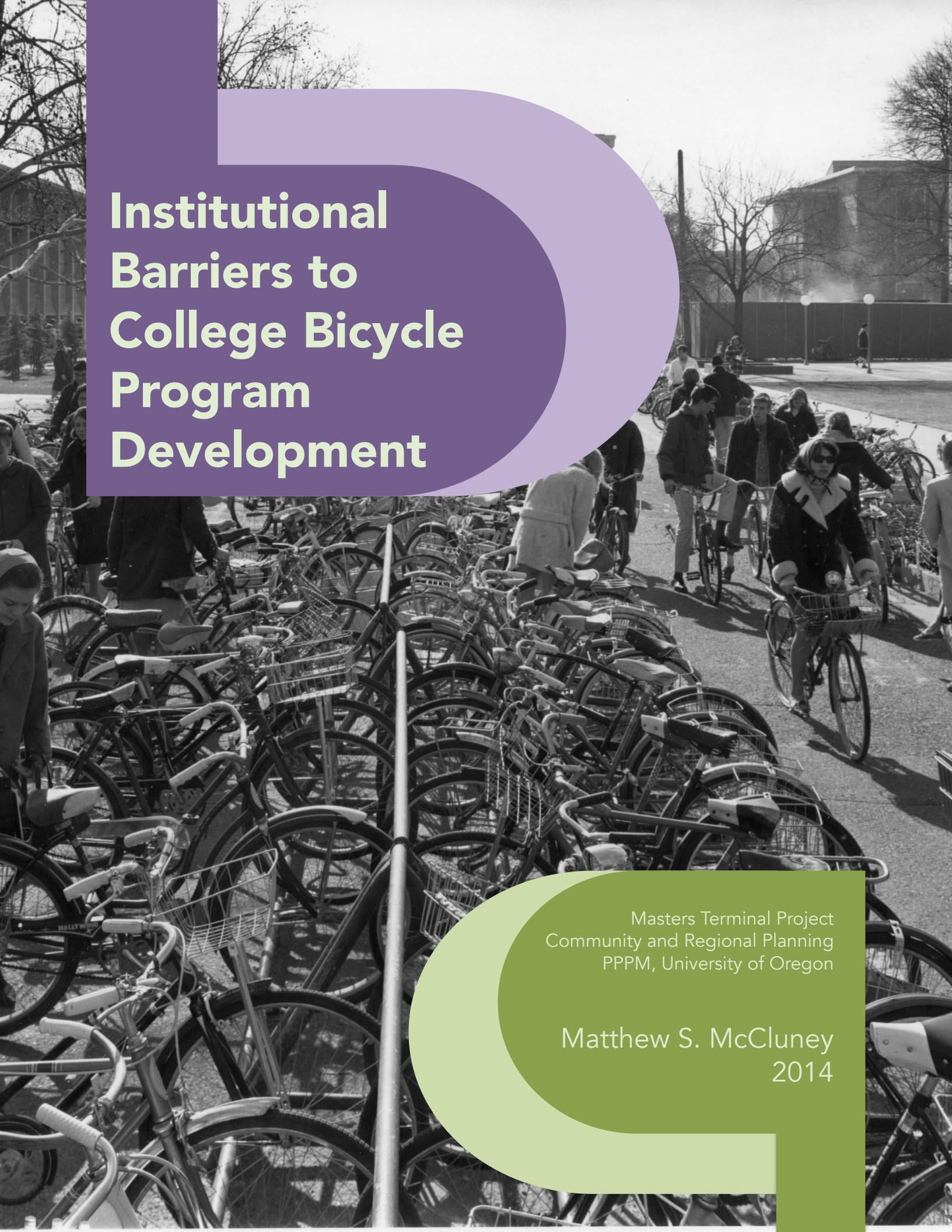

Institutional Barriers to College Bicycle Program Development

Masters Terminal Project
Community and Regional Planning
PPPM, University of Oregon

Matthew S. McCluney
2014

INSTITUTIONAL BARRIERS TO COLLEGE BICYCLE PROGRAM DEVELOPMENT

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Abstract

College communities are increasingly finding bicycles to be the answer to greater mobility for their active lifestyles, while on a budget, and with the future of the environment in mind. The cost of parking, growth of bicycle commuting (over 50% mode split at some universities), and its acceptance as a sustainable practice has led to the establishment of campus programs. As of fall 2013, the League of American Bicyclists has recognized 75 schools as Bicycle Friendly Universities.

Several previous studies have examined the physical attributes that determine college bicycling behaviors, including infrastructure and weather preferences. However, there has been little research into the organizational structures that support bicycle services. If bicycling is growing, and it is generally accepted as a clean and cost-efficient alternative, then why haven't more colleges made the modal shift away from single occupancy vehicles through the establishment of comprehensive bicycle programs? What are the institutional barriers to college campus bicycle program development?

This research involved interviewing bicycle program coordinators at universities across the country recognized for their bicycle services, to give voice to their triumphs and challenges. The findings from these interviews help explain the institutional culture that may inhibit further programmatic growth, as well as the strategies that have met with success. Together, these insights from current bicycle program coordinators could contribute to the dialogue surrounding organizational credibility for alternative and sustainable practices, such as campus bicycling.

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All 21 university bicycle program coordinators who participated in this project

My motivating family; my dependable friends; and my unmatched cohort

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Above: UC Davis (credit UC Davis Bike Program)
Below: University of Oregon (credit UO Bike Program)

EXECUTIVE SUMMARY

The benefits of bicycling as a mode of transportation on college campuses are well documented, but the existing knowledge and literature focuses primarily on bicyclist behaviors and service strategies instead of the institutional structures that make these strategies possible. This research explored the institutional barriers and organizational issues that underlie college bicycle program operations. The major themes taken from the literature review refer to bicycling a sustainable practice, which researchers have found to require the three elements listed below in order to establish their presence within an institution.

Bicycle program coordinators at twenty-one universities across the United States (see Figure 1.) were interviewed to gather experiential information on bicycle programming from active staff members within a university institutional structure. The universities were picked from a list of schools ranked for their program offerings by the League of American Bicyclists.

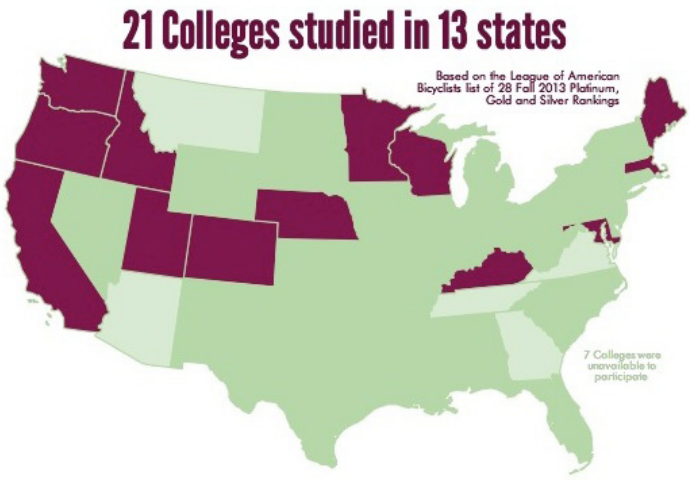
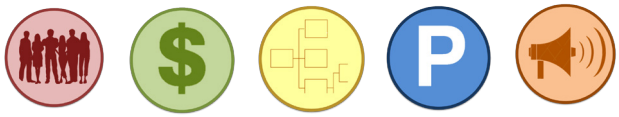


Figure 1. Themes & Study Group Map

Elements of a Successful Sustainable Practice

Credibility **Salience** **Legitimacy**

Emergent Themes from Interviews with current university bicycle program coordinators:



The results of the interviews were varied by campus situations and coordinator styles, but the common themes, referred to as Emergent Themes, are shown above on the right. The most significant barrier expressed by the interviewees involved issues of Credibility and Culture.

The following policy recommendations address the primary institutional concerns raised during the interviews:

- Establish a Bicycle Advisory Committee with a high-level administrator.
- Hire a full-time Bicycle Program Coordinator.
- Request President/Provost participation in bicycle commute modeling.
- Provide a physical space for bicycle services.
- Explore 'secure' funding sources.
- Prioritize alternative transportation modes in plans and strategies.
- Improve education on the costs of automobile parking, and pollutant emissions.

Above: Harvard University (credit Harvard CommuterChoice)
Below: Portland State University (credit PSU Bike HUB)

Chapter One
INTRODUCTION TO CAMPUS BICYCLING

Chapter Organization:

- **Background**
- **Relevancy of bicycling on college campuses**
- **The issue with college bicycling**
- **Purpose & goals of this study**
- **Definitions**
- **Structure of this report**

Background

Bicycles have been around for over a century, but institutional bicycle support and advocacy is a relatively new development on the American college campus scene. Many institutions of higher learning in older cultural centers such as Europe have already accommodated bicycles into university community life. American efforts to formalize university-associated bicycle programs is a recent phenomena that is gaining popularity and important. The ripeness of this subject allows researchers a unique opportunity to examine the best ways to develop bicycle programs from their infancy.

Bicycle use and planning is a topic of great potential and uncertain development for transportation demand management. Growing commute trends in bicycling has been coupled with rising automobile-related costs and broader environmental awareness. (Tolley, 1996) National averages for bicycle commuting grew by nearly 50% from 2000-2008, and the nation's largest city with the highest bicycle commute share, Portland, OR, increased its share from just over 1% in 1990 to nearly 7% currently (ACS, 2012). The result of increased use has been an increase in bicycle advocacy and integration into existing transportation networks across the nation (HashemNejad, Feyzi, & Sedigh, 2010). The U.S. Federal Highway Administration and the Bureau of Transportation Statistics have been tracking bicycle-related measurements for decades. The National Bicycling and Walking Study in 1994 gave the Department of Transportation specific information to set policy goals and objectives for the future: double the percentage of total trips made by bicycle and reduce bicycle and pedestrian fatalities by 10% (National Bicycling and Walking Study, 1994). This report was a product of significant growth in bicycle use, and many white papers and academic studies have followed. However, most of this data has not traditionally isolated college campuses as a distinct study subject. Regardless, it provides an important background context for the surrounding culture and state of affairs within which college campuses can be more accurately examined.

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INTRODUCTION TO CAMPUS BICYCLING

Relevancy of bicycling on college campuses

Bicycle planning on college campuses is a significant topic of relevance because college students fit a demographic niche for regular bicycle users and college campuses have been identified as an ideal setting for bicycle use.

Relevant Demographic Factors

High bicycling rates, youth and health, and limited budgets are the most significant factors that make college students a prime demographic for bicycling.

Bicycling is more common among college aged Americans in part because it requires more than physical activity then other modes of transportation (Ransdell, Mason, Wuerzer, & Leung, 2013). The National Household Travel Survey regularly finds bicycling rates to be high among youth (Pucher, & Renne, 2003). A study on college student activity levels found that on average, approximately one third of college students "engaged in adequate levels of moderate activity" at least 5 days a week, and half engaged in "vigorous activity" at least 3 days a week (Buckworth, & Nigg, 2004, p. 30). Bicycling can be either a vigorous or moderate activity.

College students typically have lower discretionary spending budgets compared to full-time working adults. Commuting and personal travel must be included in their limited budgets. Automobile costs for college students accounted for approximately $17.5 billion in 2013, which was second only to food costs (MarketingCharts, 2013). The cost of a one-time bicycle purchase averages around $350, and annual maintenance averages around $50 (Alter, 2003). Buying and maintaining a bike can be much cheaper and easier for a college student than having a car.

The following factors summarize the Relevant Demographic Factors that connect college students and bicycling:

- College students cycle on average more than the general population (Pucher et al., 1999)
- Americans ages 16-34 reduced their annual vehicle miles traveled by 23% from 2001-2009 (NHTS, U.S. PIRG, 2012)
- College students are generally more environmentally conscious (Balsas, 2003)
- College students are generally more fit and active (Balsas 2003)
- Public health benefits from bicycling have been documented (Sallis, et al, 2004)

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Relevant Environmental Factors

College campuses are relatively small, self-contained communities that provide a lot of ser vices to a lot of people, and bicycling has been found to be ideal for moving through this setting without adding to the burden of services and activities on campus (Tolley, 1996). The following factors summarize the Relevant Environmental Factors that connect college campus settings and bicycling:

- Sustianable practices like bicycling can make a College more marketable and desir able to attend (Tolley, 1996)
- Bicycles are ideal for short trips (Miller, & Handy, 2012)
- Bicycle can help reduce emissions through mode shift away from automobiles (Tolley, 1996)
- Bicycles can alleviates parking demands on campus (Tolley, 1996)
- Bicycles take up less space (Feyzi et al. 2010)
- Bicycles are complementary to with other modes (Balsas, 2003)

The issue with college bicycling

Universities and college towns across America have shown that they are interested in supporting alternative modes of transportation (U.S. PIRG, 2012), but they have yet to commit more funding and integrate these modes into their institutional policies and structures. Bicycle planning in major cities has stood out in media as the most accessible information on the implementation of bicycle planning. However, there is little information on the failure or success of bicycle planning at the campus setting level. This study will examine whether this absence of information is an issue of recording, or actual policy implementation.

Purpose & goals of this study

The story told by the existing academic literature on college bicycle services and program institutionalization is incomplete. The following literature review completed for this study demonstrates that there is plenty of documentation and material on efficient and safe bicycle planning strategies, but not a lot of information about the organizational and institutional structures that underlie bicycle planning. Institutional issues relate to organizational hierarchy, position titles and responsibilities, programming opportunities, departmental support and administrative advocacy. Campus bicycle programs must be examined in the light of these topics in order to discovery the practical, post-conceptual state of university bicycle planning. It is critical for the development of the field of alternative transportation to occasionally examine the current field conditions of a particular practice, like bicycling, separate the conceptual support and litany of best practices.

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The following goals summarize the guiding principles of this study. Information about college bicycling and institutional barriers to programming are not significant on their own, but they can be significant when they are set in the context of a larger discussion on the merits and efficacy of bicycle planning.

- To record the institutional barriers that current college bicycle program coordina tors have experienced
- To better understand the physical, social and organizational obstacles to bicycle program development
- To identify those elements that support or limit bicycle services
- To contribute to the dialogue surrounding organizational credibility for 'alterna-tive' and 'sustainable' practices

Searching for barriers will also reveal elements of strength. If institutional barriers and strengths can be identified, then their causes and affects can be studied as well. This chain reaction is an important part of the research process to build upon existing knowledge with new insight.

Definitions

It is important to understand the terminology used in the practice of active campus bicycle programming in order to affectively study them.

What is a campus bicycle program?

This report defines a 'campus bicycle program' as a collection of services, policies and/or structures that provide a campus community with bicycle-use related resources.

Other types of campus communities, including large governmental facilities or private corporations may provide limited bicycle use on their campus, depending on the site, but neither appear to have an organized set of traditional practices or policies that define their programs. Universities lead the category of campus communities in establishment of formalized practices. However, the unique needs and offerings for each university campus further complicates the issue. Campus bicycle programs will be referred to in this report as either programs or services to acknowledge this diversity in resource structure.

What is the role of a bicycle coordinator?

There are few definitions of a 'bicycle coordinator', however this position has become identified by the experiences and work of pioneering bicycle resources providers. Recent efforts to formalize bicycling into mainstream transportation planning have led to the creation of definitions for the position. Federal legislation in 1991 brought forth the Intermodal Surface Transportation Efficiency Act [ISTEA], which increased funding

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and policy requirements for active transportation, including requiring states to hire a full time bicycle and pedestrian coordinator position (ISTEA, 1991). The responsibilities of the position are:

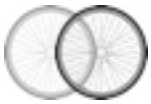
> *…promoting and facilitating the increased use of nonmotorized modes of transportation, including developing facilities for the use of pedestrians and bicyclists and public education, promotional, and safety programs for using such facilities. (ISTEA, 1991, s. 1033)*

The Bicycle Federation of America also has lists of duties and qualities of a bicycle coordinator in an agency report entitled "Bicycle Coordinators and Programs: Why, How, What and Who." (Federal Highway Administration, 2014) These lists can be found in Appendix A.

Structure of this Report

This report has begun by laying the contextual foundation for the setting and relevancy of bicycling on a college campus. The purpose for the study has been identified as examining the institutional barriers behind campus bicycle planning. The next chapter will build upon the existing knowledge and academic literature in the field of college bicycling. The primary research question and methodology will be discussed thereafter. The subsequent findings of this research will be shared in both raw and analyzed formats to allow for reader interpretation. A chapter discussing the implications of these findings and the policy alterations recommended to American universities will lead into a conclusion of this report on the study's limitations, areas for future research, and use by universities.

