

**The Information Environment of State Agency Heads:
Variations in Contact, Information Seeking, and Inclusiveness**

by

Kisha A. Hardwick

A dissertation submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy

Auburn, Alabama
May 5, 2018

Keywords: bureaucracy, state administration, contact, information seeking, decision making,
information environment

Copyright 2018 by Kisha A. Hardwick

Approved by

Cynthia Bowling, Chair, Professor of Political Science
Kathleen Hale, Professor of Political Science
Linda Dennard, Professor of Political Science
Jonathon Fisk, Assistant Professor of Political Science

Abstract

State agency administrators perform similar tasks across vastly different environments throughout the American states on a daily basis. These agency heads perform their duties at a unique nexus of politics, policy, and administration within the fragmented yet networked web of intergovernmental relations. Various studies focused on the policy process and policy diffusion have noted the importance that members of the bureaucracy can have as policy entrepreneurs, information brokers, or agents of change but little is known about their interactions with other actors during business-as-usual governance. This study examines state administrators' frequency of contact, frequency of information seeking, and inclusion of other political actors in their information environment.

Data was collected from an original survey distributed to state agency heads across all 50 states in four functional policy areas: economic development, education, environment/energy, and income security/social services. Of 21 different actors examined, agency heads most frequently have contact with administrators in the same state, clientele, citizens, gubernatorial staffers, and state interest groups. These same actors are also who state agency heads seek out for information most frequently.

These interactions with the top five most frequent contacts are used for additional analysis. Variables relating to individual exposure to outside actors, increased agency capacity, and the presence of competing interests within a state are analyzed for their propensity to increase contact or information seeking behaviors of state administrators. Additionally, the level

of inclusiveness of an administrator, defined as the number of frequent information sources he or she seeks out, is explored with the same variables.

The results show that variables related to exposure (tenure, experience, organizational affiliation) to external actors have a positive effect on contact, information seeking, and inclusiveness. Budget capacity also influences the three dependent measures but with variations in the direction of the effect. Competing interests within an administrator's state positively affect inclusiveness but has mixed effects for contact and information seeking for the relationships examined in this study.

Considerations at the individual, agency, and state level are all necessary in examining the actions of state administrators towards sources in their information environment. The goal of this project was to contribute to a general understanding about the information environments and behaviors of state administrators. It informs ongoing scholarly and policy debates about diffusion, networks, the role of public administrators in the policy process, and bureaucratic behaviors and decision making.

Acknowledgments

This dissertation would not have been possible without the tremendous support and encouragement of my family, my committee, my friends, and my colleagues. This journey was long and littered with roadblocks and pit stops, but I made it through because of the people who believed in and bolstered me.

First, I would like to thank to my dissertation chair and mentor of nearly 20 years, Dr. Cindy Bowling. Her enduring and unwavering support got me through this process. Many thanks are also due to my dissertation committee – Dr. Kathleen Hale, Dr. Jon Fisk, and Dr. Linda Dennard – for their contributions and assistance. I would also like to thank Dr. Mitchell Brown for her insight and advice throughout my time in the program.

Finally, there are not enough words to express my gratitude towards my husband, Alex, for the love, patience, and support he has given me over the past seven years. I would not have made it through my PhD without him. I am incredibly blessed and thankful to start the next adventure in this crazy, wonderful life with him and our daughter, Harper June.

Table of Contents

Abstract.....	ii
Acknowledgments.....	iv
List of Tables	x
List of Figures	xii
Chapter 1: Introduction	1
Public Administrators in the American States	2
Contact and Information Seeking Behavior	4
Information as a Resource	4
Information Asymmetry	6
Information Diffusion	7
Opportunities for Understanding	9
Chapter 2: Literature Review	12
Information as a Resource	13
Introduction	13
Policy Learning	15
Policy Networks	18
Information Asymmetry between Actors and Institutions	24
Principal-Agent Theory	24
Bureaucratic Discretion	26

