.

**Technical Knowledge**

Clugston and Calder argue that one of the critical determinants of successful campus sustainability initiatives is the credibility and personality of sustainability champions on campus (1999, p. 6). Technical expertise is crucial to sustainability leadership, in part, because it lends credibility to the individual in charge. Sustainability is an inherently challenging topic, because it draws from a vast number of fields of study, knowledge of these fields is essential for the change agent who wishes to maintain credibility.

Shriberg (2002) noted that surveys of higher education employees revealed strong opinions about the perceived cross-expertise of physical operations employees and academics. Operations employees felt that academics lacked the expertise necessary to understand campus operations, while academics felt that operations employees lacked an appreciation for social and environmental impacts, focusing instead on their budgets to the detriment of environmental issues (p. 193). To be credible, then, the implementation liaison should not only be competent in campus operations and academic administration, but they should also be well-versed in the intricacies of sustainability and its social and environmental costs. The ideal candidate would be
an individual who is able to bridge these two different communities through a level of expertise that lends credibility in the eyes of all factions of campus life.

The dataset lacks a perfect measure of technical expertise, instead, the implementation liaison title is used as a proxy for environmental expertise as it reflects some portion of both the individual’s career interest in sustainability and the educational / professional credentials required to obtain the position.

**NETWORKING**

Coordinating sustainability and climate action requires a systems-thinking approach. Systems-thinking is an understanding that “the entity of a university or other institution of higher learning is composed of interdependent components that can mimic a complex ecosystem. To evolve successfully in a sustainable manner, all the functioning components and linkages within the whole system must be considered” (Koester, 2006, p. 769-770). Effective change agents are those who understand the unique networks of their campus and are able to leverage resources across a variety of sources (Posner and Stuart, 2013, p. 275). In order to bring about profound change, campus sustainability leaders should be able to unite the three primary subcultures of the university – faculty, administration, and students – and create a “shared vision and a sense of organizational alignment in their respective actions” (Sharp, 2002, p. 137). Research by James and Card suggests that the presence of a networked environmental leader provides a focal point for other environmental groups on campus to understand organization and maintain a point of contact (2011, p. 167). Their study of the programs on three campuses found that the presence of big picture leaders who understood the importance of sustainability was critical to success of sustainability programs (p. 170).
As an international parallel to this concept and further reiteration of the role of technical knowledge, Ragaelli (1999) found that the increase in scientific roles in European Union organization has led to the development of “epistemic communities” in the EU which bring together networks of professionals with expertise in different domains. These epistemic communities ultimately institutionalize their leadership by establishing consultative roles, which serve European Commission policy makers (1999, p. 761-769). An ideal campus sustainability leader would thus be expected to have expertise in a variety of fields – including sustainability – and a network of contacts throughout the institution to begin building the process of institutional change through development of an epistemic community within the academic environment.

COMMITMENT TO A VISION OF SUSTAINABILITY

Ideology further plays into the effectiveness of change agents. The mindset of sustainability leaders is a significant contributor to the success of embedding a culture of sustainability within the organization. If the mindset of the leader is not in line with organizational objectives it is far less likely the goals will be achieved (Cacioppe and McDermott, 2009). Change agents who have progressive environmental ideologies, have stronger commitments to environmental action, a finding which is echoed in the state energy program literature (Carley, 2009, p. 3075; Hays et al., 1996, p. 48-49).

The literature further suggests that in developing a campus sustainability leader it is important for this leader to remain specialized in sustainability rather than splitting time between multiple tasks or roles. Rizzo, House, and Lirtzman’s examination of role conflict in complex organizations quotes classical organizational theory in advocating for specialized responsibilities and elimination of conflicting roles when possible (1970, p. 151). This would suggest that
appointing implementation liaisons from unrelated fields would produce inferior results to
implementation liaisons whose primary task is overseeing sustainability and climate action
planning at the institution. This point is supported by recent literature examining the
sustainability movement that argues that institutions which are serious about developing strong
programs should fund an independent sustainability coordinator position (Dade and Hassenzahl,
2013, p. 260; Sharp, 2009, p. 3-4). While it is perfectly feasible for a generic administrator to
complete tasks to improve campus sustainability or push for climate action, the literature
suggests that high levels of change ultimately require investment of time and resources solely
dedicated to advancing sustainability. Again, while it is challenging to get a perfect measure of
the commitment of an implementation liaison to climate action, the professional title of the
individual occupies offers a viable proxy for similar reasons to the assessment of their technical
knowledge

Institutionalized Resources

While the institutionalized leader is a critical variable for this paper, institutionalized
resources are also important in strengthening the capacity of the leader to implement change.
Incorporation of a sustainability vision and institutionalization of personnel and other resources
is key to improving the success of sustainability and climate action programs.

The literature strongly supports the influence of vision and institutional commitment to
building sustainability. A 2008 study by Alshuwaikhat and Abubakar noted that institutions
seeking to promote sustainability must establish a vision, organizational structure, and resources
to be successful (p. 1781). Ferrer-Balas et al. expand this idea: “regarding the relationships
within important actors for universities (internally and externally), a common characteristic for
most of the institutions is establishing and supporting networks of expertise within the
universities” (2008, p. 312). Further studies found that change in higher education is driven
forward by the organizational footing of leadership; institutionalizing innovation is a critical step
in change (Boyce, 2003, p. 123, 132). Finally, Schild (2010) notes that the research on
institutionalization of sustainability concludes that, “successfully institutionalizing sustainability
entails using a whole-systems approach, one that integrates students, faculty and staff within
operations, curriculum, research, and strategic planning” (p. 12-13).

A strong support team of personnel is an important component to providing the
institutionalized leader with necessary resources. Allen notes that providing staff is one possible
means of providing personnel, but other personnel resources such as a coalition of stakeholders
and dedicated space on campus are also important. As Allen observes, “The result of true
institutional change cannot be an ‘add-on’ to the existing structures; it must be an integral part of
the institution (Allen, 1999, p. 20-21). This assertion is supported by other studies such as James
and Card (2011) who found lack of human resources to be a significant barrier to sustainability
(p. 172) and observed that, among the institutions they studied, all three possessed “some form of
sustainability task force committee which provided a structured means of collaboration for all
campus community members” (James and Card, 2011, p. 173). While ACUPCC institutions are
required to establish an implementation structure of some form, the number and variety of
stakeholders, as well as the structure of this implementation varies significantly across signatory
schools.