Chapter Two
CONTEXT & LITERATURE ON BICYCLE PROGRAMS



Before the turn of the twenty-first century, studies on college bicycling were severely limited in number and scope. There is still relatively little information available on the state of the practice of college campus bicycling compared to documents on alternative transportation in general. However, of those limited resources, academic literature, statistical reports, policy reviews and advocacy campaigns for bicycling have been on the rise over the last few decades. The momentum behind bicycle advocacy movements has been exponential, with fits and starts at the governmental and policy levels. The following information has been collected to demonstrate the status of knowledge on bicycling, with particular concern for the college campus context, and institutional programming structures.

Chapter Organization:

- **Existing literature on bicycle planning**
- **Academic Setting**
- **Institutional Framework**
- **What is an Institutional Barrier?**
- **Key Take-Aways**

Existing literature on bicycle planning

Review of the existing literature has categorized the topic of bicycle planning into four topic areas. These areas each contain both general studies and studies particular to the campus setting:

- Planning/Service Best Practices
- Roadway Behavior
- Cost of Automobiles
- As an example of 'Sustainable' Transportation

Planning/Service Best Practices

Most studies concerned with college bicycling have predominantly focused on physical campus attributes such as infrastructure, safety and security. Studies tend to ask such questions as: what infrastructure elements affect student commuter pattern? (Pucher, Dill, & Handy, 2010), and how influential is climate and weather on college transportation services? (Nankervis, 1999). In 1999, at the University of Colorado's Environmental Center, Will Toor and Francoise Poinsatte put together a comprehensive manifesto on college transportation strategies for a new era (Toor, & Poinsatte, 1999). Many reports have come

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out since, outlining best practice measures for campuses services, but few of them have delved far into organizational issues.

Roadway Behavior

There is a plethora of survey-based studies asking campus communities about their rid ing behaviors and preferences. One such study found that for every additional facilitat ing factor, such as not owning a car, or riding on streets with separated bike lanes, the likelihood of cycling among college students increased by 0.35 times (Ransdell, 2013). Yet another study found that the majority of both undergraduate men and women con sidered cold weather and too much snow to be barriers to bicycling during the winter (Agarwal, & North, 2012). Neither of these findings are surprising, but they have become a part of a growing collection of literature that is documenting the preferred environmen tal conditions for college cyclists.

Cost of Automobiles

Since the dawn of automobile dominance of transportation in America around the mid-twentieth century, college campuses have focused their efforts on accommodating thousands of long-term resident parking, and short-term commute and visitor parking. Two factors have made this task increasingly difficult over the last few decades: transpor tation departments are typically an auxiliary service that must come up with its own fund ing, but parking revenue rarely covers all expenditures (Tolley, 1996), and most campuses have increased in density without proportionally expanding their footprint.

It is becoming exceedingly difficult to afford providing automobile parking on college campuses (Tolley, 1996). Average capital construction costs estimate a new car parking space to range between $15,000-$30,000, and a new bike parking space at about $100 (Toor, 2003). That is approximately a 200:1 cost ratio. Car parking revenue, however, is not on par with the costs, which means that transportation departments have had to accrue enormous debt and essentially subsidize on-campus parking (Tolley, 1996). Fur- thermore, as universities grow and project greater demands for housing, classroom space and supporting services, building on surface parking lots is a much cheaper and quicker option than trying to purchase land adjacent to campus, which is often unavailable.

Not all of the costs of parking are monetary. Town and gown relations are significantly affected by parking overflow along streets and neighborhoods on the boundaries of cam puses. Tailgating and increased parking are a common subjects of complaint for local residents during the fall college football season. Cities also often hold jurisdiction over many on-campus streets and perimeter roadways. Cooperation with local municipali ties, regional transit and state agencies on infrastructure projects is yet another

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responsibility of transportation departments (Delmelle, et al., 2012). All of these costs have accumulated to create a strong argument for investment in alternative modes of transportation.

As an example of 'Sustainable' Transportation

Sustainable transportation is a documented subject, and colleges have signed declara tions in support of sustainable transportation. In their article on behavior and perception of sustainable transportation systems, HashemNejad et al. (2010) referred to the work of researchers Black (1997) and Richardson (1999) when stating that "A sustainable trans portation system has been defined as one that satisfies current transport and mobility needs without compromising the ability of future generations to meet their own" (p. 145). This definition is closely linked to the definition of sustainability formulated by an interna tional gathering in 1987 called the United Nations World Commission on Environment and Development, which produced the 'Bruntland Report' (Our Common Future, 1987). The Bruntland report mirrors the former definition, but without referring to transportation, spe-cifically. Several international conferences and forums on sustainability have followed, in cluding the meeting of the Association of University Leaders for a Sustainable Future in 1990, where the Talloires Declaration was signed by 31 university leaders who pledged to commit their schools to sustainable practices. Nearly 300 universities in over 40 countries have since subscribed to the principles outlined in the Talloires Declaration (Balsas, 2003). This movement has often been called "greening the ivory tower" (Balsas, 2003, p. 36).

Colleges benefit from going green on the surface, but the need is real. Beyond support-ing new discoveries in science and technology, sustainable initiatives can have a positive influence on a university's marketability. Students may consider being green as a factor to decide which college to attend (Tolley, 1996). Once there, however, transportation is one of the largest areas for sustainable growth because commuting is regularly found to have the greatest environmental impact across all university services (Tolley, 1996). Methods of attempting to reduce this carbon footprint, however, can often be half-hearted, and Tolley's (1996) work on greening universities in the UK warned against "pseudo-green" policies that were both ineffective and diverted attention away from more impactful policy changes (p. 215).

Sustainability can be a powerful tool for campus bicycle advocates, however, it is not a uni-versally accepted priority for all college administrations and campus cultures. It is unclear, however, which is required to exist first, the culture or the policies. It is clear, however, that successful programs implement comprehensive and methodological approaches across university operations. Sustainability is not yet a well enough established purpose to con-vince many communities to change their policies and their behaviors.

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These topic areas have been followed by very little implementation of actual modal shift strategies. However, the literature, and improved academic training of transportation planners has increased awareness of the benefits of prioritizing bicycle planning, and how many institutions are falling short of their potential, but this is where the discussion currently stalls. The natural next step is to consider the setting behind this inaction.

Academic Setting

It has been well articulated throughout the academic literature of the last two decades that it is necessary for universities to play a leading role in "education, research, policy formation, information exchange, and community outreach" to develop the intellectual and cultural frameworks for sustainable practices (Ramos, 2009, p. 1102). Bicycling is widely recognized as a sustainable practice (Balsas, 2003), which means that college bicycle programs qualify as areas to advocate for more policy frameworks.

Researchers Eric and Elizabeth Delmelle (2012) referred to Carlos Balsas' work when stating "university campuses represent a microcosm of society" (p. 1). This statement recognized parallels between college campuses and society at large, and considered this an ideal setting for experimenting with alternative transportation strategies. Balsas further believed that college "campuses are usually self-contained neighborhoods" that require much of the same upkeep and management of a municipality (Balsas, 2003). Universities also output a great deal of highly valued resources, such as knowledge, jobs and community agency. This mixture of opportunities and constraints is the setting for sustainable college programs, like bicycle services, that are trying to maximize resources and retire cumbersome and outdated polices and practices.

Students are not the only demographic focus for bicycle services. In 2009, more than three million employees were enumerated at nearly 3,000 public and private four-year colleges across the country (Miller, & Handy, 2012). If every staff and faculty member commuted alone in their car there would be over three million cars on college campuses before including student drivers. Not all employees own cars, and not all of those who do, drive. Regardless, the point of this information is to highlight "the potential to yield positive results at the aggregate level" concerning bicycle promotion (Miller, & Handy, 2012, p. 112).

In recent collaboration between the League of American Bicyclists and the U.S. Census Bureau's American Community Survey, a report highlighted small college towns as a significant finding for high municipal bicycle commute rates (ACS, 2012). At the top of the list was the City of Davis, CA; the location of one of the two Platinum Bicycle Friendly Universities awarded by the League. As of 2012, UC Davis had a city commute bicycle mode share of 19.1% (ACS). Town and gown relationships, as they are often referred, greatly influence one another, particularly by coordinating on issues like transportation that will affect both the campus and surrounding community (Delmelle, & Delmelle, 2012).

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University campuses exhibit unique challenges, such as limited space and funding, but they also provide unique opportunities, such as thousands of fertile minds and academic departments willing to accommodate more pedestrian and bicycle planning issues (Balsas, 2002). Academia is a mixed context of opportunities and constraints for the development of sustainable practices.

Institutional Framework

Few studies have examined bicycle services in terms of institutional issues. Previous researchers have approached this topic from a variety of inter-connected angles; from articles on the status and impact of institutional support, to strategies that overcome organizational instability. Even Fewer researchers has brought these points together to determine the key issues of institutional involvement in bicycle programming.

One example of institutional commitment to bicycling is the steady increase of federal funding and projects over the last few decades. Bicycling has grown hand in hand with increased funding over the last few decades. Federals acts of Congress in the early 1990s called the Intermodal Surface Transportation Efficiency Act [ISTEA] and the Transportation Equity Act for the Twenty-first Century [TEA-21] increased funding and integration of bicycle planning into public agency planning (Dill, & Carr, 2003). Federal funds on stand-alone bicycle and pedestrian projects increased from $17.1 million in 1991 to $339.1 million in 2001 (Dill, & Carr, 2003). Below is a table portraying the trends in federal funding for bicycle projects (see Figure 2.). The number of new projects has steadily increased over the last two decades, and the total spending on bicycle lane infrastructure has increased more than 50 times what it was in the early 1990s.

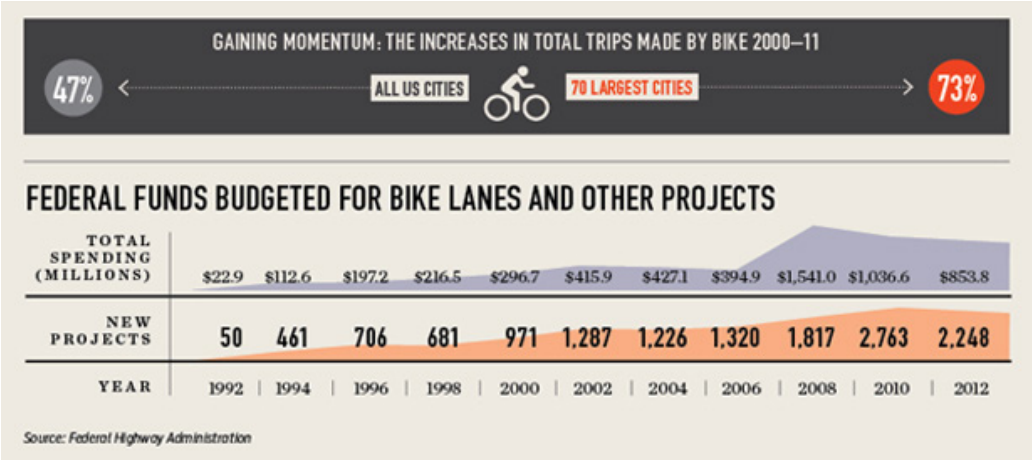

Figure 2. Federal Bicycle Project Funding

A study by Nelson and Allen (1997) showed that the more projects that were supported by this funding increase led to higher rates of bicycle commuting. These findings are encouraging, except that they are not representative of all parts of the United States. A study on bicycle promotion in 1999 showed that bicycle promotion culture is self-perpetuating (Pucher, Komanoff, & Schimek, 1999). A culture that views bicycling as normal will be more likely to fund programs, whereas a culture that views it as abnormal will be more likely not support it (Pucher, et al., 1999).

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The root of this perpetuation can be found in our antiquated transportation regime that originated in the mid-twentieth century. The term 'transportation regime' is intended to describe the automobile-centric lifestyle and development of our transportation networks and neighborhoods since the 1950s. This idea of regime was studied by two researchers from the University of Tasmania who continued previous work that suggested that the affective nature of cycling has been ignored because cycling works for cyclists affectively, instead of attributing cycling to a sustainable initiative (Vreugdenhil, & Williams, 2013). In other words, if bicycling works for people, it works for them, and if it doesn't, bicycling for the sake of sustainability is not a realistic incentive on a day-to-day basis. The significance of this practicality resides in the stubborn nature our transportation regime. This "embeddedness" of the transportation framework we have constructed can be seen in infrastructure, policies, design processes and cultural practices (Vreugdenhil, & Williams, 2013, 290). The bicycle has yet to fully integrated into this regime.

Even among alternative modes of transportation, bicycling has long been considered the "poor step-child", due in large part to the policy framework that has inhibited bicycles from becoming "design vehicles"; vehicles for which engineers train and design infrastructure and public programs (Weerts 1992; HashemNejad, 2010).

Instead of being integrated as a mode of transportation, bicycling has had greater success as an example of a sustainable practice. Sustainable practices, are well established in academic circles and conceptual arguments, but not in many university policy areas. Researchers at some of the top universities in the nation have studied how to harness sustainable development in institutional arrangements have connected the areas of science and technology in sustainability to three elements for successful practical policy implementation: credibility, salience and legitimacy (Cash, Clark, Alcock, Dickson, Eckley, Guston, Jager, & Mitchell, 2003). These elements of success firmly establish scientific evidence and adequate arguments (credibility), relevance to an institution's mission (salience), and fair treatment of opposing positions (legitimacy) as the foundation for policy discussion. All three of these elements have been found to be present in 'boundary organizations' that straddle the world of science, and the world of policy implementation (Cash, et al., 2003). Credibility, Salience and legitimacy will be important categorical distinctions throughout this study to help analyze institutional issues.

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What is an Institutional Barrier?

This study is concerned in particular with institutional barriers. The concept of institutional barriers is composed of a logical sequence of supporting ideas:

- Institution – Defined as an established law or custom. (Merriam-Webster, 2014)
- University Institution – Defined in this context as any policy or structure (i.e. estab lished law or custom) implemented by a university administration, supporting service and/or community.
- Institutional Barrier – Defined as any policy or structure that undermines the credibility, salience and legitimacy of a specific program.
- University Institutional Barrier - Defined as any policy or structure implemented by a university administration, supporting service and/or community that undermines the credibility, salience and legitimacy (Cash, et al., 2003) of a specific program.

Successful Institutional measures rather then institutional barriers are a common topic in this area of academic literature. The following three studies have recognized the stubbornness of an entrenched transportation regime, and have recommended greater institutional integration for alternative transportation in ways that touch on the three elements of credibility, salience and legitimacy.

- While considering the affect of infrastructure on bicycle commute behavior, a study at the University of South Australia identified three themes of importance that were influencing cycling culture on campus: 1. Social factors, 2. Context, and 3. Policy-Information (Bonham, & Koth, 2010). Each of these themes directly correlates to the impact the university institution has on its larger campus community. Administra tions lead social development by establishing holistic community-wide goals, as well as an ethos for academic pursuits and extracurricular activities. The entire campus context is framed by administrative policies spanning the hierarchy from course curriculum to landscape manicuring. Finally, the content, method and extent of policy information shared with the campus either produces ignorance or informed community members. This study suggests that bicycling can benefit from greater attention to these three themes.
- In a study on "Predictors of Cycling in College Students" from the Journal of American College Health, the first recommendation stated that "policies or bike-friendly promotion programs could decrease the likelihood of perceived barriers [to cycling]" (Ransdell, et al., 2013, p. 282). This study was based on a survey of college students' preference for bicycling as a means of physical fitness and activity.

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- A third study, in Greece, looked at successful methods of implementing alternative transportation networks on college campuses. The following recommendations are a few of the suggested policy priorities:

  - "Integration with the university's sustainable policy framework
  - Commitment in an evolving process of changing travel culture towards alternative transportation
  - Ensuring economic viability of alternative transport projects" (Pitsiava-Latinopoulou, Basbas, & Gavanas, 2013, p. 315)

  'Integration' with frameworks, 'Commitment' to change, and 'Ensuring' economic viability are all methods of investment by the university into programs they want to grow and become a lasting part of the campus environment (Pitsiava-Latinopoulu, et al., 2013).

One of the first academic studies to make the case for comprehensive college bicycle planning was facilitated by Rodney Tolley. Tolley wrote an article on "Green Campuses: Cutting the Environmental Cost of Commuting" in the UK (Tolley, 1996) which summarized all of the major arguments for mode shift to alternative transportation, from operational costs of car-usage to green goals. His research was instrumental in calling for a comprehensive and systematic approach to alternative transportation college programs. Tolley (1996) found that "Simply upgrading alternatives to car use is expensive and does not work" (p. 214).