The Spread of Information – Policy Diffusion	28
A Theory of Information Environments	32
Variations in Information Environments	42
Administrative Decision Making Influences	45
Research Questions and Hypotheses	47
Contact	47
Information Seeking	48
Inclusiveness	50
Conclusion	51
Chapter 3: Methodology	52
Study Population and Sample	52
Data Collection	53
Dependent Variables	54
Frequency of Contact with Other Political Actors	55
Information Seeking Activity	56
Inclusiveness	57
Explanatory Variables	60
Measuring Exposure, Capacity, and Competing Interests	60
Contact	66
Information Seeking	67
Inclusiveness	69

Control Variables	70
Administrator Characteristics	70
State Parameters	71
Descriptive Statistics	74
Data Analysis	78
Logit Models for Categorical Outcomes	79
Frequency of Contact	79
Frequency of Information Seeking	80
Count Model	80
Conclusion	81
Chapter 4: Findings and Analysis	82
Frequency of Contact with Other Political Actors	83
Exploring Administrative Contacts	83
Explaining Variations in Contact	85
Results	86
Administrators in the Same State	93
Clientele	96
Citizens	99
Governor's Staff	103
State Interest Groups	105
Aggregated Models of Contact	108

Information Seeking by State Agency Heads	114
Exploring Administrative Information Seeking Behavior	114
Explaining Variations in Information Seeking	116
Results	117
Administrators in the Same State	123
Governor’s Staff	124
Clientele	127
Citizens	129
State Interest Groups	131
Aggregated Models of Information Seeking	133
Inclusivity of Information Sources	139
Describing Inclusiveness	140
Explaining Inclusiveness	140
Results	141
Discussion	144
Conclusion	147
Chapter 5: Conclusion	149
Influences on Contact, Information Seeking, and Inclusiveness	149
Future Avenues of Inquiry	155
Information Environments in Theoretical and Practical Contexts	159
Adding to the Literature	160

Adding to Theories of Government	161
Concluding Thoughts	162
References	164
Appendix A	174

List of Tables

Table 3.1 Percentage of State Agency Heads Included in Population	53
Table 3.2 Variables	57
Table 3.3 Sample Descriptive Statistics: Individual Level Measurements	75
Table 3.4 Sample Descriptive Statistics: Agency Level Measurement	76
Table 3.5 Sample Descriptive Statistics: State Level Measurements	78
Table 4.1 Frequency of Contact with Other Actors by State Agency Heads	84
Table 4.2 Frequency of Contact Models with Top Five Actors	88
Table 4.3 Predicted Probabilities of State Agency Head Contact Frequency with Administrators in Same State	94
Table 4.4 Predicted Probabilities of State Agency Head Contact Frequency with Clientele	97
Table 4.5 Predicted Probabilities of State Agency Head Contact Frequency with Citizens	100
Table 4.6 Predicted Probabilities of State Agency Head Contact Frequency with Governor's Staff	103
Table 4.7 Predicted Probabilities of State Agency Head Contact Frequency with State Interest Groups	106
Table 4.8 Top 5 Most Frequent Contacts of State Agency Heads Full Models	109
Table 4.9 Frequency of Information Seeking from Particular Actors by Agency Heads ...	114
Table 4.10 Information Seeking from Top Five Actors	118
Table 4.11 Predicted Probabilities of State Agency Head Seeking Information from Administrators in Same State	123

Table 4.12 Predicted Probabilities of State Agency Head Seeking Information from Governor’s Staff	125
Table 4.13 Predicted Probabilities of State Agency Head Seeking Information from Clientele	127
Table 4.14 Predicted Probabilities of State Agency Head Seeking Information from Citizens	130
Table 4.15 Predicted Probabilities of State Agency Head Seeking Information from State Interest Group	132
Table 4.16 Top 5 Most Sought Information Sources Full Models	134
Table 4.17 Inclusive Variable	140
Table 4.18 Inclusivity of Information Sources	142
Table 4.19 Predicted Probabilities for Level of Inclusiveness	145
Table 5.1 Comparison of Frequent Contact and Frequent Information Seeking by Actor	158