Finally, the importance of specialized personnel figures heavily in an editorial by Leith
Sharp in 2009. Sharp notes that campus sustainability must move toward a systems-thinking
approach using organizational change strategies. University departments are often not particularly adept at interdisciplinary decision-making because of a long history of territorialism. In the past, interdisciplinary endeavors were often housed in one department, leading to ineffective communication, coordination, and integration (2009, p. 3). Sharp argues it is critical for educational institutions to focus on the role of the sustainability professional. Many institutions currently employ a single coordinator for the entire campus and house them in the facilities department, however without resources, this individual is often doomed to fail (2009, p. 3). Instead of this single leader approach, Sharp argues that it is critical for institutions to make “sizable staffing investment in a change-management function to drive organization-wide progress toward sustainability” (p. 3), that many successful institutions make this change and are able to reap significant progress and financial rewards (1999, p. 3-4).

**Final Considerations**

The literature on voluntary vs. regulatory approaches to policy provides a final take on the role of leadership and motivation in ACUPCC reporting. Studies have indicated that the legitimacy of voluntary agreements, such as the ACUPCC, lag behind regulatory approaches. Lyon and Maxwell’s (2003) study found that voluntary agreements typically arise in the absence of regulatory action, making them a weak instrument for achieving an outcome (p. 1455). Voluntary agreements are typically low on enforcement mechanisms, leading to suspicion regarding their effectiveness and sincerity (Glachant, 2007, p. 32). As a result, voluntary agreements typically fight an uphill battle for credibility. The ACUPCC is a unique case of voluntary agreements; however, it arises largely because of the absence of governmental action on climate change. Establishing legitimacy is a critical endeavor to ward off criticisms of intent
without follow-through, but is difficult without any legal authority. Indeed, Wu and Babcock (1999) noted that, “a successful voluntary program must have a statutory base, a clear and measurable environmental objective, and substantial financial incentives” (p. 159). The ACUPCC does a good job of establishing measurable objectives through the development of mandatory reporting requirements and target climate neutrality dates; however, in the absence of financial incentives or statutory authority, successful implementation lies largely on the shoulders of the individual institutions and the implementation liaisons they appoint, further underscoring the importance of a driven and committed liaison who can push the program forward.

The organizational realities of individual colleges and universities vary widely; however, the importance of a strong leader for institutional change is well documented. The literature suggests that institutions that appoint a dedicated sustainability professional to the role of implementation liaison and surround this individual with personnel and strong stakeholder support will have a higher probability of achieving institutional change and successfully achieving their climate action commitment (Ferrer-Balas, 2008; Koester, 2006; Sharp, 2009). This study aims to provide quantitative evidence to support the hypothesis that an environmental / sustainability oriented implementation liaison will be more successful at keeping his or her institution on track with reporting compliance than one from an unrelated position such as finance or physical plant services.
SECTION IV – DATA AND METHODS

This study documents the factors which influence reporting delinquency in ACUPCC signatory institutions. The dependent variable, Delinquency, is a measure of whether the signatory institution had outstanding reporting requirements in the ACUPCC Second Nature reporting database (Second Nature, 2014) at the time of data collection, February 25, 2014. Institutions that were delinquent in one or more of their mandatory reports were coded as 1, those who were up-to-date in their reporting requirements were coded as 0. Institutions that had not submitted an implementation profile were dropped from the dataset due to inadequate information to include in the regression.

The study employs two series of logistic regression models, with robust standard errors, to assess the influence of implementation liaison occupation, implementation liaison office, and a number of controls on the propensity of an institution to miss ACUPCC administered reporting deadlines and thus fall into delinquency. The two series of models utilize the logistic estimator:

$$\Pr(y_i = 0 \text{ or } 1 \mid x_i) = e^{\beta}/(1+e^{\beta})$$

Each series consists of a baseline comparison of the key independent variable and a number of models with varying control variables. The baseline model is depicted in the following equation:

$$\Pr(\text{delinquent}) = \beta_1 + \beta_2 \text{ Environmental Liaison / Liaison Office} + \beta_3 \text{ Implementation Structure Dummy} + \beta_4 \text{ # of Individuals in Imp. Structure} + \beta_5 \text{ Imp. Start Year} + \beta_6 \text{ Carnegie Dummy} + \beta_7 \text{ Public Private Control Dummy} + \beta_8 \text{ Ave Enroll} + \beta_9 \ln \text{ Ave. Revenue} + \beta_{10} \text{ State Gov.} + \beta_{11} \text{ Governor} + \beta_{12} \text{ Climate Dummy} + \epsilon$$

**Independent Variables**

The $\beta_2$ term “Environmental Liaison / Liaison Office” represents the key independent variable for each of the two series of models run, Environmental Liaison is the key independent variable in Series One, while Series Two uses Liaison Office, a vector of n-1 dummy variables.
The independent variables are run in separate models due to issues of collinearity but are listed together in the model equation for simplicity.

The Series One independent variable “Environmental Liaison” is a dummy variable indicating whether the implementation liaison at a given institution is employed in an environmentally-related capacity independent of their role as ACUPCC Liaison. Liaisons employed in an environmental department or office – such as Office of Sustainability, Environmental Science Department, or Environmental Health and Safety Office – or who play a distinctly environmental role in their department – such as an environmental coordinator in plant services – are coded 1. All other liaisons are coded 0. This variable serves as a proxy for the overall environmental commitment of the implementation liaison and more generally for the organizational allocation of an environmentally interested position within the institution. It is hypothesized that institutions with an environmentally-based liaison will display lower levels of delinquency compared to those whose liaison is from a non environmentally-based position.

Data were derived from the implementation profiles submitted to the ACUPCC reporting system (Second Nature, 2014).