In 2003, Carlos Balsas built upon Tolley's work with his article "Sustainable Transportation planning on college campuses" (Balsas, 2003). Balsas' (2003) research was unique, however, because he broke down the organizational aspects of eight universities well known for their bicycling cultures. His work was one of the first to attribute an array of minute programmatic details to the larger social and environmental resolutions. He found that his "key findings emphasize that college administrators rarely consider bicycle and pedestrian planning to its full extent." (Balsas, 2013, p. 36) This finding is a foundational concept for the research to follow.

Carlos Balsas attempted to identifying the exact policies and structures that produced informed communities, reduced barriers, and ensured the viability of alternative transportation programs. His article "Sustainable Transportation Planning on College Campuses" took a fresh look at college bicycling by picking eight universities as case studies to learn more about how colleges are encouraging bicycle and pedestrian transportation mode shifts through sustainable planning methods (Balsas, 2003). Balsas (2003) found that "campuses with bicycle committees and coordinators tend to conduct more surveys and attract more funding" (p. 42). Changes to existing policies can be made more efficiently with clear program hierarchy and accountability, and retaining archaic roadway environments has created dangers for cyclists and pedestrians (Balsas, 2003). In similar fashion a few years prior, Rodney Tolley (1996) had named 'Administrative Measures', such as establishing a bicycle advisory committee, an on-campus repair shop, and educational

Chapter Two
CONTEXT & LITERATURE ON BICYCLE PROGRAMS

workshops, as a few of his final recommendations for comprehensive bicycle planning. However, even with all of the policy and structural changes suggested, "The overriding issue is the way of thinking and the need to change routine decisions, levels of commitments and one's own behavior." (Balsas, 2003, p. 46) Yet again, the topic of changing the way we think about transportation is raised, but not discussed at length in the literature.

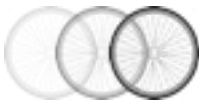
Overall, the information required to provide safe, convenient and popular campus bicycle services exists, but the research and analysis has not come close to fulfilling its potential reach and influence on college campuses. Implementation of studied practices and Transportation Demand Management (TDM) strategies has significantly fallen behind the progress of knowledge about college campus bicycling. This review of the literature has demonstrated the extent of the existing knowledge on the topic of college bicycling and the missing link between the strong support for sustainable growth in the form of bicycling, and the policy framework that is required to be in place before all of the bicycle service and program best practices can be implemented. This research will attempt to understand the current status of this support, and why it has not materialized in the form of policy structures.

Key take-aways

- Bicycling is an example of alternative/sustainable transportation
  - Sustainable practices require Credibility, Salience and Legitimacy to succeed.
- Universities are ideal settings for bicycle use
- University administrations and communities have declared their support for sustainable practices
- Universities have the opportunity to implement policies & structures to encourage cycling

If there are many studies that have shown what institutional measures 'encourage' bicycle use and promotion, then why aren't we seeing these methods implemented more universally?

Chapter Three
RESEARCH QUESTION & DESIGN



Chapter Organization:

- **Research Question**
- **Research Design**

Research Question

What are the institutional barriers to college campus bicycle service and program development?

This research question is primarily concerned with institutional barriers that address the gap in the existing literature between recognized support for bicycling as a sustainable practice, and the implementation of bicycle service best practices. Institutional barriers can be understood as issues that originated or involve an institutional structure, which in this case is the university administration.

This study will focus on bicycle programs and services. Pedestrian planning and other alternative modes of transportation may be closely related to the topics and themes discussed in this research; however, bicycling has been selected as the subject for this study.

Research Design

- Overview
- Study Participants
- Interview Process
- Interview Questions

Overview

The methodology used to address this research on institutional barriers builds upon Balsas' method, and aims to continue the legacy set forth by researchers like Carlos J. L. Balsas and Rodney Tolley (1996). Carlos J. L. Balsas' (2003) study on "Sustainable Transportation Planning on College Campuses" has provided a useful methodological example for the design of this study. Balsas investigated the status of sustainable transportation at eight universities recognized by his peers and his own experience for their advanced bicycle programs. His stated goal was to uncover and discuss the developing area of sustainable transportation at the campuses where it had reached a level worthy of examination (Balsas, 2003). The method of choosing advanced case studies provided rich insight into the budding field of sustainable transportation, and expanding the study to multiple cases demonstrated the varied nature of site-specific program development.

Chapter Three
RESEARCH QUESTION & DESIGN

The best format for acquiring comprehensive qualitative information on institutional barriers was determined to be testimony taken from current college bicycle program coordinators. Phone interviews were conducted with program coordinators at universities ranked as Platinum, Gold and Silver Bicycle Friendly Universities as determined by the League of American Bicyclists [the League]. The original themes taken from academic literature were compared and discussed alongside the Emergent themes discovered from responses given during the phone interviews. The resulting analysis will supplement existing information on the topic of alternative transportation with the de facto experiences of current program facilitators.

Study Participants

The participants chosen for this study represent the top ranked bicycle programs according to the League of American Bicyclists. The League is a national bicycle advocacy organization that has provided professional education and advocacy for bicycling for over 100 years. Resources like the League of American Bicyclists have secured the following criteria for the selection of colleges as study participants:

- Pre-existing experience with bicycle services
- Common source of participant credibility
- Wide geographic representation
- No apparent bias towards campus community size, endowment or other singular demographic (i.e. not all Ivy League schools)

Fall 2013 Rankings: Platinum, Gold & Silver awardees

Stanford University	Georgia Institute of Technology	University of Maryland
University of California Davis	Harvard University	University of Nebraska
Portland State University	Lincoln Memorial University	University of Oregon
University of California Santa Barbara	Northern Arizona University	University of Utah
University of Minnesota Twin Cities	Oregon State University	University of Washington
University of Montana	University of Arizona	University of Wisconsin
Boise State University	University of California Irvine	Utah State University
Bowdoin College	University of California Berkeley	Virginia Commonwealth University
California State University Long Beach	University of La Verne	
Colorado State University	University of Louisville	

Table 1. League of American Bicyclists Fall 2013 Ranking Awardees

Chapter Three
RESEARCH QUESTION & DESIGN

The Fall 2013 Bicycle Friendly Universities (see Table 1) were chosen as the inventory of study participants because they met the aforementioned criteria. This list recognizes innovative campus programs that would otherwise have gone unnoticed. Recognition also comes with advertisement in League materials, inclusion in statistical reports, and access to a national network of education and outreach.

It is important to understand the origins of the study group to be aware of the conditions that lead to their ranking. The mission of the League is:

> *'to lead the movement to create a Bicycle Friendly America for everyone. As leaders, our commitment is to listen and learn, define standards and share best practices to engage diverse communities and build a powerful, unified voice for change.'*

Figure 3. League of American Bicyclist Logo

**Additional information, including ranking criterion and priorities identified in the Bicycle Friendly University application can be found at: bikeleague.org

The full list ranks 75 universities. All schools on the list have some form of bicycle services they wanted recognized. The top 28 schools represent the Platinum, Gold and Silver awardees. This refined list excluded those ranked Bronze due to time and resource constraints. The League found the higher ranked university bicycle programs to possess exemplary services, and so these schools were chosen for their potential depth of experience and information. This study group follows the methods of Carlos Balsas (2003) and represents a varied selection of colleges, which will provide broader context for transferring emergent themes and discussions to other campus settings.

Interview Process

Once the study participant schools were chosen, bicycle coordinators, or any professional staffer in a related position, were selected as the interviewee. Phone interviews were recorded through hand-written notes and approved audio recording. Participants were also asked if they were willing to be quoted in the final report. The interviews were suggested to take thirty minutes. Initial interview recruitment emails were distributed starting March 31st, 2014. Once an affirmative email was received, a phone interview was scheduled, and the interviewee was sent a copy of the Consent Form and the questions to be asked during the phone interview. (The recruitment emails and consent form can be found in Appendix C.)

The terms used in this report to signify interview subjects vary by their position, but they are also generalized as: interviewee, respondent, program coordinator, or bicycle service facilitator. Each of these monikers represents the source of the interview information. It was important

Chapter Three
RESEARCH QUESTION & DESIGN

that these interviews be conducted with professional staff members, instead of student managers or other volunteers, because staff members must work within their organizational structure, which grants them first-hand institutional insight. Additionally, the policies and structures set on paper are not always the policies and structures implemented.

Interview Questions

The interviews guided by six topical questions. These questions were created from themes and topics discussed in the literature review. Questions were worded to allow open-end discussion. The focus of the questions aimed to discover the nature of the program relationships and dynamics with their university institutions and larger communities. Supplemental information included precise polices, demographics and statistics which were found in publicly accessible reports. The point of view of staff members directly responsible for campus bicycle services was determined to be the most fruitful perspective to uncover any systemic barriers or challenges to their work. Below are the interview questions, paired with their corresponding formational themes from the literature review.

Question One - What is the history of your campus bicycle services/program?

The institutionalization of transportation services has traditionally focused on automobile parking. Bicycle programs that exist as a part of the formal duties of a transportation department have grown out of offices solely devoted to parking growth and maintenance. However, this common history is still campus-specific. Insight into the history of who acted first, and how campus bicycle services came to life will reveal bicycling's relationship with traditional university functions.

Question Two - In your opinion, what are the three most important bicycle services and/or programs you provide to your campus community? And why?

This question takes a short inventory of the existing bicycle services considered most important to the program facilitators. Understanding which services are self-selected to be the most important will uncover the priorities and opportunities available to each bicycle program.

Chapter Three
RESEARCH QUESTION & DESIGN

Question Three - What are the pros and cons of where your position and programs sit within the organizational hierarchy of your college/university?

This question most directly addresses this research topic. Organizing matters into pros and cons will enable interviewees to identify elements and examples of institutional barriers and opportunities. A balanced question is more likely to elicit honest responses, rather than a charged question slanted towards rooting out deficient organizational structures and behavior.

Question Four - How has your university supported your work? How does this support differ among the administration, faculty and/or students?

University communities are comprised of numerous campus elements that may have some connection with bicycling services, and it is important to consider all community supporters, and the manner in which that support is given.

Question Five - How well are your bicycle-use promotion services integrated with other university services?

Bicycling is often promoted as an important part of "greening the ivory tower" (Balsas, 2003, p. 36). This questions examines which other offices and departments are involved with bicycle use/service promotion and education. Collaboration across departments is a good measurement of institutional attitude and investments.

Question Six - What is the next big step for bicycle use on your campus? Describe what you hope bicycling on your campus will look like in 5 years?

This question was designed to catch any plans and/or aspirations for the future development of campus programs, regardless of current limitations.

The answers to these interview questions are discussed in the next chapter.

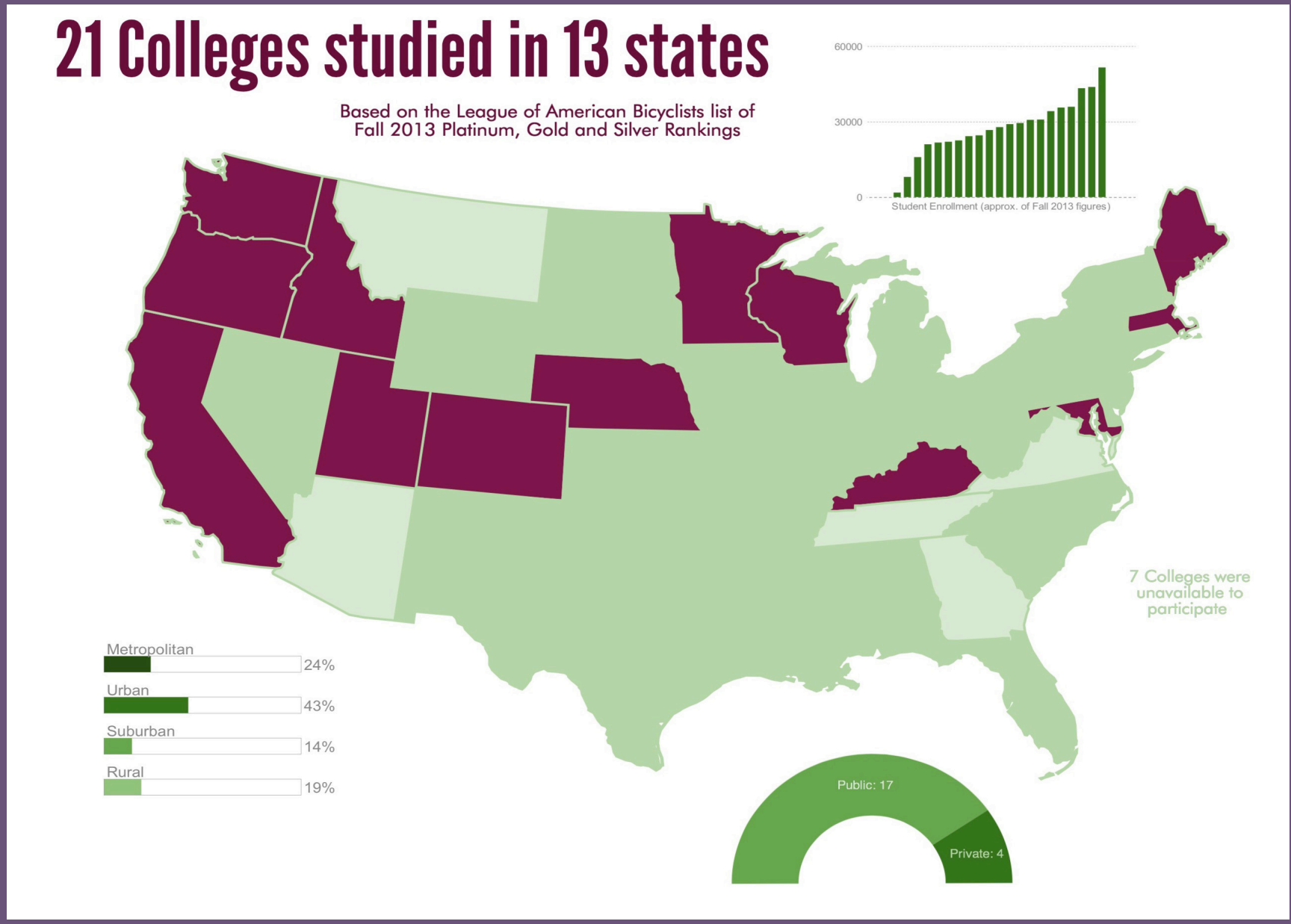


Figure 4. Study Group Map & Statistics

This graphic represents the geographic distribution of the study group universities. In the top right is a bar chart with the range of student enrollment figures from Fall 2013 for the study group. The chart on the bottom left explains the urban to rural setting counts for the study group. Finally, the bottom right chart shows that 17 universities in the study group are public institutions, while only 4 were private.

	College/University	Location	Student Population	Campus Type:	Public /Private	Acreage	Winter Weather
Platinum	**Stanford University	Palo Alto, CA	15,900	Urban	Private	8,180	Negligable
Platinum	**University of California Davis	Davis, CA	34,155	Rural	Public	5,300	Negligable
Gold	*Portland State University	Portland, OR	29,452	Metropolitan	Public	50	Moderate
Gold	*University of California Santa Barbara	Santa Barbara, CA	21,685	Rural	Public	1,055	Negligable
Gold	*University of Minnesota Twin Cities	Minneapolis, MN	51,526	Urban	Public	932	Harsh
Silver	Boise State University	Boise, ID	22,003	Urban	Public	180	Harsh
Silver	Bowdoin College	Brunswick, ME	1,795	Rural	Private	215	Harsh
Silver	California State University Long Beach	Long Beach, CA	35,592	Urban	Public	323	Negligable
Silver	Colorado State University	Fort Collins, CO	30,700	Suburban	Public	5,000	Harsh
Silver	Harvard University	Cambridge, MA	21,000	Metropolitan	Private	5,083	Harsh
Silver	University of California Irvine	Irvine, CA	29,000	Rural	Public	1,474	Negligable
Silver	University of California Berkeley	Berkeley, CA	35,899	Urban	Public	1,232	Negligable
Silver	University of La Verne	La Verne, CA	8,032	Suburban	Private	26	Negligable
Silver	University of Louisville	Louisville, KY	22,529	Urban	Public	287	Harsh
Silver	University of Maryland	College Park, MD	26,658	Suburban	Public	1,250	Moderate
Silver	University of Nebraska	Lincoln, NE	24,207	Metropolitan	Public	617	Harsh
Silver	University of Oregon	Eugene, OR	24,548	Urban	Public	295	Moderate
Silver	University of Utah	Salt Lake City, UT	30,819	Metropolitan	Public	1,535	Moderate
Silver	University of Washington	Seattle, WA	43,762	Metropolitan	Public	690	Moderate
Silver	University of Wisconsin	Madison, WI	43,275	Urban	Public	936	Harsh
Silver	Utah State University	Logan, UT	27,812	Urban	Public	7,000	Moderate

Table 2. Study Group statistics

Study group demographics

The study group is represented by both a table below and a grahpic on the next page. The information displays the demographic and geographic spread of the study group. Twenty-one of the twenty-eight Platinum, Gold and Silver Bicycle Friendly Universities were available for phone interviews (see Table 2 & Figure 4). A 75% response rate is indicative of the interest and passion expressed by these coordinators for their programs and events. Coordinator tenure ranged from six months to thirty years in the position. Interview length averaged 33 minutes, with some lasting as long as an hour.