List of Figures

Figure 1: Concept Map of Theories Relating to Information Environments	35
Figure 2: Information Environment	37
Figure 3: Individual Model of Potential Influences on Choices in the Information Environment	44
Figure 4: Significant Variables for Frequency of Contact	110
Figure 5: Significant Variables for Frequency of Information Seeking	135
Figure 6: Significant Variables for Inclusiveness	147
Figure 7: Significant Variables Affecting Models of Contact and Information Seeking ...	150
Figure 8: Significant Variables Affecting Model of Inclusiveness	154

CHAPTER ONE: INTRODUCTION

In the fall of 2017 several media outlets including CNN, *The Washington Post*, and the *New York Times* ran articles alleging the exposure of undue industry influence on the federal EPA Administrator, Scott Pruitt. The basis for these articles was the release of his calendar of meetings from his first three months in office. Twenty-five percent of his meetings were with representatives of industries such as mining, automobiles, and fossil fuels, while less than 1% were with environmental or public interest groups (Green and Kessler 2017). Are meetings with an administrator an indicator of influence? To the reporters at these major news organizations, the answer is yes. As writers for *The Washington Post* pointed out, he “met regularly with corporate executives...in several instances shortly before making decisions favorable to those interest groups” (Mufson and Eliperin 2017). The assumption is that access to a bureaucrat, in this case heading the federal Environmental Protection Agency, results in influence. That access insinuates the transference of information and opinions that could then translate into decisions and policy or program alterations or continuations. Connections between times of meetings and favorable decisions for those attending the meetings are just simple correlation, and correlation does not mean causation. Regardless of the decisions that Pruitt did or did not make, by spending time with certain actors over others, he suggested to the media and the general public that his bias or preference was towards one rather than the other. By knowing who this administrator interacted with, the reporters concluded that “it adds to understanding about how he makes decisions” (Mufson and Eliperin 2017).

Now multiply that by 50. Each state has an individual director in charge of environmental programs. Each day these men and women take meetings, lunches, and briefings with a myriad

of actors and entities interested in influencing the programs and policies enforced in their states. At the state level however, little to no media coverage shows concern for what state agency administrators do unless there is a scandal or hot button issue on the agenda. Media outlets in the states may have one (if that) person assigned to cover state politics or government. They must cover the governor, the courts, and the houses of the state legislature, as well as anything within a state agency. Little reporting occurs on the activities of state agencies and their directors. Are these state environmental agency administrators also meeting with more industry officials than advocacy groups? A lack of media coverage and general knowledge would lead one to the assumption that this may be happening at the state level as well. No systematic research exists in this area. Little is known about who state agency heads interact with and how that may translate into information and decision making. The goal of this dissertation is to fill this gap and provide valuable information about contact, information seeking, and inclusiveness between state agency heads and other political actors.

Public Administrators in the American States

Across the states, hundreds of state agency heads perform strikingly similar tasks in extraordinarily different environments. For example, the head of economic development for one state may have a budget of millions of dollars with hundreds of employees while another has minimal resources in both categories. Both are charged with enhancing the economic development of their states, however. Similarly, these different agency heads, while performing the same functions, may have vastly different levels of experience and divergent personal philosophies about what they need to do to ensure the success of their agencies. What these state

bureaucrats do, how they do it, and how their choices and mechanisms vary is a critical component to understanding the practical aspects of public administration at the state level.

Questions about contact and information provision to important policy-makers have permeated both academic research and the mainstream media for decades. This most often focuses on stories or studies of elected officials or high level federal secretaries or administrators. We do not have a large supply of data or information about access or decision making at the state level. Every day in the American states, state agency heads across all 50 states take action and make decisions that impact the lives and livelihood of individuals, groups, and organizations with little fanfare or accountability. Who do these bureaucrats have contact with? Who do they seek information from? Are their environments and information seeking behaviors framed by the agency or state contexts in which they operate?