The Series Two independent variable “Liaison Office” is a vector of n-1 dummies representing the office or department on campus that the implementation liaison is appointed from, as opposed to the Environmental Liaison vector which measures the specific role of the liaison, this variable more closely examines the office on campus that the IL is appointed from. The dummies are coded with a value of 1 if they represent the liaison’s home department or 0 if otherwise. The six office types represented are: Environmental Office, offices which are inherently environmental or sustainability oriented such as an Office of Sustainability, this is the
baseline category used for analysis; Plant or Facility Services, offices to do with physical
operation of the institution; President’s Office, offices reporting directly to the President or
Chancellor of the institution; Academic Dept. or Professor, individuals appointed from academic
departments or academic faculty; Financial Dept., offices based in the financial services portion
of the institution; and Other Office, a collection of implementation liaisons appointed from more
generalized positions around campus that do not fit the aforementioned categories.
Implementation liaisons appointed from plant and facility services, financial offices, and other
offices are expected to exhibit a greater incidence of delinquency than those from environmental
offices. These categories were developed through coding the office provided from each
institution’s Implementation Profile in the ACUPCC reporting system (Second Nature, 2014).

Control Variables
The Implementation Structure Dummy is a vector of n-1 categorical dummies which
elaborate on the type of implementation structure used for ACUPCC activities on campus.
Structures included are whether the structure is based on a Center or Institute, Committee, Task
Force, Individual, or Other Structure. Individual serves as the baseline variable, and it is
expected that all other forms will exhibit lower delinquencies than an implementation structure
run by an individual due to increases in resources and networking ability. Also included is the
continuous variable “Num. of Individuals in Imp. Structure,” which represents the total number
of individuals who are a part of the structure making decisions on ACUPCC implementation.
Higher levels of participation are expected to decrease likelihood of delinquency. Finally, “Imp.
Start Year” is a measure of the year in that the institution began ACUPCC implementation. It is
expected that institutions which signed on more recently would produce lower delinquency rates
largely because the number of reporting requirements they are subject to is lower, offering less chances to fall into delinquency. These variables are all derived from the institution’s Implementation Profile on the ACUPCC reporting system (Second Nature, 2014).

Carnegie Dummy is a vector of n-1 dummies representing the Carnegie Classification of the institution – with Associates institutions serving as the baseline. A number of studies of higher education greenhouse gas emissions have seized on the importance of Carnegie institutional classifications as an important variable. Williamson (2012) notes that mobile emissions sources such as commuting vary widely between associate degree-granting institutions and doctoral degree-granting institutions (p. 48). He contends that: “we should expect institutions to have divergent abilities to mitigate GHG emissions because policy options are neither uniformly available nor equally feasible between stationary and mobile sources” (48). It is expected that Bachelor’s, Master’s, and Doctoral institutions will have lower delinquency rates due to greater resources available and lower percentage of commuter students.

Other studies have noted the importance of public/private distinction, along with further assessment of the need to take classification into account when comparing across institutions (Fetcher, 2009, p. 363; White, 2008, p. 219). To account for this, a Public Private Control Dummy is provided, using public institutions as a baseline. Private institutions are expected to perform better than public institutions due to greater flexibility in funding and organization. These variables are derived from the Department of Education’s Integrated Postsecondary Education Data System (IPEDS) (Department of Education, 2014).

Ave Enroll is a measure the average annual enrollment for each institution across their compliance period – implementation to 2012, the last year of data in the IPEDS database. Study
of emissions has found that campus population was a critical variable and that full-time
equivalent (FTE) enrollment figures serve as a useful proxy for campus population (Klein-Banai
and Theis, 2013, p. 36). The importance of enrollment is corroborated by a number of additional
studies and is also used as a rough proxy for campus emissions (Dade and Hassenzahl, 2013, p.
257; Fonseca et al., 2010, p. 27; White, 2008, p. 219).

Ln Ave. Revenue is the logged average annual revenue of the institution across their
implementation period – from implementation start to 2012, the last year of data in the IPEDS
database – adjusted for inflation to 2012 dollars. Financial resources have been identified as
critical to assessing the viability of both municipal and higher education climate action plans.
Steel (2012) notes that revenue trends in local governments influence the ability of the city to
carry out its climate planning process, and due to the late 2000s recession it is also critical to
sample financial data from a range of time to provide a more robust measurement of financial
capacity (p. 8-9). Additional studies have pointed out the importance of finances to overcome
barriers in climate action implementation within higher education (Breen, 2010, p. 12; James and
Card, 2011, p. 171).

Political orientation of the state in which the institution resides is used as a rough proxy
of institutional political orientation as detailed data were not available. “State Gov.” is a
weighted measure of the partisan makeup of the state legislature from implementation year to
present. This data is derived from (http://www.polidata.org/party/). Legislatures were coded 1 if
they were majority Republican controlled, 0 if majority Democratic controlled, and 0.5 if
independent or split between houses. Annual scores were averaged over the timespan to achieve
a weighted score between 0 and 1 to represent the general partisan trend of the state legislature.
“Governor” is a weighted measure of political control over the Governorship in applicable states from implementation year to present. This data is derived from (http://www.polidata.org/party/). Governorships were coded 1 if the governor was Republican, 0 if Democratic, and 0.5 if independent. Annual scores were averaged over the applicable timespan to achieve a weighted score between 0 and 1 to represent the general partisan trend of the state’s governors.

Finally, local climate has been identified in some studies as a potentially important variable to greenhouse emissions (Fetcher, 2009, p. 366); however, other studies have minimized the importance of heating degree days (HDD) on this impact due to their propensity to occur during summer months where institutional attendance is typically attenuated relative to the traditional academic year (Klein-Banai and Theis, 2013, p. 35). The “Climate Dummy” represents a vector of n-1 dummies based on the International Energy Conservation Code’s representation of total Heading Degree Days and Cooling Degree Days (CDD). Zones 3a and 3b are combined to create the baseline category representing the warmer climate of much of Southern California, Northern Texas, and the South. Cooler climates (higher numbers) are expected to see lower delinquency rates due in part to lower energy costs associated with heating than cooling. These data were obtained by cross-referencing institutional counties against the reference charts in Baechlor et al. (2010) p. 2.
SECTION V – RESULTS

Results of the logistic regression models found a number of strong correlations in the structural elements and control variables measured. This section will examine both of the primary model series independently. Preliminary models were conducted using robust standard errors while final models were developed by producing a baseline of the primary independent and dependent variables and then adding controls in steps, these results are described below.