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

Interviews with current university bicycle coordinators represents the main findings for this study.

Chapter Organization:

- **Study Group Demographics [previous page]**
- **Interview Responses**
- **Emergent Themes**

Interview Responses

Summary

Active college campus bicycle program coordinators provided a wealth of information, feedback and insight through open conversation, targeted questions, and space to unpack their thoughts and opinions. The Phone interviews described in the previous chapter constitute the primary qualitative data set for this research.

The interview responses are listed after each correlating interview question. Responses tended to express shared attitudes on similar topics, with unique explanations and details. The greatest difference between interviews can be significantly attributed to the different stage of development each school and program identified with at the time of the interview. The common threads and themes allowed the responses from Individual interviews to be summarized. However, there is great insight in the actual terminology and phrasing used by the interviewees, which is why the findings include quotations to support the summarized findings. Identities of the interviewees are left out of the findings because the individual identities were not the subject of the interview.

Response Structure

The following responses to the six interview question represent the most common and most emphasized responses given across the study group. Each response section will have a general interpretation of the responses given, and then the individual responses will be summarized and listed according to the nature of the question, but generally they are in order of frequency, from most often to least often.

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

Question One - Responses

What is the history of your campus bicycle services/program?

Responses to question one varied in the most in length among all of the questions asked. The longest response lasted several minutes and consisted of a history review from the coordinators personal experience because he had been around the campus for over 30 years. The history covered the bicycle coordinator position, as well as the different departments the bicycle program had been housed under over the years. The shortest replies were from coordinators who had only been in the position for a few months. The breakdown of interview respondent titles is represented in Figure 5. below.

Each respondent seemed to waver in his or her clarity of past events, from time to time. This did not seem to be a failure of memory, because most coordinators shared it, regardless of tenure. The hesitancy in their speech was instead interpreted to signify the convoluted or phased process that led to their programs' beginning. Very few interviewees could signify one date or event that established their programs. Most programs grew out of existing services.

Responses Summarized:

- Simple bike parking racks dating back to the 1960s were the first step for most campuses to accommodate bicycles.
- Some environmental-related initiatives in the 1970s expanded alternative transportation offerings on a limited basis.
- UC Davis hired its first Bicycle Coordinator in 1980, Stanford hired one in the late 90s, and the U. of Minnesota hired a half-time Bicycle Coordinator in 1996.
- 'Bicycle' or 'Alternative Transportation' Coordinator positions originated for most of the universities between 2000-2010.
- Colorado State University created an Alternative Transportation Coordinator position in 2013, and three schools ranked Silver have no full-time staff position to facilitate only bicycle and/or alternative transportation services: Bowdoin, U. of La Verne, and UC Berkeley. (Figure 5.)

Figure 5. Program Coordinator Titles

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

- Four programs moved over the years from other departments to become apart of their respective Transportation Dept.; coming from Facilities, Police, Physical Planning and an Outdoor Program.
- Most schools have some form of Bicycle Committee. Each vary in size, representation and impact.

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

Question Two - Responses

In your opinion, what are the three most important bicycle services and/or programs you provide to your campus community? And why?

This question was answered one of two ways. Coordinators either had three or four services they quickly listed off as if they were being explained to a potential user of the services, while others drew out the answer by explaining a host of different services without put them in any specific order. This dynamic was only identified after facilitating a number of interviews, and returning to the notes to confirm answers. Coordinators who could rattle off their top three services seemed to prioritize their services according to how much attention, funding or popularity they each received. The other respondents seemed to be trying not to prioritize the services, and express a need for a comprehensive service approach.

Responses Summarized:

- Each interviewee was eager to explain their services, and those that did not have much to share spoke about what was in the works.
- All schools mentioned the need for new and improved bicycle parking.
- Maintaining an on-campus bike shop ranked the most important bicycle service, the most often.
- Facilitating a bike rental program ranked the most important, second most often.
    - Even the schools without official bike rental programs have some form of limited rental system, either through their student government, a private business, or integration with the city bikeshare.
- Infrastructure and Parking were both ranked the most important, third most often.
- Half of the schools mentioned bicycle education and safety courses.
- Encouragement events and campaigns are popular at each school, and in many different forms.
- Commuter classes are offered at about half of the schools.
- The most creative services include: bicycle riding incentive programs, bicycle pur chase discounts, RFID tag data collection censor systems, and Bike Valets.

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

Question Three - Responses

What are the pros and cons of where your position and programs sit within the organizational hierarchy of your college/university?

Question three received a lot of information. The responses are summarized below, as well as in Figure 8., which shows the supervisory department breakdown of the study group, and finally, a sample of the most common organizational chart is provided at the end of this subsection.

Respondents received question three with some rigidity. Many interviewees took time to come up with thoughtful answers to this question. The premise of the question forced them to consider their experiences and opinions on the matter of organizational hierarchy within the framework of 'pros', and 'cons'. This structure was followed by most respondents, but many suggested that the 'cons' were more opportunities then negative factors. Only a few coordinators provided assertive replies for their 'cons'.

Responses Summarized:

- Six interviewees expressed unease over the current organizational set up.
- A small minority of the programs are significantly spearheaded by staff, rather than through student initiative.
- Students sometimes expect to find the bicycle program elsewhere, under another department other than transportation, partly due to campus culture demonizing the transportation department.

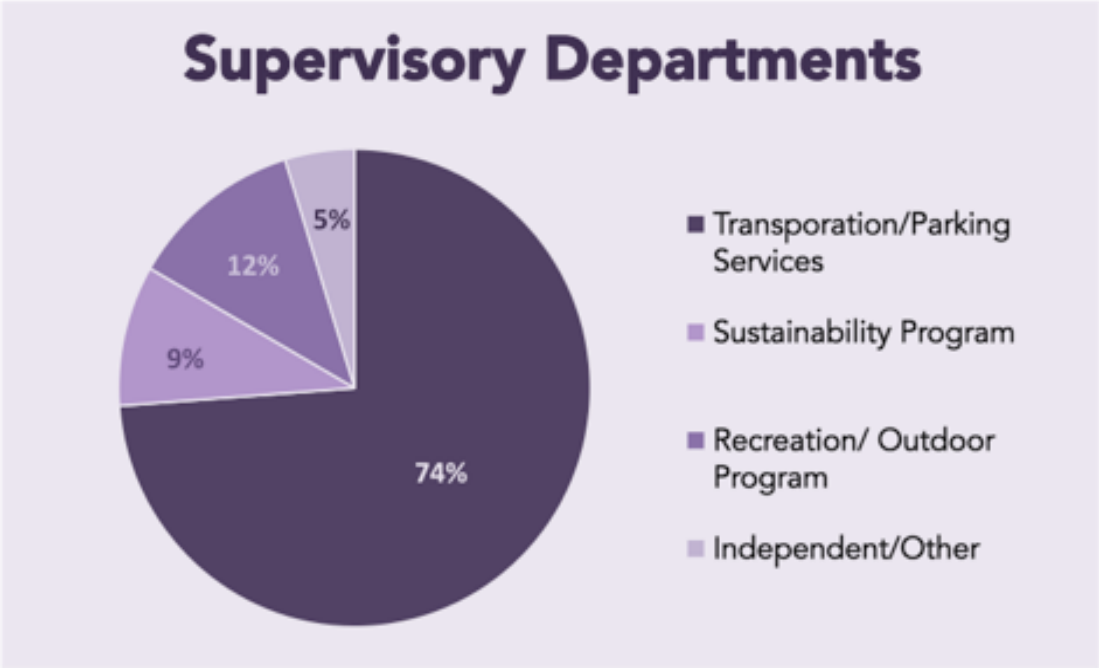


Figure 6. Supervisory Departments

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

PROS

- Many programs enjoy relative autonomy being apart of an Auxiliary service department, which usually houses its own finance and operations divisions.
- Majority of coordinators are comfortable with most of their funding coming from parking permits and citations.
- Being apart of a transportation department validates bicycles as a mode of transportation.
- Presence in an administrative department provides institutional credibility.
- Program Coordinators are considered experts in their field by their universities.

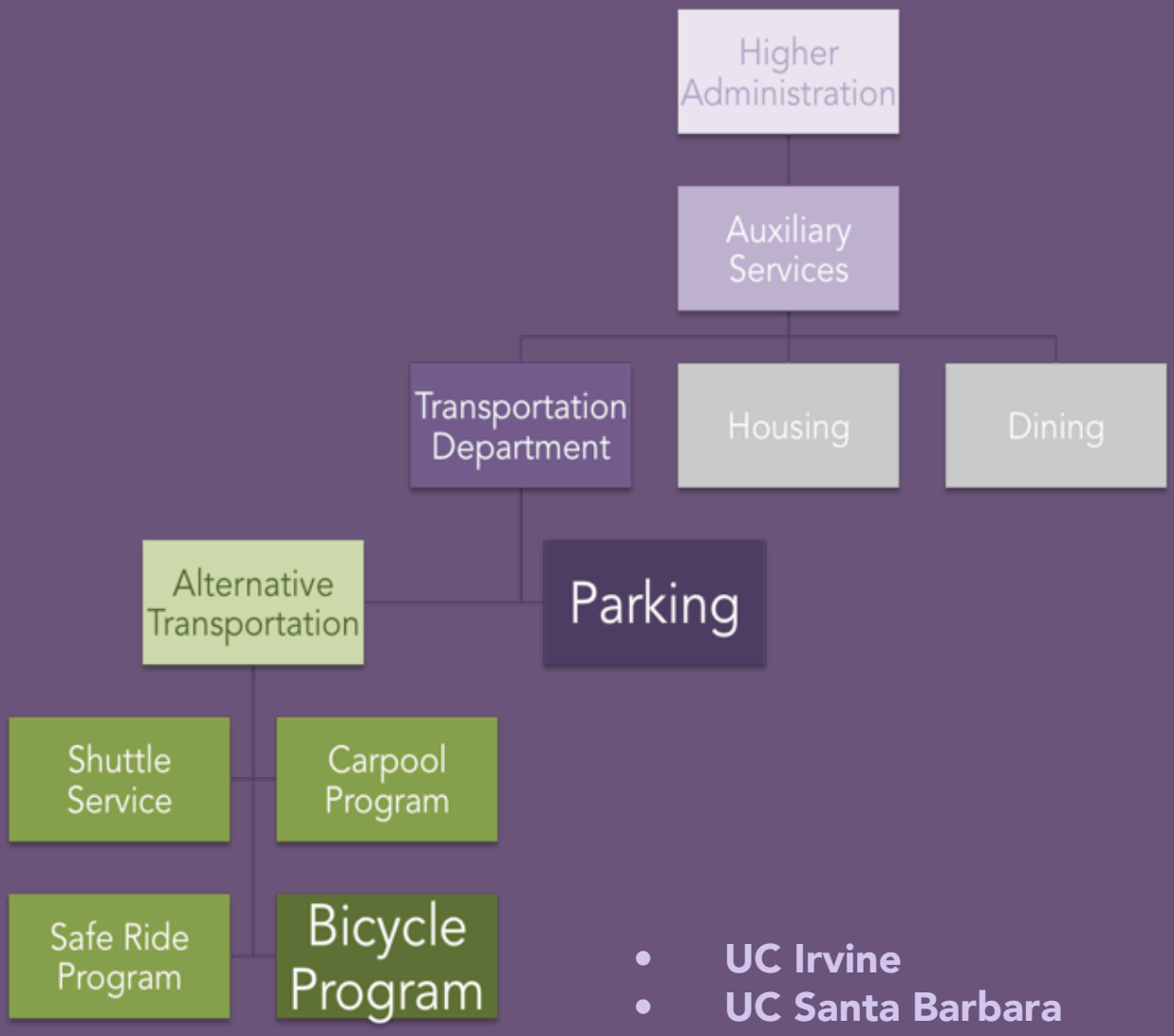
CONS

- Student fees to support bicycle services come in unpredictable waves.
- There is concern over supporting alternative transportation modes with car parking permit revenue.
- Two programs hope to migrate their services towards greater integration with their transportation departments.
- Bicycle Committees are generally powerless and meet infrequently.
- Most programs don't have much social or financial capital to execute their own projects.

The Organizations Chart below represents a sample of the most common organizational hierarchy at the universities interviewed. Explanations of the institutional structures were included in the responses to question three. It is helpful visualize where each program sits within the university, and in comparison to other universities. (Other organizational charts can be found in Appendix D.)

Common Organizational Chart

Figure 7. Organizational Chart



- **UC Irvine**
- **UC Santa Barbara**
- **University of Minnesota**
- **Cal State Long Beach**
- **Colorado State University**
- **University of Washington**
- **University of Wisconsin**
- **Harvard**

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

Questions Four - Responses

How has your university supported your work? How does this support differ among the administration, faculty and/or students?

This question resulted in the broadest variety of answers because the term 'support' meant something slightly different to each respondent. Some interviewees took the term to signify funding sources, while others considered conceptual support applicable. A few respondents considered all groups and parts of campus life in their answer whereas others answered only about administrators, faculty and students. Figure 8 below displays the offices and groups expressed as significant collaborators with the bicycle programs. Responses were consistently positive on faculty support, various on administrative support, and students were casually noted as supportive.

Responses Summarized:

- Approximately one third of the interviewees expressed feeling greatly supported, one third expressed feeling content with their support, and one third expressed feeling only conceptually supported.
- Half of the schools remark that collaboration with their campus planners is a strength, while three schools express this in absence.
- High faculty bicycle riding is consistent across the schools
- Many programs view higher administrators as ambivalent to their cause.
- Six respondents expressed difficulty reaching higher administrators for support.
- Student support helps maintain many of the program services, however, the power of ridership was expressed more often student initiative.

Expressions of Strong, Moderate or Weak support was coupled with consistent factors:

Strong Support = Higher administrative promotion and financial support, adequate planning and departmental integration.

5 programs receive Strong support

Moderate Support = Only adequate planning and departmental integration, and little higher administrative promotion & financial support.

10 programs receive Moderate support

Weak Support = Very little planning, departmental integration, or higher administrative promotion or financial support.

6 programs receive Weak support

“The University supports our program from the highest level”
Stanford University interview

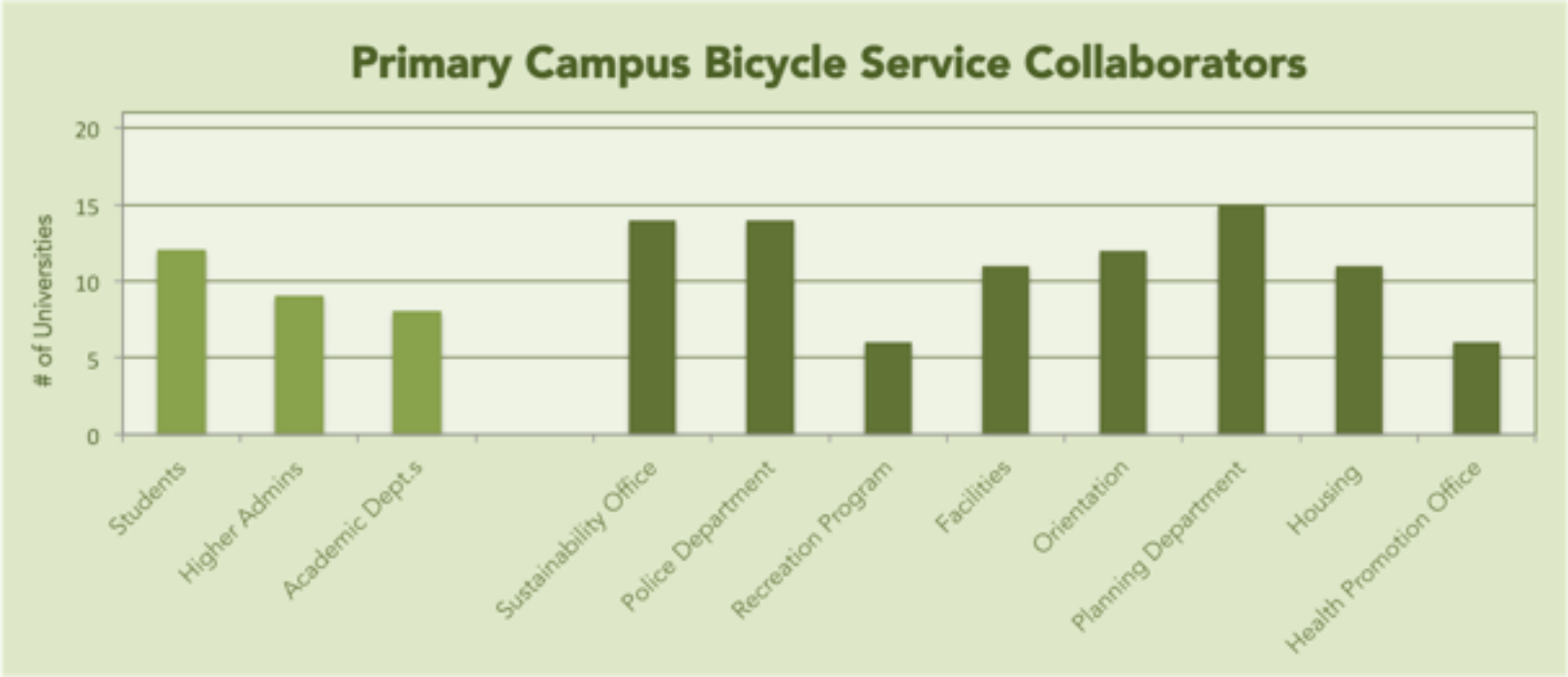


Figure 8. Primary Campus Bicycle Service Collaborators

Figure 8 above displays the offices and groups expressed as significant collaborators with the bicycle programs.