Bowling and Wright (1998) point out the significance of studying state administration because of the increased capacity, complexity, innovation, and importance of state governments in the interconnected web of American intergovernmental relations (430). They additionally point out five reasons why state agency heads are an important, though sometimes overlooked, actor in political and policy processes: (1) they are tasked to carry out important *public* functions; (2) they participate in a wide range of activities beyond simple implementation; (3) they are responsible for interpreting vague or contradictory legislative prerogatives; (4) they have “critical” influence on agency effectiveness; and (5) they are the foundation of intergovernmental relationships because of their role at the nexus of various networks and both vertical and horizontal linkages (431).

State agencies and the individuals who lead them are a fascinating area for research because of the uniqueness of American federalism and the laboratories of democracy that exist.

The very essence of public policy at any level of government is the course of action or inaction that a governmental institution or individual chooses to take in response to a situation or perceived problem. At the state level, policy and program actions can be influenced by a number of political actors as well as by characteristics of the agency, state, or federal environment in which it is being carried out. Individual state administrators can be influenced in carrying out their duties by their own experiences and preferences as well as by the capacity, resources, and limitations within either the agency or state in which they operate.

Contact and Information Seeking Behavior

Current research about administrators, and specifically state level administrators, focuses on how bureaucrats are influenced or controlled within the context of policy or program implementation and institutional arrangements (Hicklin and Godwin 2009). Taking a broader view of these concepts, this study seeks to understand how interactions, behaviors, and information are shaped by the environment of bureaucrats in the American states and how state agency heads shape their own “information environments” by the choices they make in seeking out information. In what can be considered an oversaturated market, who do state agency heads choose to seek information from? Is this influenced by the contact they have with other actors or by individual, agency, or state characteristics?

Information as a Resource

Information is a resource that can be used and manipulated in many ways within the political and administrative spheres. Current literature on the role of information in the policy process is largely limited by its specific nature. Research typically looks at specific policies or

programs and how they were adopted, changed, or discarded (Shipan and Volden 2012). The nature of research on networks and learning often necessitates that it focuses on small, quantifiable networks or policy subsystems. However, government agencies function each day addressing many different areas that involve multiple actors and multiple networks. Policies, programs, rules, and regulations are continually examined, changed, or maintained without the clear ability to analyze the who, what, how, or why of those alterations. The examination of general information environments from the state bureaucratic perspective has not been undertaken. Tracing particular pieces of information or information dissemination within a time of innovation or change does not adequately explain how information is sought or used on a regular basis by agency administrators.

The term “information” is used within the scope of this research in lieu of “knowledge” or “learning” because of the conflicting nature of the current literature surrounding theories of this nature. Models abound on how learning can or should affect the policy process and the actions of individuals or institutions within it (Weible and Sabatier 2018; Workman, Jones, and Jochim 2009). The vastness that is the conceptual theories on learning is beyond the scope of this study. Instead, the goal is to examine the use of information as a type of “resource” in the policy sphere and the way that state agency heads potentially serve as information brokers in the networks of their policy arena or state. Who provides information to state agency heads? Are there single points of contact or many? And, how does this vary based on individual, agency, or state characteristics?

Information Asymmetry

One common assumption within theories of both the policy process and bureaucratic discretion is that information asymmetries between various actors in the political, policy, and programmatic processes exist. These asymmetries provide power to the individuals or institutions who have information and hamper those who do not. The practical aspect of dealing with these asymmetries leads to research studying how networks, institutions, and arrangements facilitate information sharing.

Similar to the variation in the concept of “information” throughout established literatures, “networks” are also a hot topic for study that sometimes lacks conceptual clarity and cohesiveness as it pertains to both political science and public administration (Klijn 1997). However, it is generally accepted that information is a central resource in networks as organizations surrounding any one area share and use information for policy development and diffusion across various levels of government (Hale 2010).