Series One Results

Series One depicts the correlation between the independent variable “Environmental Liaison” and the rate of delinquency of ACUPCC institutions across a series of control variables, results are presented below in Table 1.

Across all models, there is a strong negative correlation between the presence of an environmentally-related implementation liaison and the rate of reporting delinquencies among ACUPCC institutions. Observed p-values remain well below 0.01 across all models and controls.

Institutions whose implementation structure was organized as center or institute, committee, or task-force all saw statistically significant decreases in reporting delinquencies relative to institutions whose structure was self-reported as “individual.” Furthermore, a larger number of individuals in the implementation structure correlated with a slight statistically significant increase in delinquency rate, both conformed to their hypothesized relationships.

Significant relationships also existed in a handful of climate zones. Hot climate zone 2, and two of the cooler climate zones, 5 and 6, exhibited strong negative relationships – relative to the warm climate baseline of zone 3. Interestingly, no relationship was found between the ownership of the school (public vs. private), financial resources of the school (measured by Tuttle
### Table 1: Logistic Regression Results for Series One Reporting Delinquencies

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Baseline</th>
<th>Carnegie</th>
<th>Public -Private</th>
<th>Enroll and Rev</th>
<th>Imp. Struct.</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Liaison</td>
<td>0.4079***</td>
<td>0.4673***</td>
<td>0.4551***</td>
<td>0.4714***</td>
<td>0.4638***</td>
<td>0.4528***</td>
</tr>
<tr>
<td>Carnegie Dummy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Inst.</td>
<td>0.5059</td>
<td>0.5320</td>
<td>0.6124</td>
<td>0.5612</td>
<td>0.5814</td>
<td></td>
</tr>
<tr>
<td>Bacc. Inst.</td>
<td>0.6906</td>
<td>0.6431</td>
<td>0.6652</td>
<td>0.6887</td>
<td>0.6544</td>
<td></td>
</tr>
<tr>
<td>Master’s Inst.</td>
<td>0.5747**</td>
<td>0.5211***</td>
<td>0.5910*</td>
<td>0.6075*</td>
<td>0.5994*</td>
<td></td>
</tr>
<tr>
<td>Doctoral Inst.</td>
<td>0.3544***</td>
<td>0.3362***</td>
<td>0.5968</td>
<td>0.6601</td>
<td>0.5916</td>
<td></td>
</tr>
<tr>
<td>Public Private Control Dummy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Non Profit</td>
<td></td>
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<td>1.0393</td>
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<td>Private For Profit</td>
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<td>(omitted)</td>
<td>(omitted)</td>
<td>(omitted)</td>
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<tr>
<td>State Gov.</td>
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<td></td>
<td>0.5604*</td>
<td>0.5823*</td>
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<td>Governor</td>
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<td></td>
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<td>1.2054</td>
<td>0.9489</td>
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<tr>
<td>Ave Enroll</td>
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<td>1.0000</td>
<td>0.9999</td>
<td>0.9999</td>
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<tr>
<td>Ln Ave. Revenue</td>
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<td>0.7735*</td>
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<td>Imp. Start Year</td>
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<td></td>
<td>0.8855**</td>
<td>0.8968*</td>
<td>0.8873**</td>
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<tr>
<td>Implementation Structure Dummy</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Center or Institute</td>
<td></td>
<td></td>
<td></td>
<td>0.1603***</td>
<td>0.1614***</td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td>0.3824**</td>
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</tr>
<tr>
<td>Other Structure</td>
<td></td>
<td></td>
<td></td>
<td>0.4015*</td>
<td>0.4915</td>
<td></td>
</tr>
<tr>
<td>Task Force</td>
<td></td>
<td></td>
<td></td>
<td>0.2958**</td>
<td>0.3199*</td>
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<tr>
<td>Num. of Indiv in Imp. Structure</td>
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<td></td>
<td></td>
<td>1.0006**</td>
<td>1.0007**</td>
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</tr>
<tr>
<td>Climate Dummy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 1a</td>
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<td>1.5373</td>
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<tr>
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<tr>
<td>Climate 2</td>
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<td></td>
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<td>0.3383**</td>
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<tr>
<td>Climate 3c</td>
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<td>0.5526</td>
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<tr>
<td>Climate 4</td>
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<td></td>
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<tr>
<td>Climate 4c</td>
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<td>0.5221</td>
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<td>Climate 5</td>
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<td></td>
<td>0.5085**</td>
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<tr>
<td>Climate 6</td>
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<td>0.4637**</td>
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<tr>
<td>Climate 7</td>
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<td>638</td>
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<td>46.01</td>
<td>48.02</td>
<td>63.42</td>
<td>81.31</td>
<td>85.30</td>
</tr>
</tbody>
</table>

*Note: Estimation Method is logistic regression with robust standard errors, listed in Odds Ratio. Carnegie Dummy relative to Associates Inst.; Public Private Control Dummy relative to Public Institutions; Climate Dummy relative to Climate 3; Implementation Structure Dummy relative to Individual. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval. Constant included but not shown.*
the natural log of average revenue during the compliance period), or student population size.

Two of the models showed a weakly significant decrease in delinquency rate for institutions with more Republican state legislatures, a relatively surprising but not robust, result.

Initial models show a highly significant decrease in delinquency rate for Master’s and Doctoral Institutions, relative to the Associate Institution baseline. This significance wanes in later models with more controls added, likely due to imperfect multicollinearity with revenue and enrollment control variables which are inflating the Carnegie Dummy standard error. This finding is in line with expectations, although it was expected that Baccalaureate institutions would also experience this decline, but no relationship was found.

The initial model provided ample evidence for a robust negative relationship between environmentally related implementation liaisons and rates of ACUPCC reporting delinquencies. The significant negative relationship for Implementation Start Year does, however, call attention to an additional consideration. Institutions that signed on to the ACUPCC more recently are significantly less likely to have reporting delinquencies than those which signed on in the past. This relationship likely stems partially from the fact that reporting requirements vary across years in the program, so many of the recent signatories have less reporting burden than their older counterparts which are further along in the ACUPCC process. For example, the Climate Action Plan is not due until the second year of implementation, therefore, new signatories would not yet be responsible for submitting a Climate Action Plan; older institutions have more potential reports that may be in delinquency.