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

Question Five - Responses

How well are your bicycle-use promotion services integrated with other university services?

Very few respondents had complete answers to this question. The coordinators at Stanford, the University of Louisville, Boise State University and the University of Utah could each name at least a half dozen promotional events or activities without hesitation. The majority of the remaining respondents, however, named one or two campaigns that were in progress. A common response was an education and security campaign led by the campus police department. Regardless of number of events and activities listed, most interviewees suggested that they were not reaching the entire campus community with the current promotional efforts, and that the success of their programs was dependent on improved promotional methods.

Responses Summarized:

- Bike to Work Day and Commuter Challenges are regular events on all campuses.
- A few programs can provide promotional events or materials, but only if they campaign for other departments support, first.
- Five schools have higher administrators who regularly bicycle to campus.
- UC Irvine and U. of Louisville host riding events with their Chancellor and President.
- Sustainability offices are major supporters of bicycle programs.
- Four schools do not provide time during orientation for presentations on bicycle use. Most others are either mentioned during Transportation or Police Department presentations.
- Police Departments are very supportive of safety and security campaigns and distributing information and materials.
- Stanford University has over 30 promotional events during their Fall Orientation season.
- U. of Washington teaches a 'Ride in the Rain' course.
- U. of Nebraska and Chipotle host a regular Wednesday Burrito Bike Ride.

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

Question Six - Responses

What is the next big step for bicycle use on your campus? Describe what you hope bicycling on your campus will look like in 5 years?

Respondents seized upon this question to explain all of the remaining services and events they had yet to mention, or wished to mention again. The majority of the next big steps were continuations of the existing programs and campaigns, instead of new events. A positive outlook was shared by all of the respondents. Many suggested, and most implied that they believed in the eventual shift in culture that would bring greater support with it.

Responses Summarized:

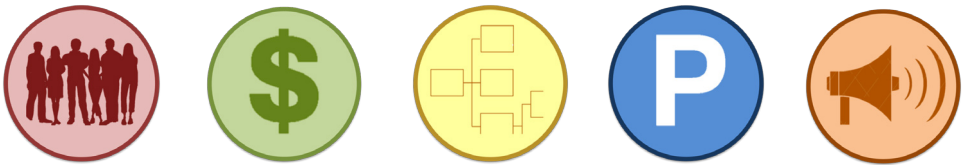
- More bicycle parking is a universal need and desire.
- Greater depth in educational classes and workshops, and more encouragement campaigns will come with more funding.
- All interviewees hope for infrastructure and amenity improvements.
- UC Irvine's bicycle infrastructure is nearly complete.
- Stanford will soon construct a new bicycle roundabout, similar to one built in 2007 at a pedestrian/bicycle crossing formerly known as the Intersection of Death
- Half of the interviewees hope for some form of further institutionalization, either addressing funding concerns and/or formalizing planning and programmatic services.
- Several mention a need for more secure funding sources
- There is a need for more planning and greater design/development standards for bicycle infrastructure and amenities.
- LEED standards are not good enough.
- Increases in housing and university growth calls for more parking and expanded services.

Above Left: University of Utah (credit U. of Utah Bike Program , Above Right: Harvard University (credit Harvard CommuterChoice)
Below: Portland State University (credit PSU Bike HUB)

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

Emergent Themes

The interviews addressed several different themes and topics. The recurrent and highlighted topics, including those absent from the literature review, have been organized into Emergent Themes:



Culture
Funding
Departmental Integration
Police
Promotion

These Emergent Themes were identified and organized through a two-step process. The first step examined the common and unique answers to each of the interview questions. The answers were scanned for common statements, phrases, terms and arguments. For example, comments on program funding were quite common, and these comments expressed their significance to the life of each program. Funding, therefore, was chosen as an Emergent Theme.

The Emergent Themes are categorized according to the elements of successful sustainable practices discussed in Chapter 2.

Credibility – Culture

Salience – Funding & Departmental Integration

Legitimacy – Police & Promotion

The Emergent Themes were then matched with the three elements above: Credibility, Salience or Legitimacy. Some of the themes from the first step contained information that is applicable to more than one of the three elements, however, for the sake of this study, themes were assigned to the element they most significantly addressed. For example, statements relating to timelines, community values and displays of commitment from administrators all seemed to point towards a theme involving Culture. Cultural issues brought to light from the interviews addressed the adequacy of their positions as bicycle advocates among their professional peers, and therefore this theme was matched with Credibility.

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

CREDIBILITY

The credibility received by the bicycle programs and the program coordinators is a core concern expressed directly by the interviewees. According to Cash et al., credibility is an element of a successful sustainable practice because it addresses the "adequacy of the technical evidence and arguments" (p. 8086). The technical evidence to support reasons for bicycling and the current increase of bicycling rates is available to every bicycle coordinator, as well as to their university communities. The adequacy of these figures, and the arguments that coincide with them, however, fall short of their potential impact, and this was communicated through the interviews particularly through the theme of Culture.

CULTURE

Bicycling culture is unique to each of the campus communities examined, and it has a significant influence on program development potential, or lack thereof. There is an ethos with bicycle planning professionals that bicycling has yet to 'make-it', and that society underestimates the potential bicycles have to offer. Regional and local cultural attitudes, as well as professional bias towards bicycle advocacy were present throughout the answers and topics raised during the interviews. 'Culture' was directly named by a number of the interviewees, and related issues involving community values and institutional priorities were connected to larger social themes.

According to the interviewees, the structure and organization of the support offered to bicycle programs from university administrations was strongly linked to the history and culture of the campus context. Campus bicycling could be traced back at Stanford to the early 1890s, whereas Utah State University is combatting a 'conservative' culture on campus and with the city of Logan, UT. Today, Stanford is recognized as one of the most advanced communities in higher education to commit to alternative transportation. Utah State University has begun to establish its credibility in the arena of alternative transportation services by earning a Silver ranking from the League of American Bicyclists, however the program there still struggles with the outdated transportation regime discussed in the research in Chapter 2 of this report (Vreugdenhil, & Williams, 2013). Many interviews supported the argument that the stubbornness and rigidity of existing transportation structures are barriers to program growth and development. Interview comments that pertained to cultural change, creative promotion and campaigns for departmental integration are all examples of the current struggle to overcome a transportation regime developed in a culture and time well before recent attempts to institutionalize bicycle services.

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There are a number of physical and social factors that contribute to cultural attitudes towards bicycle use on a regional basis, such as: average climate, daily weather, terrain, infrastructure, amenities, history of organization, advocacy and demographics. Interviewees from Bowdoin College in Brunswick, ME spoke about the need for greater storage space for bicycles during harsh winter conditions. The Bicycle Coordinator at Stanford University mentioned how bicycles have been present on campus since the late 1800s, and that there are many bicycle manufacturers and bicycle advocacy groups in the greater San Jose area, who regularly support bicycle initiatives. To better understand how issues can compound upon each other, particularly insightful culture-related comments are organized below by scale.

Community

- Town & gown relations, including regional agencies, can either be very helpful collaborators, or disinterested partners. Utah State University experiences the latter.
- Edges of campuses and off-campus connections require working with cities that either don't have money, or the political will to implement change.

Institution

- Administrators don't see the value in bicycle service investment, which results in little political will for further commitment to bicycle services.
- Bicycle or Alternative Transportation Coordinators can often be at the bottom of the totem poll, or caste system in the institutional hierarchy.
- Bicycling needs to be recognized as a transportation issue.
- **"Bicycles have come of age as a valid transportation option"** Stanford University interview

Students

- **"There has been a lack of continuity, because students come and go"** UC Berkeley interview
- 'Helicopter parents' who rarely let their children bicycle has led to a generation of students who know how to bike, but view it as only a mode of recreation.
  "They're not treating it [bikes] as a vehicle".
  U. of Maryland interview

Answers to Questions # 1, 5 and 6 specifically uncovered subjects associated with history, university support and programmatic aspirations, all of which have roots in cultural pre-conceptions. Culture is also one of the most impactful themes discovered from the interviews, because its influence on decision-makers directly affects the future maintenance and growth of college bicycle programs.

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BICYCLE COORDINATOR INTERVIEWS

UC Davis and Utah State University are great examples of two universities on different ends of the cultural spectrum, but both seem to be head in the same direction; towards greater bicycle program support.

UC Davis

Founded 1905.
34,155 enrolled.
Located in Northern CA.
Sunny and mild climate.
Bike = 22.1%
(Fall 2013 L.A.B. application figures)

"I don't think we have many institutional barriers here because since the 1960s, both the campus and the city have made decisions, and radical decisions for the time, to promote bicycling"

* First city in America to install bike lanes ('67)
* Campus Bicycle Coordinator since 1980

UTAH STATE UNIVERSITY

Founded 1888.
27,812 enrolled.
Located in Logan, UT.
Moderate climate.
Bike = 2.0%
(Fall 2013 L.A.B. application figures)

"We're trying to create a culture here"..."that looks at cycling in a different way"

* Program began in '05 to combat poor Air Quality
* Overcoming a 'Conservative' campus culture
* Funded by Sustainability Office & AmeriCorps

Photo Credits: UC Davis Bike Program (Left), USU Bike Program (Right)

SALIENCE

The salience of bicycle programs to the mission of a university needs no explanation for bicycle advocates; however, the interviewees expressed how they constantly struggled to convince their administrations and/or other community agents how and why bicycling should become an integral part of an academic institution. According to Cash et al., salience is an element of a successful sustainable practice because it addresses the "relevance of the assessment to the needs of the decision makers" (p. 8086). The two clearest examples of institutional commitment to bicycle programs as a relevant part of a university's mission involve Funding and Departmental Integration.

FUNDING

Funding is usually a very good measurement of institutional commitment. In the case of college bicycle programs, funding comes from a variety of sources, most often considered auxiliary, or support services to a university's primary academic mission.

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The following is a list of funding sources identified by interviewees:

- Auxiliary department administrative funds
- Car parking permit revenue
- Car parking citation revenue
- Student fees
- Sustainability funds
- Project and department specific contributions
- City/Regional funds
- Outside grants

Parking Permit & Citation Revenue

All of the programs housed under or in partnership with a transportation department receive some amount of car parking permit and/or citation revenue. A few interviewees mentioned in a positive light how revenue from parking was a steady funding source. More interviewees, however, spoke about the instability of their funding structure. Citation revenue was considered to be a much smarter funding source for alternative transportation then permit revenue, because, as the interviewee from UC Irvine put it; **"If you have that kind of financial set up [funding from parking permits], you're asking your sustainable transportation group to put themselves out of business."** Several other program coordinators inferred this point as well. If the goal of bicycle programs is to provide a mode shift choice away from single occupancy vehicles, and many coordinators said their mission was such, then how can these services continue if they are funded by the very mode they are trying to retire?

Paying for projects/campaigns

The organizational structure and influence of the program has a strong influence on the flow of money. Schools with popular programs, well supported by other departments can either have other departments pay for their contribution to a project/campaign, or bicycle programs can tap into centralized funds for alternative transportation services. Schools with little organization and weak departmental support, however, either rely on outside grants, ever-changing student fees, or funds from sustainability offices. **"We're pushing from the bottom up, to the middle, and I would like to get some top down support going"** U. of Maryland interview

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Future of Funding

The future of many bicycle program funding sources is uncertain. Under particular threat are those programs funded significantly by student fees, such as the U. of Oregon and Bowdoin College. Permit and even citation revenue is expected to dry up at urban and metropolitan universities where driving is being discouraged. Even suburban and rural campuses that have a lot of surface parking lots will most likely cede prime university real estate to future housing and academic buildings.

"The university needs to recognize this transportation issue, and by recognizing it they'll start funding it"
U. of Nebraska interview

The University of Wisconsin and the University of Louisville have faced their share of funding concerns.

U of Louisville

Founded 1798.
22,529 enrolled.
Located in Louisville, KY.
Moderate climate.
Bike = .4%
(Fall 2013 L.A.B. application figures)

Students continually shooting down the 'Green Fund', a slight fee increase, is the third most critical institutional barrier.

* Sustainability Council provides adequate funding
* Projects can be sponsored by departments

U of Wisconsin

Founded 1848.
43,275 enrolled.
Located in Madison, WI.
Harsh winter climate.
Bike = 3.9%
(Fall 2013 L.A.B. application figures)

"The bike program is very well supported conceptually"..."The conceptual support isn't what pays for programs"

* City and Campus established a car parking cap
* Funding decreases as parking permits decrease

Photo Credits: U. of Louisville Bike Program (Left), U. of Wisconsin Bike Program (Right)

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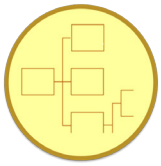
BICYCLE COORDINATOR INTERVIEWS

"Winning over a couple people higher up definitely helps"
Portland State University interview

DEPARTMENTAL INTEGRATION



Association with as an official university service/program comes with instant credibility, potential funding, and networks of other offices and divisions that also support university functions. Integration of bicycle services and programs into the university setting has generally followed the same trajectory; grass-root activity and services develop and eventually become either support by, or incorporated into formal university offices. Depending on the level of funding and cultural acceptance of the programs, however, the support bicycle programs receive from their primary sponsors, such as a Transportation Department or Sustainability Office, and other university services, such as Facilities, Housing and Planning, can vary greatly. Figure 17, shown again below, displays the number of interviewee who identified which group and offices were significant collaborators with their bicycle programs. The interviews have also revealed the importance of persona, and the benefits of being a champion for this relatively marginalized service.

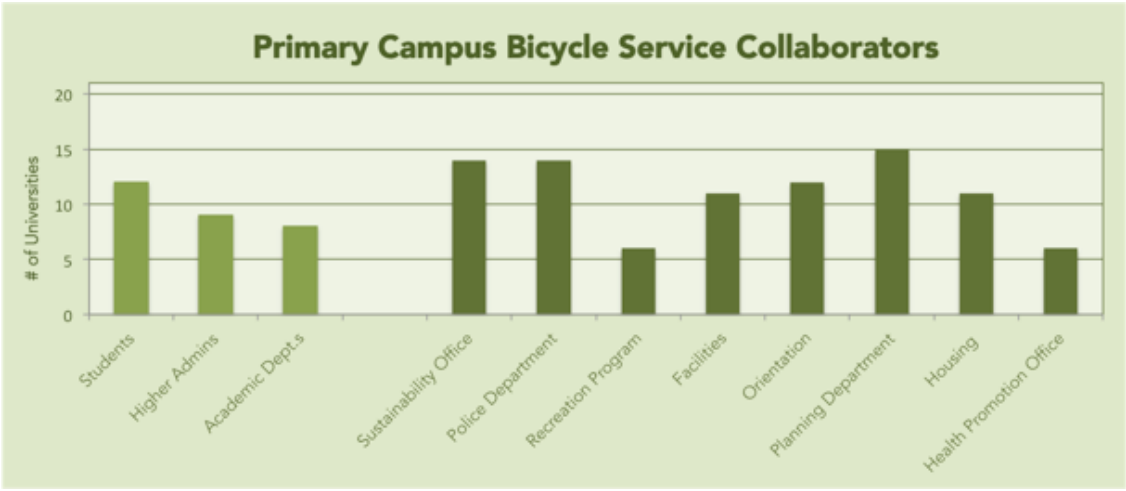


Figure 8. Primary Campus Bicycle Service Collaborators

Transportation Departments

"People don't even think we're the same group, because they love us [Bike UMD], and they hate DOT [Dept. of Transportation]" U. of Maryland interview

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BICYCLE COORDINATOR INTERVIEWS

For the multiple programs in this study that are housed under a Transportation/Parking Department banner, support can still be limited. Many Transportation Departments have recognized that car parking is not their sole responsibility. **"Parking is simply an aspect of a greater academic realm called transportation demand management."** (UC Irvine interview) Non-automobile services have been organized into mission/theme-oriented groups. For example, Harvard University has a Commuter Solutions office that promotes bicycle services. UC Santa Barbara has a Transportation Alternatives Program (TAP), and UC Irvine has a Sustainable Transportation Manager. Grouping bicycles with other services, such as carpool and ZipCar services has a dual affect. Being apart of the department validates Bicycling as a mode of transportation, however, being financially lumped in with several other services also marginalizes bicycling as an alternative option, and not a primary mode.