A jackknife analysis was run in order to further examine the possibility that Implementation Start Year might be skewing the overall observed relationship. The jackknife
analysis, depicted in Table 2, applies the variables and controls from the Final Model run in Table 1 and runs three additional regressions on the data set, each successively excluding the most recent batch of signatory institutions – for example, the model “2013 and Earlier” depicts only institutions who began implementation in the year 2013 or earlier. This method enables investigation of whether the observed relationships change when institutions with less reporting burden are excluded from the sample.

The jackknife model emphasizes the robustness of the independent variable relationship. The Implementation Start Year control loses significance once the 2014 signatory institutions are excluded from the model, indicating that the significant relationship was driven primarily by new signatories in the most recent year with fewer reporting burdens than older signatories.
<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Full Model</th>
<th>2013 and Earlier</th>
<th>2012 and Earlier</th>
<th>2011 and Earlier</th>
</tr>
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<tr>
<td><strong>Environmental Liaison</strong></td>
<td>0.4528***</td>
<td>0.4467***</td>
<td>0.4561***</td>
<td>0.4497***</td>
</tr>
<tr>
<td><strong>Environmental Liaison</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Carnegie Dummy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Special Inst.</strong></td>
<td>0.5814</td>
<td>0.5329</td>
<td>0.4303</td>
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<td>0.6005*</td>
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<tr>
<td><strong>Doctoral Inst.</strong></td>
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<td>0.6156</td>
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<tr>
<td><strong>Public Private Control Dummy</strong></td>
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</tr>
<tr>
<td><strong>Private Non Profit</strong></td>
<td>0.9875</td>
<td>0.9992</td>
<td>0.9998</td>
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<td><strong>State Gov.</strong></td>
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<td>0.6737</td>
</tr>
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<td><strong>Governor</strong></td>
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<td><strong>Ave Enroll</strong></td>
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<td>0.9999</td>
<td>0.9999</td>
<td>0.9999</td>
</tr>
<tr>
<td><strong>Ln Ave. Revenue</strong></td>
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<td>0.7856</td>
<td>0.8083</td>
<td>0.7865</td>
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<td><strong>Imp. Start Year</strong></td>
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<td>0.9669</td>
<td>1.0441</td>
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<td><strong>Implementation Structure Dummy</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Center or Institute</strong></td>
<td>0.1614***</td>
<td>0.1306***</td>
<td>0.1327***</td>
<td>0.1516***</td>
</tr>
<tr>
<td><strong>Committee</strong></td>
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<td>0.3518**</td>
<td>0.3409**</td>
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<td><strong>Other Structure</strong></td>
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<td>0.4093*</td>
<td>0.4026*</td>
<td>0.3775*</td>
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<tr>
<td><strong>Task Force</strong></td>
<td>0.3199**</td>
<td>0.2689***</td>
<td>0.2570***</td>
<td>0.2844**</td>
</tr>
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<td><strong>Num. of Individuals in Imp. Structure</strong></td>
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<td>1.0008**</td>
<td>1.0008**</td>
<td>1.0007**</td>
</tr>
<tr>
<td><strong>Climate Dummy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Climate 1a</strong></td>
<td>1.5373</td>
<td>1.7466</td>
<td>2.0684</td>
<td>3.916 e</td>
</tr>
<tr>
<td><strong>Climate 1</strong></td>
<td>1.1297</td>
<td>1.0235</td>
<td>0.9662</td>
<td>458608***</td>
</tr>
<tr>
<td><strong>Climate 2</strong></td>
<td>0.3383**</td>
<td>0.3482**</td>
<td>0.3672**</td>
<td>0.3526**</td>
</tr>
<tr>
<td><strong>Climate 3c</strong></td>
<td>0.5526</td>
<td>0.5552</td>
<td>0.5806</td>
<td>0.6566</td>
</tr>
<tr>
<td><strong>Climate 4</strong></td>
<td>0.5503*</td>
<td>0.5733*</td>
<td>0.5973</td>
<td>0.5970</td>
</tr>
<tr>
<td><strong>Climate 4c</strong></td>
<td>0.5221</td>
<td>0.5404</td>
<td>0.5768</td>
<td>0.5887</td>
</tr>
<tr>
<td><strong>Climate 5</strong></td>
<td>0.5085**</td>
<td>0.5175**</td>
<td>0.5522*</td>
<td>0.5500*</td>
</tr>
<tr>
<td><strong>Climate 6</strong></td>
<td>0.4637**</td>
<td>0.4787**</td>
<td>0.4861**</td>
<td>0.5302*</td>
</tr>
<tr>
<td><strong>Climate 7</strong></td>
<td>1.0033</td>
<td>1.0048</td>
<td>1.0537</td>
<td>1.0469</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>1.68 e</td>
<td>8.734 e</td>
<td>1.854 e</td>
<td>2.684 e</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>628</td>
<td>617</td>
<td>601</td>
<td>579</td>
</tr>
<tr>
<td><strong>Chi²</strong></td>
<td>85.30</td>
<td>81.12</td>
<td>77.35</td>
<td>233.98</td>
</tr>
</tbody>
</table>

Note: Estimation Method is logistic regression with robust standard errors. Listed coefficient is in Odds Ratio. Carnegie Dummy relative to Associates institutions; Public Private Control Dummy relative to Public Institutions; Climate Dummy relative to Climate 3; Implementation Structure Dummy relative to Individual. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval.
Series Two Results

Series Two depicts the correlation between the N-1 implementation liaison office dummy variables – using “Environmental Office” as the baseline variable – and the rate of delinquency of ACUPCC institutions across a series of control variables, these results are presented below in Table 3.

The relationships in Series Two are less significant than those in Series One but do still hold some important explanatory power. No significant difference is evident between either the president’s office or professor or academic department variables, relative to an environmental office. The majority of the models exhibit significant positive coefficient for plant and facility services and financial offices, while other miscellaneous offices hold a stronger positive relationship, indicating that institutions whose implementation liaison is based in one of these offices is more likely to be delinquent in their required reporting than institutions whose liaison is based in an environmental office. This result fits with the hypothesis of the study, which stated that the specialization of liaison and availability of resources for an implementation liaison based in an environmental office is expected to result in lower delinquency rates than those who are appointed from plant and facility services or a generic administrative office typically offering less dedicated resources or specialization.

While some significance is lost across models, these results are robust in all but the “All Variables” run which included both Carnegie classifications and implementation structure variables. Correlation tests indicate a number of significant relationships between the N-1 office variables and the Carnegie Classification and Implementation Structure variables indicating that the loss of significance is possibly due to the presence of imperfect
Table 3: Logistic Regression Results for Series Two Reporting Delinquencies

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Baseline</th>
<th>Enroll and Rev</th>
<th>Politics</th>
<th>Climate</th>
<th>All Variables</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Implementation Office Dummy</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant or Facility Services</td>
<td>1.5628**</td>
<td>1.5054*</td>
<td>1.4891*</td>
<td>1.5464*</td>
<td>1.4028</td>
<td>1.5465*</td>
</tr>
<tr>
<td>President's Office</td>
<td>1.4429</td>
<td>1.2864</td>
<td>1.2368</td>
<td>1.2810</td>
<td>1.1577</td>
<td>1.2810</td>
</tr>
<tr>
<td>Academic Dept. or Professor</td>
<td>1.5085</td>
<td>1.1257</td>
<td>1.1004</td>
<td>1.2267</td>
<td>1.1612</td>
<td>1.2267</td>
</tr>
<tr>
<td>Financial Dept.</td>
<td>1.9799**</td>
<td>1.6924*</td>
<td>1.6527</td>
<td>1.7850*</td>
<td>1.5777</td>
<td>1.7850*</td>
</tr>
<tr>
<td>Other Office</td>
<td>2.5141***</td>
<td>2.0398**</td>
<td>1.9787**</td>
<td>2.0759**</td>
<td>1.7112*</td>
<td>2.0759**</td>
</tr>
<tr>
<td>Ave Enroll</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>0.9999</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Ln Ave. Revenue</td>
<td>0.6366***</td>
<td>0.6491***</td>
<td>0.6486***</td>
<td>0.7541*</td>
<td>0.6486***</td>
<td>0.6486***</td>
</tr>
<tr>
<td>Imp. Start Year</td>
<td>0.8912**</td>
<td>0.9010**</td>
<td>0.8891**</td>
<td>0.8943**</td>
<td>0.8891**</td>
<td></td>
</tr>
<tr>
<td><em>Public Private Control Dummy</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Non Profit</td>
<td>0.8106</td>
<td>0.8266</td>
<td>0.9883</td>
<td>0.8266</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private For Profit</td>
<td>(omitted)</td>
<td>(omitted)</td>
<td>(omitted)</td>
<td>(omitted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Gov.</td>
<td>0.5041**</td>
<td>0.6079</td>
<td>0.6804</td>
<td>0.6079</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governor</td>
<td>1.3648</td>
<td>0.9898</td>
<td>0.9601</td>
<td>0.9898</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Climate Dummy</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 1a</td>
<td>2.3795</td>
<td>1.9138</td>
<td>2.3795</td>
<td>2.3795</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 1</td>
<td>0.6700</td>
<td>0.8831</td>
<td>0.6700</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Climate 2</td>
<td>0.4155*</td>
<td>0.3590**</td>
<td>0.4155*</td>
<td>0.4155*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 3c</td>
<td>0.5600</td>
<td>0.5771</td>
<td>0.5600</td>
<td>0.5600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 4</td>
<td>0.5072**</td>
<td>0.5492*</td>
<td>0.5072**</td>
<td>0.5072**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 4c</td>
<td>0.4241</td>
<td>0.4594</td>
<td>0.4241</td>
<td>0.4241</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 5</td>
<td>0.4858**</td>
<td>0.5126**</td>
<td>0.4858**</td>
<td>0.4858**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 6</td>
<td>0.4345**</td>
<td>0.4561**</td>
<td>0.4345**</td>
<td>0.4345**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 7</td>
<td>0.6955</td>
<td>0.9753</td>
<td>0.6955</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Implementation Structure Dummy</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Center or Institute</td>
<td>0.1844***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Committee</td>
<td>0.5409</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Structure</td>
<td>0.5637</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task Force</td>
<td>0.4176*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Num. of Individuals in Imp. Structure</td>
<td>1.0007**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.6629**</td>
<td>8.38 e</td>
<td>2.388 e</td>
<td>1.45 e</td>
<td>2.20 e</td>
<td>1.45 e</td>
</tr>
<tr>
<td>N</td>
<td>649</td>
<td>629</td>
<td>628</td>
<td>628</td>
<td>628</td>
<td>628</td>
</tr>
<tr>
<td>Chi²</td>
<td>13.21</td>
<td>42.39</td>
<td>48.71</td>
<td>54.952</td>
<td>71.71</td>
<td>54.952</td>
</tr>
</tbody>
</table>

Note: Estimation Method is logistic regression with robust standard errors. Listed coefficient is in Odds Ratio. Public Private Control Dummy relative to Public Institutions; Climate Dummy relative to Climate 3; Implementation Structure Dummy relative to Individual. Carnegie Dummy included but not shown for space (insignificant). *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval.
multicollinearity. VIF scores for doctoral institution, baccalaureate institution, committee, task force, and other structure all exceed at least a 2.5 threshold, lending further evidence to the potential for multicollinearity. The final model omits the correlated control variables to avoid the inflation of standard errors caused by multicollinearity.

Control variables in the Series Two runs exhibit many of the same relationships observed in Series One. Unlike Series One, Series Two exhibits a significant, negative relationship between average institutional revenue and delinquency rate. This is consistent with the expected hypothesis and is likely more visible due to the exclusion of Carnegie classification from the final model. Other differences include the significance of one additional climate variable (zone 4) and general fluctuation of the overall significance level of some minor controls.