Several bicycle programs are working towards greater integration with their university administration. The Campus Bicycle Committee at UC Berkeley is working to institutionalize the campus student-run bike shop, which started under a stairwell, but will soon have a brand new space. Bicycle services at the University of Nebraska are run out of the Campus Recreation Outdoor Adventures Center. Servicing bicycle commuters, however, should be recognized as **"transportation issues, not recreation issues"**. Stanford has taken an unusual approach and placed its Transportation Dept. under its Sustainability Office, which requires all transportation decisions to first consider a sustainable approach.

"In the right place" [in Parking and Transportation Dept.] U. of Minnesota interview

Bicycling as a solution to Car Parking Issues

"They [higher admins] see bicycles as a solution to a lack of parking" Portland State University interview

Only a few interviewees accredited their support received from their transportation/ parking departments as a resolution to automobile parking issues on campus. The program coordinators at Portland State University and the U. of Louisville were the only coordinators to speak of parking as a serious transportation issue, while most others noted that it was expensive to park on campus. Stanford and the U. of Washington stated that mode shift away from single occupancy vehicles was the goal of the entire transportation department the most frequently and firmly. However, most interviewees inferred as much, or expressed mode shift was the goal of the bicycle program, if not the entire transportation department. A more common response than parking issues was that bicycling was an intentional effort to address air quality concerns. Most interviewees also noted that first year students are not allowed to purchase a parking permits.

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University Resources

Bicycle programs are generally kept separate from the educational sphere of university life. However, the most creative and exciting programs mentioned in the interviews integrated the bike program into the academic curriculum. Boise State University provides a Cycling Learning Center on campus that provides resources for bicyclists, including safety and repair workshops. Boise State also offers a mountain biking course. The University of Washington offers commuter classes, and a Commuter Commons center in its student union. Harvard University will soon initiate a marketing campaign with several other universities in the Boston area to promote Hubway (the city bikeshare system) and other bicycle safety campaigns.

Stanford appears to lead the way in university wide cooperation. The Bicycle Coordinator at Stanford listed the following groups as regularly supportive of bicycle services and events: Biochemistry department, Graduate School of Business, Design School, Law School, Cancer Center, Department fleets, Marketing, Housing, Orientation and the School of Medicine. Many of these departments run their own events, but they often look to the Bicycle Program for materials and coordination.

"It's an honor to tap into all of the brain power here to solve our problems" Stanford University interview

The University of Maryland and the University of Oregon have met with challenges when it comes to recruiting other departments to prioritize bicycle planning, or take initiative on issues related to their field and bicycle use.

U of Maryland

Founded 1856.
26,658 enrolled.
Located in College Park, MD.
Moderate climate.
Bike = 3.9%
(Fall 2013 L.A.B. application figures)

Masterplan is not being followed concerning bicycles. Arborists and Fire Chief complain about conditions that are planned for, but not implemented.

* Young Planners & Architects are on board
* The program recieves only mid-level support

U of Oregon

Founded 1876.
24,548 enrolled.
Located in Eugene, OR.
Moderate climate.
Bike = 21.0%
(Fall 2013 L.A.B. application figures)

"[Bicycling] Should be as important as managing parking" Transportation and other departments will help if asked.

* Bike Program is housed in the Outdoor Program
* Cross dept. cooperation must be sought after

Photo Credits: U. of Maryland Bike Program (Left), U. of Oregon Bike Program (Right)

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LEGITIMACY

Legitimacy has to do with establishing a positive and accountable reputation that is respected by the community. According to Cash et al., legitimacy is an element of a successful sustainable practice because it addresses the "perception that the production of information and technology has been respectful of stakeholders' divergent values and beliefs" (p. 8086). In other words, when high-level administrators and students both agree that bicycling is a beneficial asset for the campus, then legitimacy of the program is gained from two central and often divergent community stakeholders. The themes that most closely coincide with this element are campus police departments, and bicycle program promotion.

POLICE

University Police or Public Safety Departments are a regularly involved with campus bicycling. Every interviewee mentioned their campus Police at some point during the conversation as a positive influence on their program and services. Police take responsibility for all users on and off the road, regardless of their personal or professional advocacy towards alternative transportation. Principles of community security require law enforcement operations to administer to bicycles from both a user safety and property protection standpoint. Enforcement is a key tenant of good bicycle planning and service, and it is one of the League of American Bicyclists 5 E's in its Bicycle Friendly America campaign. This theme encompasses more then just enforcement, because enforcement often takes place through Transportation Departments, and often with student hired Community Service Officers (CSOs), and as my interviews have displayed, Police play a larger role in campus bicycle services than solely enforcers.

Safety and Security Advocacy

Police Departments have led the way at many universities (on their own initiative in most cases) for providing bicycle safety and security related materials, classes and programs. Police sponsored programs at several schools facilitate bicycle locking campaigns that often involve distributing educational material and sometimes actual locks. One program that was highlighted in an interview is the *Bicycle Educational Enforcement Program (B.E.E.P.)* at UC Irvine. The Police Department used bait bikes with RFID tags to track stolen bikes and catch the thieves. Through this effort, in partnership with the Transportation and Distribution Services Department, bike thefts dropped from approximately 27 per month to now only 3 or 4 per month. This is especially helpful, as another interviewee pointed out, because people are investing more money and time into their bicycles these days. Events and campaigns like this significantly help bike programs provide encourage bicycling, and provide services in a safe environment.

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The campus Police Departments at UC Irvine and the University of Utah have taken significant steps to address bicycle use education and security issues on campus.

U of Utah

Founded 1850.
30,819 enrolled.
Located in Salt Lake City, UT.
Moderate climate.
Bike = 3.5 %
(Fall 2013 L.A.B. application figures)

"We partner with our Department of Public Safety to do a 'Lock It Or Lose It' program"

* Complements alternate modes in Commute Office
* Pass out free Kryponite U-Locks to participants

UC Irvine

Founded 1965.
29,000 enrolled.
Located in Irvine, CA.
Moderate climate.
Bike = 1.15%
(Fall 2013 L.A.B. application figures)

[thanks to adopting NACTO] "A bicyclist on the road has the same rights and responsibilities as a driver on the road"

* B.E.E.P. program with Police lowered bike theft
* Sustainable Transportation is consulted as experts

Photo Credits: U of Utah Bike Program (Left), UC Irvine Bike Program (Right)

PROMOTION

Getting the word out about bicycle services and programs is an essential task for college bicycle programs. Each interviewee expressed a desire to have more students aware of their services, and attending their events and workshops. Promotional activity has become a regular part of annual academic event calendars, starting with orientation and wrapping up with National Bike Month in May. Materials, websites and other media are used by many groups and departments across campus. Housing tells resident students were to store bikes. Police promote bike locking techniques. Recreation centers advertise outdoor trips. Sustainability groups calculate green house gas emissions saved by bicycling.

Regardless of how far their bicycle programs have progressed, these interviews have exemplified how most universities participate in two basic bicycle promotion events; Bike to Work Day, and a Commute Challenge. This year, National Bike to Work Day was May 16, but many employers and cities can set their own day. Several interviewees stated how supportive most staff members were of their Bike to Work Day; either by participating or requesting promotional materials to distribute in their offices. Commuter challenges are usually organized either by Transportation

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BICYCLE COORDINATOR INTERVIEWS

departments or Sustainability groups, and they track how often employees bicycle to work in a given month, and offices are rewarded for good performance.

One of the more creative promotional tactics mentioned in an interview was the Wednesday Burrito Bike Ride at the University of Nebraska. The Campus Recreation and Chipotle have teamed up to offer a Wednesday evening bike ride that starts and ends at the campus bike shop. Students receive a free burrito, and guests can participate for $5.

High-level Administrators

The most inconsistent method of bicycle promotion across the twenty-one colleges was commute modeling by higher administrators. The University of La Verne interviewee commented how helpful it can be for bicycle culture promotion for students and community members to see faculty and other visible figures riding their bicycles on a regular basis. Several interviewees noted how Transportation Department heads tend to bicycle to work, but the amount of VPs, Presidents and Chancellors was very sporadic. UC Irvine Chancellor is a road cyclist who hosts a 20 mile bike ride, which has attracted over 100 riders. The Provost of California State University Long Beach is a daily cyclist as well, and the University of Louisville hosts a Pedal with the President Day. The University of Utah runs a Summer Air Quality Challenge, for which commute rides play a significant part, and the Director of Facilities, known as 'Mike on a Bike', has consistently been a model rider for his department to win the challenge. Many of the other universities, however, were not aware of many higher administrators ever bicycling to work, but welcome to the idea.

"the more visibility cycling has, the better off we're going to be" UC Berkeley interview

A model of Sustainability

A common source and forum for college bicycle service promotion is in sustainability circles. Sustainability Offices, or students groups regularly advocate for bicycling as a sustainable practice that reduces Green House Gases. The Utah State University, University of Utah, and UC Irvine coordinators stated how state air quality mandates are very influential in their program identity. At the University of Washington, the campus climate action plan is strongly linked to mode shift towards bicycling and walking. Bicycle programs often enjoy a good amount of advertising from environmental plans and campaigns.

The Need for Promotion

The interviews have expressed a need for more promotion of a bicycle services. The reasons behind why bicycle programs often need to distribute more materials and information were not directly addressed, but it was inferred that a program relatively

Chapter Four
BICYCLE COORDINATOR INTERVIEWS

new to the college campus administrative landscape is not always an amenity expected by new college students. Furthermore, because consolidation of bicycle services into formalized programs is a fairly recent development, most students, faculty and staff may not know that there exists a central source for all of their bicycle needs. This issue of visibility relates back to cultural expectations, and these interviews display how the most successful bicycle programs have succeeded in spreading the word about their programs, and begun to ingrain it in their campus culture.

"Having it recognized as a transportation option is key to promoting it all equally." U. of Utah interview

Stanford has paved the way for promotional activity on campus, and Harvard is working with other local universities to team together on promotional campaigns.

Stanford

Founded 1885.
15,900 enrolled.
Located in Palo Alto, CA.
Mild climate.
Bike = >20%
(from interview)

There are over 30 bicycle promotion events during the Fall Orientation season.

* RAs facilitate in-dorm bicycle education
* School of Medicine began regional safety forum
* Bio-chemistry, Law, Business,etc... promote events

Harvard

Founded 1636.
21,000 enrolled.
Located in Cambridge, MA.
Harsh winter climate.
Bike = 7-9%
(Fall 2013 L.A.B. application figures)

A coordianted marketing campaign for campus bicycling will launch next Fall with other Boston area universities.

* LOOK safety campaign encourages awareness
* $10 helmets available at Commuter Office
* Promote Hubway city bikeshare

Photo Credits: Stanford Bike Program (Left), Harvard Bike Program (Right)

Above: Stanford (credit Stanford Bike Program)
Below: UC Irvine (credit UC Irvine Sustainble Transportation)

Findings Sur

	PLATINUM		GOLD			SILVER				
	Stanford University	University of California Davis	Portland State University	University of California Santa Barbara	University of Minnesota Twin Cities	Boise State University	Bowdoin College	California State University Long Beach	Colorado State University	Harvard University
ENROLLMENT	15,900	34,155	29,452	21,685	51,526	22,003	1,795	35,592	30,700	21,000
BIKE COMMUTE SHARE %	> 20 %	22.1%	6.30%	about 50%	3.6%	4.10%	5.4%		9.90%	7-9%
SERVICE/ PLANNING STAFF POSITION	Bicycle Program Coordinator	Bicycle Program Coordinator	Bike Hub Supervisor	Transportation Alternatives Program Coordinator	Alternative Transportation Manager	Cycling Learning Center Coordinator	Sustainability Officer/ Student Co-op	Sustainable Transportation Coordinator	Alternative Transportation Manager	Commuter Choice Program Coordinator
PRIMARY FUNDING	T&P & Capital Projects	T&P & outside Grants	P&T	T&P & Student Fees	P&T	T&P & Recreation	Student Activity Fees	P&T	P&T	CommuterC ce & Hubwa
SERVICE HIGHLIGHT	30 fall orientation educational events	First Bike Coordinator hired in 1980	City has provided lots of infrastructure	Partially motivated by State Air Quality Standards	RFID tags and Incentive program	Mtn. biking and engineering courses offered		Provost is daily cyclist	Travel ambassadors	Hubway Station & Bicycle Promotion coordinatio with other Boston area Universities
INTERVIEWEE QUOTES	**"The University supports our program from the highest level."**	**"I don't think we have many institutional barriers here because since the 1960s, both the campus and the city have made decisions, and radical decisions for the time, to promote bicycling"**	**"They [higher admins] see bicycles as a solution to a lack of parking"**		**"In the right place" [in parking dept.]**					

Table 3. Findings Summary Table

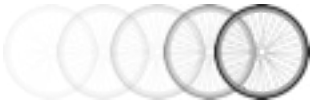
This Table summarizes the key demographic information, service highligh university participants. Also shown above are the community bicycle com plications submitted to the League of American Bicyclists, OR were comm data sources and sourcing methods. Please keep this in mind when comp

mmary Table

	University of California Irvine	University of California Berkeley	University of La Verne	University of Louisville	University of Maryland	University of Nebraska	University of Oregon	University of Utah	University of Washington	University of Wisconsin	Utah State University
	29,000	35,899	8,032	22,529	26,658	24,207	24,548	30,819	43,762	43,275	27,812
	1.15%	11%	8.6%	0.4%	3.90%	1%	21%	3.50%	9%	3.90%	2%
	Sustainable Transportation Supervisory	Campus Bicycle Advisory Committee	Transportation & Pakring Services Coordinator	Sustainability Project Manager	Bicycle Program Coordinator	Recreation Dept. Director	Bicycle Program Coordinator	Commuter Services Bicycle Coordinator	Active Transportation Specialist	Pedestrian & Bicycle Transportation Planner	Aggie Blue Bikes Program Coordinator
Choi y	T/D services; citations, but not permits	T&P & grants	T&P	Sustainability Council. Students shoot down funding	Students funds	Recreation Dept.	Student Union/Outdoor Program & Student Fees	T&P & Sustainability project funds	Parking Citations & Grants	Parking Permits	Student fees & Ameri-Corps grant
n	Infrastructure near complete. Anti-Theft program.	Design Guidelines in 2006 Bike Plan	Private fix-it and promotional company comes to campus	Earn-a-bike voucher	Lots of bike parking	Wednesdays Chipotle Burrito Bike Rides	DIY workshop & rental program	Air Quality efforts motivate participants	Ride in the Rain class & Burke-Gilman Trail through campus	City and University have cap on car parking	Fighting a conservative campus and city
	"If you have that kind of finanical set up [funding from parking permits], you're asking your sustainable transportatio n group to put themselves out of business."	**"We're working to get them [student bicycle shop] more and more institutionaliz ed"**	**"Our administrator s don't yet recognize the value in a full commitement to bike travel and transportatio n"**	**"Student orientatrion is the largest institutional barrier"**	**"We're pushing from the bottom up, to the middle, and I would like to get some top down support going"**	**"The university needs to recognize this transportatio n issue, and by recognizing it they'll start funding it"**	**"[Bicycling] Should be as important as managing parking"**	**"Having it recognized as a transportatio n option is key to promoting it all equally."**		**"The bike program is very well supported conceptually" ... "The conceptual support isn't what pays for programs"**	**"We're trying to create a culture here"..."that looks at cycling in a different way"**

nts, financial structure and interview responses from all 21 study group
mmute mode split rates; these percentages were gathered from the ap-
municated during the interviews. The percentages come from a variety of
paring university rates.