Series Two presents similarly robust results to those observed in Series One – with the exception of the aforementioned multicollinearity issues. A second jackknife exercise was performed on Series Two to explore any potential effects of implementation start year and total reporting obligations on the reliability of the final model relationships. This model is depicted in Table 4 below. As with the jackknife performed on Series One, the Series Two jackknife confirms the robustness of the observed relationship across various years.
Table 4: Jackknife Logistic Regression Results for Series Two Reporting Delinquencies

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Full Model</th>
<th>2013 and Earlier</th>
<th>2012 and Earlier</th>
<th>2011 and Earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation Office Dummy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant or Facility Services</td>
<td>1.5465*</td>
<td>1.5409*</td>
<td>1.5082*</td>
<td>1.5237*</td>
</tr>
<tr>
<td>President’s Office</td>
<td>1.2810</td>
<td>1.2398</td>
<td>1.0915</td>
<td>1.0366</td>
</tr>
<tr>
<td>Academic Dept. or Professor</td>
<td>1.2267</td>
<td>1.2700</td>
<td>1.4114</td>
<td>1.3615</td>
</tr>
<tr>
<td>Financial Dept.</td>
<td>1.7850*</td>
<td>1.3906*</td>
<td>1.7158*</td>
<td>1.9361**</td>
</tr>
<tr>
<td>Other Office</td>
<td>2.0759**</td>
<td>1.9609**</td>
<td>1.9922**</td>
<td>1.8894**</td>
</tr>
<tr>
<td>Ave Enroll</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.0000</td>
</tr>
<tr>
<td>Ln Ave. Revenue</td>
<td>0.6486***</td>
<td>0.6551***</td>
<td>0.6661***</td>
<td>0.6370***</td>
</tr>
<tr>
<td>Imp. Start Year</td>
<td>0.8891**</td>
<td>0.9361</td>
<td>0.9627</td>
<td>1.691</td>
</tr>
<tr>
<td>Public Private Control Dummy</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Non Profit</td>
<td>0.8266</td>
<td>0.8312</td>
<td>0.8058</td>
<td>0.8859</td>
</tr>
<tr>
<td>Private For Profit</td>
<td>(omitted)</td>
<td>(omitted)</td>
<td>(omitted)</td>
<td>(omitted)</td>
</tr>
<tr>
<td>State Gov.</td>
<td>0.6079</td>
<td>0.5846*</td>
<td>0.5850*</td>
<td>0.5950</td>
</tr>
<tr>
<td>Governor</td>
<td>0.9898</td>
<td>1.0144</td>
<td>0.9641</td>
<td>0.9164</td>
</tr>
<tr>
<td>Climate Dummy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate 1a</td>
<td>2.3795</td>
<td>2.7731</td>
<td>3.0831</td>
<td>5.232 e</td>
</tr>
<tr>
<td>Climate 1</td>
<td>0.6700</td>
<td>0.5133</td>
<td>0.4967</td>
<td>272545***</td>
</tr>
<tr>
<td>Climate 2</td>
<td>0.4155*</td>
<td>0.4366*</td>
<td>0.4555</td>
<td>0.4025*</td>
</tr>
<tr>
<td>Climate 3c</td>
<td>0.5600</td>
<td>0.5546</td>
<td>0.5705</td>
<td>0.5981</td>
</tr>
<tr>
<td>Climate 4</td>
<td>0.5072**</td>
<td>0.5183**</td>
<td>0.5401*</td>
<td>0.5178*</td>
</tr>
<tr>
<td>Climate 4c</td>
<td>0.4241</td>
<td>0.4305</td>
<td>0.4848</td>
<td>0.4598</td>
</tr>
<tr>
<td>Climate 5</td>
<td>0.4858**</td>
<td>0.4887**</td>
<td>0.5118**</td>
<td>0.4811**</td>
</tr>
<tr>
<td>Climate 6</td>
<td>0.4345**</td>
<td>0.4416**</td>
<td>0.4517**</td>
<td>0.4638**</td>
</tr>
<tr>
<td>Climate 7</td>
<td>0.6955</td>
<td>0.6950</td>
<td>0.7158</td>
<td>0.6621</td>
</tr>
<tr>
<td>Constant</td>
<td>1.45 e</td>
<td>1.843 e</td>
<td>4.501 e</td>
<td>4.051 e</td>
</tr>
<tr>
<td>N</td>
<td>628</td>
<td>617</td>
<td>601</td>
<td>579</td>
</tr>
<tr>
<td>Chi²</td>
<td>54.95</td>
<td>49.82</td>
<td>47.05</td>
<td>203.35</td>
</tr>
</tbody>
</table>

*Note: Estimation Method is logistic regression with robust standard errors. Listed coefficient is in Odds Ratio. Public Private Control Dummy relative to Public Institutions; Climate Dummy relative to Climate 3. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval.*
SECTION VI – DISCUSSION

Major Findings

This analysis provides strong evidence that the department and career path of implementation liaisons plays a critical role in the success of institutions in meeting their obligations under the ACUPCC. The major takeaway from the study is that when implementation liaisons are appointed from an environmentally related position, or work in an environmental or sustainability related office the institution is less likely to have reporting delinquencies. Furthermore, the results indicate that the office from which the implementation liaison is appointed from matters: implementation liaisons from an academic office or office of the president show no difference in delinquency rates than those appointed from a sustainability or environmental office; however, implementation liaisons appointed from an office of plant and facility services, a financial office, or another generic administrative office are more likely to exhibit reporting delinquencies than those in an environmental office.

The results of the first series of models unequivocally points to lower delinquency rates for institutions whose implementation liaison holds an environmentally related position or works in an environmentally focused office on campus. This finding is consistent with Allen’s model of institutional change, which stresses the role of institutionalized leadership as a critical component to achieving any institutional change. The role of resources and connections is also supported by the significantly lower rate of delinquencies for institutions whose implementation structure was designed around a task-force, committee, center or institute, or other structure rather than carried out by an individual. While the number of individuals in the implementation structure appears to have a very slight increase in the rate of reporting delinquencies, the
dramatically lower delinquency rates for larger implementation structure formats suggests that the sheer number of stakeholders may not be as important as the placement and connections of key stakeholders who might be involved in a task-force, committee, or institute involved with the ACUPCC implementation process.