Chapter Five
INTERVIEW RESPONSE IMPLICATIONS



Chapter Organization:

- **Barriers as Themes**
- **Top Barriers**
- **League Ranking**
- **Expanding Existing Knowledge**
- **Policy Recommendations**
- **How to use this Study**

Barriers as Themes

The breadth and uniqueness of the information collected from the program coordinators suggests that a group of common themes rather than a list of precise barriers may more accurately apply to the universities in this study group, address the complexity of institutional networks, and have the potential to apply to other universities. Institutional barriers were identified in this study, however, the topics that were emphasized, and the degree to which they impacted the bicycle program varied greatly. This variation and dependence on situational factors does not undermine the validity of the interview findings, but it does require examining these institutional barrier themes with comprehensive consideration beyond the scope of the bicycle program.

Top Barriers

The Emergent Themes and topics from the interviews can be ranked in order of perceived emphasis and impact on their programs. The purpose of ranking would be to identify which institutional barrier themes were the most prevalent and impactful obstacles to program success and development, and subsequently prioritize which obstacles should be addressed first in order to attempt to alleviate or eliminate those barriers. It is important to note that this list is not necessary in the order in which schools should address their barriers, because each situation might call for a unique approach to reach similar goals.

1. **Credibility** & Culture – These two thematic categories are the foundation upon which the other themes arise.

2. **Legitimacy** & Promotion – Information and education are key to making campus communities aware of bicycle program service, and therefore more likely to use and support them.

3. **Salience** & Funding – Having universities administrators agree that bicycling is an important service for their academic and campus environment is a critical step towards securing funding and prioritization among other campus services.

Chapter Five
INTERVIEW RESPONSE IMPLICATIONS

League Ranking

The universities in this study group were ranked prior to this research, and for the most part these rankings held true through this study's findings and analysis.

PLATINUM – The only two universities ranked Platinum by the League of American Bicyclists, UC Davis and Stanford, presented the least amount of institutional barriers according to their interview responses and campus programming.

GOLD – The University of Minnesota and Portland State University both displayed an impressive network of programs, offices, staff positions and campaigns that all spoke to their close integration with their university culture and institution. UC Santa Barbara also displayed a number of programs, campaigns and offices, and their bicycle commuter mode share is the most impressive of all of the campuses studied, however, their interviewee expressed that institutional organization and departmental collaboration are areas for growth.

SILVER – The University of Washington and Boise State University presented significant organization structure that rivaled those of the GOLD awardees. The majority of the SILVER awardees consisted of relatively new programs and bicycle services that were either lumped together with other alternative transportation services, or were situated at the bottom of their universities priority list. Bowdoin College and the University of La Verne had the least amount of institutional integration. Neither has a professional staff Bicycle Program Coordinator or Alternative Transportation Planner.

Expanding Existing Knowledge

The responses and emergent themes collected for this study also help measure the relevance of existing literature. This research cannot say concretely if any of the themes taken from academic literature are either universally accurate or irrelevant, however, the frequency and depth of discussion on particular topics hints at which themes have been most influential on active bicycle programs.

The research of Rodney Tolley (1996) argued for capitalizing on the opportunity provided by excessive automobile costs for developing alternative modes of transportation. The success of these alternative modes, according to Tolley (1996), needed to be facilitated by comprehensive programs. This argument was reinforced by the interviews with current university bicycle coordinators. Responses to Question # 6, which asked about the future of campuses bicycle programs, displayed a common belief in the power of working through an academic institution, and the commitment coordinators possessed to actualize a significant modal shift away from single occupancy vehicles on their campus to bicycles. The variation of emergent themes identified from the interviews demonstrated that the program coordinators were considering a range of issues consistent with Tolley's (1996) discussion on comprehensive program structuring.

Chapter Five
INTERVIEW RESPONSE IMPLICATIONS

Carlos Balsas (2003) augmented Tolley's work with specific case studies that showed the organizational elements of recognized college bicycle programs. Balsas (2003) enumerated bicycle committees, plans, infrastructure and many other supporting factors in his study. He concluded that even with all of these rare elements, administrative support for bicycle programs was deficient for programs aiming to produce greater mode shift and change their campus transportation culture (Balsas, 2003). This conclusion was strongly supported by several interviews with active coordinators. While some respondents shared satisfaction over the support they received from their administrations, these coordinators were the minority of the study group, and many of them still commented on hopes for greater funding and resource support.

The interviews revealed institutionalization of sustainable practices as the area with the most promise for supporting bicycle programming. Sustainable practices represent an attempt to bridge advances in science and technology with practical arrangements; the success of which has been argued to depend greatly on credibility, salience and legitimacy (Cash, et al., 2003). Current bicycle coordinators identified the level of credibility they received as a valid transportation commute mode to be inadequate. Few coordinators shared any satisfaction over the amount of institutional credibility they received from their parent administrations and their broader campus communities. Responses on this topic returned again to the theme of cultural change. Credibility originated from different areas and groups for each program. The University of Louisville sourced credibility from their campus Sustainability Council, whereas the University of Washington sourced credibility from their Transportation Department. The culture of the university institution could often be seen at work behind these structures of support and credibility.

Chapter Five
INTERVIEW RESPONSE IMPLICATIONS

Policy Recommendations

The following policy recommendations are based on the interview responses, emergent themes and themes addressed from existing academic literature for the purposes of improving institutional frameworks within which college bicycle programs can further develop and grow.

- Directly ask high level administrators to help promote bicycling
- Establish a Bicycle Advisory Committee with a higher administrator
  - The committee should include representatives from different communities and offices on campus, including at least one VP or high-level administrator.
- Hire a full-time Bicycle Program Coordinator
  - The coordinator can become the point person connecting all university resources.
- Allow outside bicycle advocacy groups and campaigns to educate and promote bicycling on campus
- Provide a physical space for bicycle services
  - A physical space will become the face of the program and build credibility as an office within a permanent physical and organizational structure.
- Include the Bicycle Program Coordinator in regular Transportation Department meetings and decisions
  - Or assign a liaison from the Transportation Department to work directly with the Bicycle Program Coordinator.
- Explore more secure funding sources
  - Successful case studies of applicable funding structures?
- Prioritize alternative transportation modes in order of developmental potential through the use of plans and project strategies
- Decide if campus bicycle services are expected to replace, or simply supplement automobile transportation on campus
- Improve education to students, faculty and staff on the costs of automobile parking and pollutant emissions
- Encourage student initiatives and involvement
  - Large student support may be an affective method of communication of evolving expectations for administrators and transportation staff members.

Chapter Five
INTERVIEW RESPONSE IMPLICATIONS

How To Use This Study

This study has built upon existing knowledge in the field of college bicycle planning with interviews from current campus bicycle coordinators. These interviews have provided practical experience and perspective distinct from, and supportive of, the academic literature on this topic. The professional insight from current program coordinators has addressed previous literature and suggested new issues for discussion, such as the influence and after affects of parents and their modeling of transportation use on the current generation of college students. Although the qualitative and subjective nature of this research does not provide hard scientific conclusions, the cultural significance and potential policy implications from addressing themes from academic literature with actual professional commentary and feedback should not be underestimated.

The topic of institutional barriers is a necessary complement to existing best practice and strategy-based reports addressing the implementation of transportation demand management and sustainable practices. The interview responses, and emergent themes identified in this research are very contextual, but those contextual identities and influences are shared by many universities in the same regions, or in similar cultures or stages of development. Universities with no experience with providing bicycle services can examine the literature themes, research questions to begin to ask their campus communities how they wish to proceed with organizing sustainable practices and services like alternative transportation. Additionally, universities that have committed to particular institutional structures for their bicycle programs may examine the interview responses and emergent themes to compare the progress and status of their programs with those of other universities recognized for their attention to bicycle programming.

This research represents an important next step towards discovering the potential bicycling has for cutting back college campus pollutant emissions linked to transportation, and replacing excessive capital and maintenance costs for automobile parking with a cheaper and more efficient alternative.

Chapter Six
CONCLUSION

Chapter Organization:

- **Study Limitations**
- **Areas for Future Research**
- **Conclusion**

Study Limitations

The final part of the analysis phase of this research must consider any methodological limitations to accurately interpret the results and interpretations of the coordinator interviews. The first limitation to this study is the self-selected nature of the study participants. The list of League awardees is comprised of universities that voluntarily applied for a ranking. The University of Colorado at Boulder has long been recognized for its progressive bicycle services, however, it had not applied for a League of American Bicyclists rankings through the Fall of 2013, and so was not considered part of the study group.

Secondly, participant criteria explained in Chapter 3 does not account for any shortcomings or biases on the part of the League of American Bicyclists' ranking application measurements and priorities.

Thirdly, a bicycle coordinator position is not a stock position at most colleges. Coordinators, or related positions do not necessarily share traditional career paths, which means that their experiences with bicycle services may originate from various perspectives and professions. This is both insightful and inhibiting to the different themes and their relevance.

The last major limitation of this study has to do with the progress of culture regarding bicycling. Considering that most of the schools in this study have already significantly developed bicycle services, it is unclear how applicable their identified barriers will be to universities currently trying to develop their own bicycle programs. The study participant colleges have developed their services over the last decade or more. It is impossible to tell which institutional inhibitors have passed from our social dialogue, and what new barriers are on the rise.

Areas For Future Research

This study was limited to twenty-one universities self-selected by their voluntary involvement with a national bicycle advocacy organization, but the method of requesting qualitative information from current bicycle coordinators has potential that reaches far beyond the scope of this study. A larger sample of responses from current campus bicycle coordinators could be collected from more schools, and from a broader variety of locations and demographics. Additionally, the meth-

Chapter Six
CONCLUSION

ology could be expanded from interviewing only bicycle coordinator-type positions, to interviewing transportation planners, Transportation Department directors, higher-level administrators and community members such as students and faculty.

Fear of unstable funding sources for alternative transportation was a common experience shared during the interviews that relates to a number of different concerns and strategies that remain to be unpacked by academic literature. Many program coordinators are seeking more secure and permanent sources of funding. Paying for bicycle services with money raised from parking permits was a particular concern for some coordinators. Further research may consider what program coordinators mean by secure or permanent funding sources. Studies can collect transaction history and other information on parking permit revenue and examine the function it provide in financial support of alternative transportation services.

Campus planning and development is another subject with opportunities for more research. Many program coordinators mentioned they had some level of involvement in discussions and procedures for project planning and capital development on their campus, but only a few coordinators mentioned the existence of actual standards and guidelines written into the university code that intentionally involves bicycle service professionals in the development decision-making process. Furthermore, several interviewees questioned the sufficiency of LEED standards for new building projects. Both of these topics can be addressed in research that studies the level and frequency of integration of bicycle related issues and advocates on campus capital projects.

Another topic of interest raised in an interview that has yet to be widely researched is the effect of parental modeling on children when it comes to use and attitudes towards transportation modes. The influence of parents on their children who have grown to become young adults who regularly use transportation systems represents one of many potential off-campus influences that may affect on-campus preconceptions and behavior.

Conclusion

Alternative transportation is a growing subject in the transportation planning field, and college campuses have proved to be an insightful context to study bicycle programming. This study has revealed that institutional barriers to college bicycle program development are more common to all then they are campus-specific. The details of who and how the barriers came to be, and how they can be resolved are entirely unique to each university, however, the barriers themselves are different degrees of the similar shared experiences. Improving technologies as well as changes in culture and institutional priorities may alter the landscape of college bicycle programming, but the current institutional barriers are surmountable with strong organizational commitment to alternative transportation.

Chapter Six
CONCLUSION

Discovering these barriers and strengths will not only increase the field of knowledge and information available to program facilitators and college administrators, but they may give further credibility to a marginalized mode of transportation, and produce insight into creative means of integrating bicycling into existing transportation frameworks. Key to this process is attention to the factors of credibility, salience and legitimacy that are required to establish and maintain successful sustainable practices like bicycle planning (Cash et al., 2003).

The League of American Bicyclist rankings for the study group universities were fairly consistent with the level of institutional challenges present in each case. UC Davis and Stanford have pioneered the integration of bicycle programming into university life, but even their programs could always benefit from more funding and promotional support. Silver awardees generally have a lot more institutional integration to implement before they secure the social capital and capability to provide the level of services they hope to provide in the future.

Universities have been shown to play a leading role in sustainable development, and campus transportation is a critical area for sustainable growth. The benefits of greening the ivory tower (Balsas, 2003) have been calculated, and the costs of parking provide plenty of economic reasons for encouraging sustainable growth. Reaching the level of institutional stability that is required to successfully realize significant alternative transportation mode shifts with the full financial and cultural support of their campus community, however, means changing our thinking, and breaking free from our antiquated transportation regime.

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APPENDIX A.

"Bicycle coordinators and programs: why, how, what and who". Bicycle Federation of America: Federal Highway Administration.

TYPICAL DUTIES OF STATE PEDESTRIAN & BICYCLE COORDINATOR

A. Plan and manage new programs in the areas of non-motorized accommodations, safety, educational materials, enforcement materials, courses, and recreation.
B. Assist in development of State and MPO level bicycle and pedestrian facility plans.
C. Develop safety and promotional information through printed materials, videos, TV spots, press releases, interviews, and promotional activities.
D. Develop guidelines to assist all metropolitan areas in developing a comprehensive pedestrian/bicycle plan and provide assistance to local jurisdictions in the development of plans and programs.
E. Develop (or prepare) printed materials such as quarterly newsletters, maps showing bicycle and pedestrian routes, safety information, and answer inquiries from citizens.
F. Arrange for special displays and events, including conferences, workshops, and other public and technical information presentations.
G. Develop (if necessary), review, and update State's Comprehensive Bicycle and Pedestrian Transportation Plan.
H. Serve as principal contact with Federal, state and local agencies, the press, citizen organizations, and individuals on matters relating to bicycles and pedestrians.
I. Coordinate and maintain budget and forecast budgetary needs.
J. Review projects for conformity with design standards and the state's comprehensive plan as it relates to bicycle and pedestrian facilities.
K. Identify legislative requirements and recommend appropriate changes in state law to facilitate maximum utilization of the bicycle and pedestrian modes for transportation purposes.
L. Maintain current knowledge of sources of funding for program. Work with appropriate offices to fully integrate bicycle and pedestrian projects in programming decisions.
M. Serve as bicycle and pedestrian advisory committee member (if applicable).
N. Develop priorities for special studies in areas such as:
    1. cause of accidents
    2. locations of accidents
    3. effectiveness of new facility designs
    4. needs analysis
    5. barrier removal analysis
    6. origin and destination surveys
O. Monitor pedestrian and bicycle use, provide recommendations for system improvement and develop usage data.

TYPICAL QUALITIES OF A SUCCESSFUL STATE BICYCLE/PEDESTRIAN COORDINATOR

1. Commitment to non-motorized means of transportation - interested in the fields of bicycling and walking, and personally supportive of these modes
2. Technical experience - engineering and/or planning expertise relating to non-motorized travel useful, ability to assimilate technical information readily, problem solver and able to work through administrative as well as the inter-agency political process
3. Manager - Ability to coordinate contractual agreements; work within a budget; participate in developing training courses, and disseminating information to the general public and other government officials
4. Good Interpersonal Skills - Effective public speaker, with ability to chair meetings, coordinate contacts with the press and coordinate within various groups and organizations - both inside and outside the State government
5. Writing skills - Ability to organize thoughts clearly and concisely; understanding of the electronic and print media
6. People oriented - Outgoing, a good listener, enjoys mixing with a variety of people and sharing ideas and information
7. Creativity - Imaginative and possesses initiative to make new program a success
8. Assertive - Self-confident, enthusiastic person who will build on team developed projects

APPENDIX B.

League of American Bicyclists Fall 2013 Ranking. Bikeleague.org.

BICYCLE FRIENDLY UNIVERSITY

Current Bicycle Friendly Universities Fall 2013

Go to bikeleague.org/programs/bicyclefriendlyamerica/ to learn more about these universities

College/ University Name	Award	Location	Fall 2013
Stanford University	Platinum	Stanford, CA	
University of California	Platinum	Davis, CA	Moved up
Portland State University	Gold	Portland, OR	
University of California	Gold	Santa Barbara, CA	
University of Minnesota	Gold	Twin Cities, MN	Moved up
University of Montana	Gold	Missoula, MT	New
Boise State University	Silver	Boise, ID	
Bowdoin College	Silver	Brunswick, MA	New
California State University	Silver	Long Beach, CA	
Colorado State University	Silver	Fort Collins, CO	
Georgia Institute of Technology	Silver	Atlanta, GA	
Harvard University	Silver	Cambridge, MA	
Lincoln Memorial University	Silver	Harrogate, TN	
Northern Arizona University	Silver	Flagstaff, AZ	
Oregon State University	Silver	Corvallis, OR	
University of Arizona	Silver	Tucson, AZ	
University of California	Silver	Irvine, CA	
University of California	Silver	Berkeley, CA	
University of La Verne	Silver	La Verne, CA	New
University of Louisville	Silver	Louisville, KY	New
University of Maryland	Silver	College Park, MD	
University of Nebraska	Silver	Lincoln, NE	
University of Oregon	Silver	Eugene, OR	
University of Utah	Silver	Salt Lake City, UT	
University of Washington	Silver	Seattle, WA	
University of Wisconsin	Silver	Madison, WI	
Utah State University	Silver	Logan, UT	New
Virginia Commonwealth University	Silver	Richmond, VA	

APPENDIX C.

Initial Interview Recruitment Email.

Mr./Mrs._____,

My name is Matthew S. McCluney and I would like to invite you to participate in a phone interview for my Masters Exit Project research study, at the University of Oregon, concerning *Institutional Barriers to College Bicycle Programs*.

This research study aims to identify common obstacles experienced by colleges and universities across the U.S. in the process of developing their campus bicycle services. If bicycling is increasing, as the data tells us, then why aren't more schools giving it the funding and organizational credibility it deserves?

I need your help to complete this study. I have selected the bicycle coordinators from the 28 schools ranked Silver, Gold and Platinum by the League of American Bicyclists (Fall 2013) as my interviewees to gather lessons learned while developing quality bicycle services. I am seeking your expertise and experience as a key player in order to identify common obstacles overcame or still challenging your program. These lessons will add to the minimal scholastic literature available on collegiate bicycling, and hopefully help schools developing their own bicycle programs to anticipate the same obstacles.

I would like to schedule a short phone interview with you during business hours within the next two weeks, or before May 1st. The interview questions and consent form (seeking optional audio-recording and quotation permission) will be emailed to you prior to the interview to review. It is encouraged that interviews are recorded for better study analysis, but this is entirely at the interviewee's discretion.

If you would like to participate, **please reply to this email as soon as is convenient with a date and time you are available to speak over the phone**. If I do not receive a reply within three business days, I will follow up this email with a second email reminder, and after seven business days with no reply, a phone call to your office. I sincerely hope you decide to participate and help further the knowledge for the field of campus bicycle planning.

Thank you for you time. I look forward to hearing from you.

-Matthew S. McCluney
Masters Candidate, Community and Regional Planning
University of Oregon
mccluney@uoregon.edu
(909) 208-0668

APPENDIX C.

Reply Recruitment Email.

Good Morning,

Thank you for replying to my initial study inquiry and agreeing to take part in my Masters Exit Project on *Institutional Barriers to College Bicycle Programs*. Please read the following and review the attached documents. (If you have any trouble viewing the attached documents, please let me know and I will send them in a different format)

You will be asked the following questions in your scheduled interview. The questions are seeking as much knowledge and information about your experiences and the experiences of others with bicycle service on your campus. Please review them prior to your interview. *You are more than welcome to fill in answers to the questions before your interview.*

Please also review the **Consent Form** attached along with these questions. If you consent, please fill out and return a copy of the form to this email address (a mailing address may be provided upon request). You may email or call me at any time before or after the interview to make a comment or ask questions about the study and/or the interview.

Principal Investigator: Matthew S. McCluney
Phone: 909-208-0668
Email: mccluney@uoregon.edu

You have the option to have the phone interview audio recorded, or not. The recording is entirely for the purposes of accurate reporting of interview results. Use and disposal of recordings is outlined in the consent form.

Thank you for your participation in this study. I look forward to speaking with you at _____

1. Please tell me about the history and establishment of your campus bicycle services/program. *<Personalize>*

2. In your opinion, what are the three most important bicycle services and/or programs you provide to your campus community? And why?
    - Has there been any internal evaluation of your services, and if so, how was it performed?

3. What are the pros and cons of where your position and programs sit within the organizational hierarchy of your college/university?
    - Has your work taken over responsibilities previously held by other offices?

4. How has your university supported your work? How does this support differ among the administration, faculty and/or students?

5. How well are your bicycle-use promotion services integrated with other university services?

6. What is the next big step for bicycle use on your campus? Describe what you hope bicycling on your campus will look like in 5 years?
    - Do you believe bicycle service development to be a high priority held by your administration for your school's future growth?

APPENDIX C.

Consent Form (Page One)

University of Oregon
Department of Planning, Public Policy and Management

Informed Consent for Participation as a Subject in

Institutional Barriers to College Bicycle Programs
Principal Investigator: Matthew S. McCluney
Adult Consent Form

You are being asked to take part in a research study aimed at identifying the institutional barriers to college bicycle programs. You were selected as a possible participant because you have been identified as a program coordinator and/or staff member working on bicycle-related services. Participants in this study are chosen from institutions ranked Platinum, Gold, and Silver on the League of American Bicyclists' list of Bicycle Friendly Universities. We ask that you read this form and ask any questions that you may have before agreeing to be in the study.

If you agree to be in this study, we would ask you to do the following things:

- Complete and return a copy of this Consent Form, before or soon after the interview.
- Participants should read and contact the Principal Investigator (contact information below) with any questions they may have before completing the consent form or scheduling a one-time phone interview. The interviews will take place during regular business hours between March 15th and June 1, with a suggested length of 30 minutes, at which point the subject will be notified of the time and allowed to continue if they have more they would like to say.
- Review the interview questions prior to the scheduled interview. Prepared answers are not required, but encouraged.

There are no foreseeable risks or direct benefits related to participation in this study. There are no reimbursements or costs included in this study.

Confidentiality:
The records of this study will be limited to use only in this Masters Exit Project. In any sort of report I may publish, names and other personal identification information of participants will NOT be included without the participants consent. Due to the nature of this study, i.e. interviewing one particular position/office at a set list of institutions, however, names of institutions may be linked to significant findings or representations of thematic trends. Questions, answers and matters of personal opinion/behavior will be presented in categorical manner. If the interviewer identifies potentially helpful quotations from the interview, permission will be asked at that instance during the interview for quotes from the interview to be used within the study. Individual names will NOT be identified in connection with the quote(s) unless consent is granted.

All electronic information will be secured using a password protected file. Audio recordings will not be included in the final report, and will only be accessible to the Principal Investigator, and shared only with the faculty advisor, Professor Yizhao Yang. Audio recordings will be erased from the Principal Investigator's files upon final submission of this report or June 30th, 2014, whichever is first. Access to the records will be limited to the researcher; however, please note that regulatory agencies, the Institutional Review Board and internal University of Oregon auditors may review the research records.

APPENDIX C.

Consent Form (Page Two)

Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the University of Oregon. You are free to withdraw at any time, for whatever reason. There is no penalty or loss of benefits for not taking part or for stopping your participation. You will be provided with any significant new findings that develop during the course of the research that may make you decide that you want to stop participating.

The investigator may withdraw you from the study at any time for the following reasons: (1) withdrawal is in your best interests (e.g. side effects or distress have resulted), (2) or you have failed to comply with the study requirements.

The researcher conducting this study is Matthew S. McCluney. For questions or more information concerning this research you may contact him at (909) 208-0668 or at mccluney@uoregon.edu. If you have any questions about your rights as a research subject, you may contact: Research Compliance Services, University of Oregon at (541) 346-2510 or ResearchCompliance@uoregon.edu .

You will be given a copy of this form to keep for your records and future reference.

Statement of Consent:
I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this study. I have received (or will receive) a copy of this form.

Signatures/Dates **Electronic signatures are allowed

_____

Study Participant or Legal Representative (Print Name) **Date**

_____

Study Participant or Legal Representative (Signature) **Date**

I agree to have this interview audio recorded for the purposes of this study (optional):

Yes[ ] No[ ]

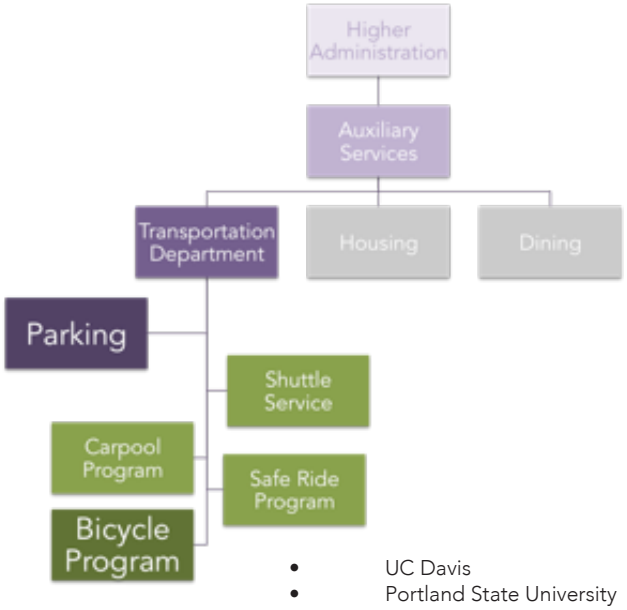
I agree to allow agreed upon quotations from my interview used for the purposes of this study (optional):

Yes[ ] No[ ]

APPENDIX D.

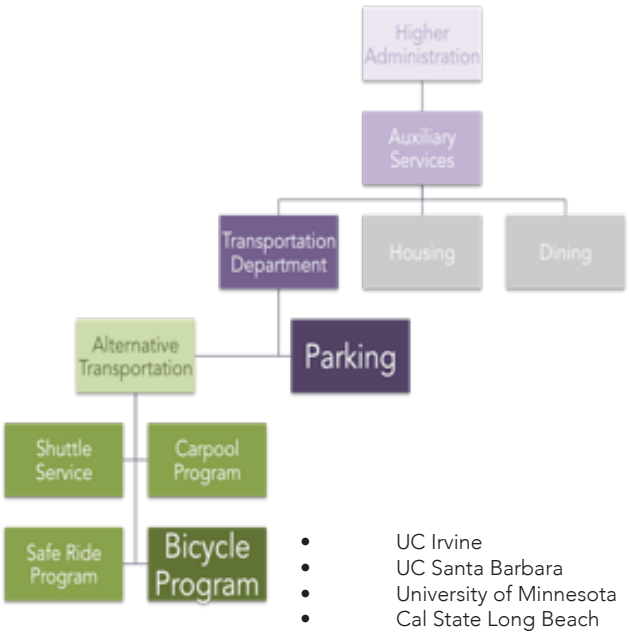
Organizational Charts
Figures 9-12

1. One of many Trans. Dept. services



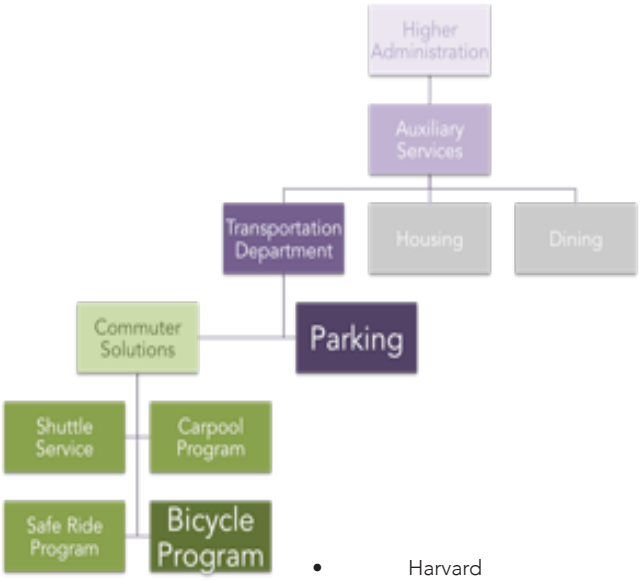
- UC Davis
- Portland State University
- University of Maryland
- University of Utah

2. One of a few 'Alternatives'



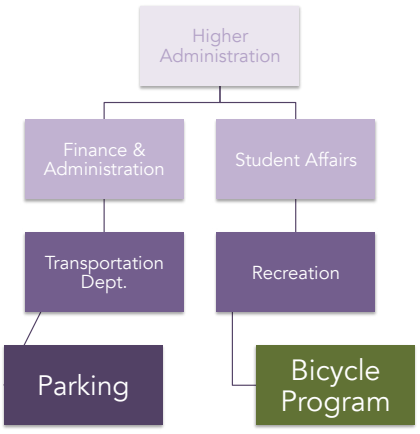
- UC Irvine
- UC Santa Barbara
- University of Minnesota
- Cal State Long Beach
- Colorado State University

3. One of a few 'Commuter Solutions'



- Harvard
- University of Wisconsin

4. Linked with the Recreation Department

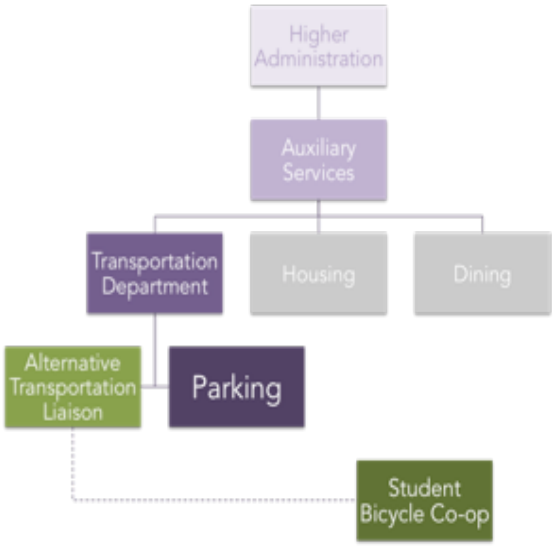


- University of Oregon
- University of Nebraska
- Boise State

APPENDIX D.

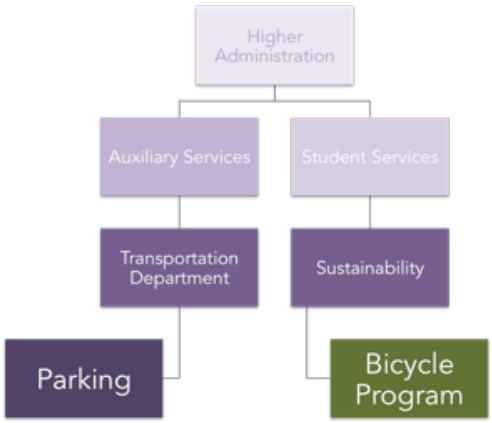
Organizational Charts
Figures 13-16

5. Separate student Co-op



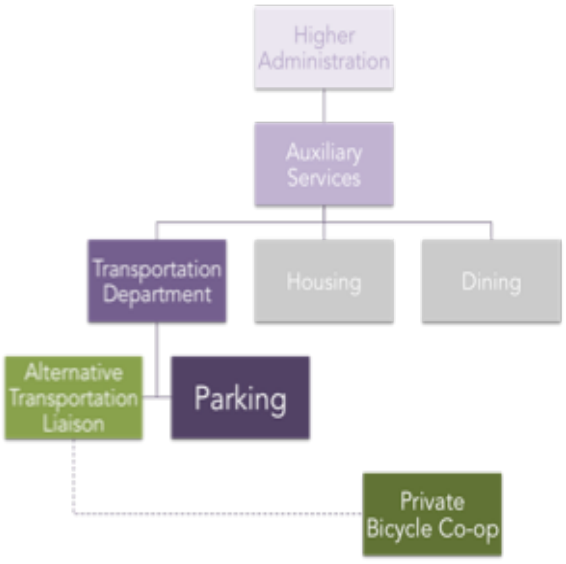
- Bowdoin
- UC Berkeley

7. Sustainability without Transportation



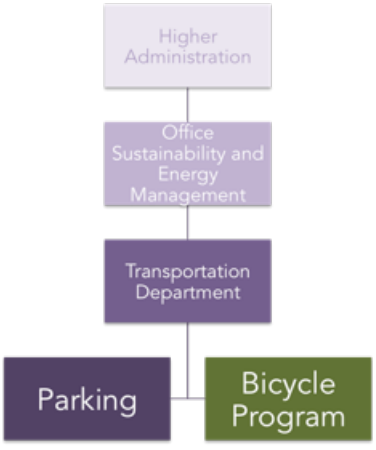
- Utah State University
- University of Louisville

6. Separate private Co-op



- University of La Verne

8. Sustainability with Transportation



- Stanford