The second series of models provides additional insight to the results of Series One by focusing on the possible link between the specialization of the implementation liaison’s home office or department and the reporting delinquencies of that institution. Under the model produced by Allen (1999), implementation liaisons from environmental or sustainability offices would be expected to have the greatest capacity for instituting the changes necessary for a successful ACUPCC program. Implementation liaisons from an environmental or sustainability office would exist in an institutionalized capacity would have access to resources through a dedicated office and would be dedicated to the environmental / sustainability cause – all elements that Allen advocates as strengths in any attempt at institutional change.

Institutions whose implementation liaison hails from a less environmentally focused department, such as finance or plant and facility services, would be expected to exhibit higher rates of delinquency due to lower levels of institutionalization of the environmental agenda and a lower number of institutional resources dedicated to the ACUPCC and other sustainability causes. The results of Series Two provide strong support for this conclusion. Institutions whose implementation liaison is appointed from an office of plant or facility services, a financial office, or some other office were significantly more likely to be delinquent in its reporting requirements than one whose liaison is based in an environmental or sustainability–related office.
Model results indicate that institutions whose implementation liaison was appointed from the president or chancellor’s office and those whose implementation liaison was an academic faculty member were not significantly different than those whose IL hailed from an environmental office. At first glance this might seem contrary to Allen’s model, but these observations actually serve to independently reinforce the likely importance of credibility and commitment to an environmental viewpoint. Implementation liaisons appointed from a president or chancellor’s office may have less environmental commitment on aggregate than those from an environmental office, but their proximity to high level decision-makers, such as the president may afford them greater resources, credibility, and authority than other members of the institution enjoy, leading to a delinquency rate closer to the baseline environmental offices. Faculty-based implementation liaisons are a more complex group to assess. A fair amount of variation exists within this category: the level of authority ranges from associate professors to department chairs heading large environmental science departments. Indexing the level of power and resources enjoyed by these officers is an excellent topic for future research, but the majority of these implementation liaisons tend to be located in environmental or natural science disciplines, which is measured as a greater level of technical knowledge and commitment to the cause of sustainability and amelioration of climate change. That these implementation liaisons are able to achieve low rates of delinquency should not come as a surprise, then, as the commitment of faculty to causes they find worthy is typically strong (Hornibrook, 2012, p. 36).

Policy Implications

Successful implementation of a Climate Action Plan depends on a wide range of factors. Some of the statistically significant factors identified in this study, such as Carnegie
classification and climate zone are largely out of the control of the implementing institution; however, institutions that hope to achieve success with their plans to combat climate change should pay close attention to the implementation structure that they choose to institute and to the delegation of the institution’s implementation liaison.

Institutions appointing an implementation liaison from an environmental or sustainability office – or who develop such an office as an element of their commitment to the ACUPCC – are more likely to meet their reporting requirements in a timely manner than those institutions who appoint their liaison from a facilities, financial, or generic administrative office within the school. Furthermore, for those institutions that may not be able to commit to a full office dedicated to environmental causes, this study suggests that an implementation liaison appointed from any environmentally focused position, even within a traditionally laggard office type, is more likely to avoid reporting delinquencies than handing the position to a non sustainability-focused administrator.

Additional analysis indicates that the implementation structure that an institution devises plays some role in their delinquency rate. Institutions that reported their structure was carried out by an individual were significantly more likely to have delinquent reports than any other implementation structure reported. This finding lends further credence to the need for resources and institutionalization of the ACUPCC process at the school across a variety of stakeholders.

While meeting reporting deadlines may seem a relatively minor achievement, it is the primary source of accountability within the ACUPCC system and is therefore a critical element in providing legitimacy to an institution’s climate neutrality commitment. In addition, the timely completion of a Climate Action Plan – one of the reported documents – is an essential step in the
climate planning process. Meeting these requirements should be a high priority for any institution which takes its commitment seriously.

Study Limitations

While the ACUPCC – Second Nature databases provided a wealth of information to this project, a number of limitations and considerations are present that should be noted in interpreting the results of this study. First, time and information constraints limited the ability to directly measure the commitment to environmental causes of individual implementation liaisons; position title and office were instead used as a proxy measure of this commitment. Similarly, analyzing the organizational structure of each individual institution to determine the networking of their implementation liaison would have been prohibitively time-consuming title and home office were again used as a proxy for this information and coded appropriately.

Finally, it should be noted that there is a minor unit of analysis disagreement in the measurement of campus political views. State level political measurements were used as a rough approximation of institutional political stance because obtaining consistent political data for every observed institution at the campus level was deemed infeasible for the time frame of this study.
SECTION VII – CONCLUSION

Higher education stands at an important crossroads where it can take a major leadership role in the climate crisis that the United States government has heretofore failed to address. The American College and University Presidents’ Climate Commitment represents a strong step in this direction, but for the commitment to be successful, it must be taken seriously and seen as a legitimate effort on the part of colleges and universities to take responsibility for their emissions. Accountability is established in the ACUPCC through self-reporting of progress and publication in a publicly available database.

While very little published research has focused on the factors that lead ACUPCC signatories to successfully implement their climate neutrality plans, this paper sought to provide a framework for analysis of institutional factors affecting the success of ACUPCC schools in meeting their reporting deadlines. As hypothesized, signatories that institutionalize their ACUPCC mechanisms and appoint an environmentally–concerned campus leader to be their implementation liaison see a significantly lower rate of reporting delinquency. Institutions which do not yet employ any faculty in a sustainability position could see further benefits by developing one as an overseer of sustainability on campus, an excellent first step in institutionalizing a commitment to climate action and overall sustainability. It appears that finding the ideal IL is a case of appointing the right person from the right office – a square peg for a square hole.

This paper represents only the first step in assessing best practices for ACUPCC schools. Future research is needed to explore the networks and resources ILs require, as well as the strategies and techniques they utilize to achieve campus change towards climate action. Further
research is also necessary to determine the feasibility and legitimacy of institutions’ Climate Action Plans and to assess the success of ACUPCC institutions in meeting their goals. Campus climate action has grown rapidly in the past decade, if it is to stay legitimate, it must face scrutiny and assessment, both to protect against greenwashing and to foster a community of practice which implements best practices as they are better understood and circulated.


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