Actors in the policy process spend their days inundated with activities, individuals, and information and thus must prioritize in a boundedly rational manner. Policy is often comprised of what is easy or what is available. Networks assist in prioritization and information flow as Alexander, Lewis, and Considine (2011) explain because:

At the organizational level, by promoting trust and facilitating the flow of information between actors both within and across specializations and roles, networks might be expected to help mitigate barriers in the decision-making process associated with environmental uncertainty, while promoting social learning and expanding the organization’s knowledge base. (1275)

A model of networked actors constantly sharing information looks quite different from an ideal policy process model where a problem arises, there is ample time to study and seek alternatives, and potential outcomes are fully evaluated for decision-making in a linear fashion.

As such, studies looking at the flow of information as part of learning or organizing processes are limited in their ability to generalize with actual data. Theories abound that have been tested within small policy niches or subsystems, but state agency heads as a general group of actors are an untapped area of examination.

Information Diffusion

Policy diffusion is one area that has systematically tried to examine the role of information flow in the policy process. Specifically, scholars have tried to identify how knowledge (or “information” for purposes of this study) about policies in one area may have influenced adoption of similar policies elsewhere. A major difficulty here is that most diffusion studies rely on legislative adoption or formal administrative changes as a signal that a policy, program, or idea has diffused or been “learned” by another entity (Shipan and Volden 2012). Within specific policy networks or the general policy process, we know that non-action is itself a political choice. Programs, policies, and procedures are constantly being tweaked and adjusted long after initial legislative or administrative adoption without easily identifiable or quantifiable measures. These diffusion studies are thus informative in understanding the various processes and pathways that information may move through a system, but do not generally address what happens when no active changes or innovations are considered.

As experts in their fields, state administrators have broad discretion within their institutional capacities. Because of their specialized subject area knowledge, state level understanding, and administrative discretion, they are key to policy specific knowledge for other political actors. Jones and Baumgartner (2005) suggest that the attention of any given actor within the policy process is selective and limited. Thus, information coming from various

sources will not be processed and passed on neutrally, but will be influenced by individual, institutional, internal, or external factors. State administrators have the potential to be a nexus of information and linkage within these policy processes. In addition to their central role in implementation and evaluation, they provide information in a continuous feedback loop to others within their policy areas and networks. These roles throughout the cycle situate them in a very unique position to influence maintenance of the status quo or changes within their states and agencies.

Diffusion studies that focus specifically on the ability of bureaucrats to be change agents have found that job mobility (Teodoro 2009), discretion (Sowa and Selden 2003; Volden 2006), expertise (Boushey and McGrath 2017; Liu, Stoutenborough, and Vedlitz 2017), and professional organizations (Balla 2011) can all contribute to the diffusion of a program or policy change from one government or agency to another. The influence of policy entrepreneurs in diffusion also pertains to agency heads as they can act as such through their personal involvement and advocacy for or against policies (Mintrom 1997; Mintrom and Vergari 1998; Shock 2013). State bureaucrats, and agency heads in particular, can provide a pathway to diffusion through their influence and expertise. Their choices for contact and information can potentially influence diffusion between entities within the intergovernmental context.

This leads to the broad question of how do public administrators use information? Specifically, from whom or what do state agency heads find information about changes, successes or failures, new policies or programs, or any number of issues within their fields? Does this relate to how frequently they are in contact with these same political actors? Do top level bureaucrats include multiple stakeholders in their “information environment” or are they exclusive and selective in the entities they interact with and seek for information? These central

questions are significant to an understanding of state bureaucracy and the political and social networks of state bureaucrats. While explored in some ways, they have yet to be answered in the existing literature on public administration, political science, or the policy process. Bridging together diffusion, learning, principal-agent, and network theories, this research seeks to fill an empirical gap in the literature by examining who high level administrators interact with, where they seek information from, and how inclusive they are with other stakeholders in their information environments.

Opportunities for Understanding

The initial anecdote related to state and federal environmental agencies highlights the goal of the research presented here: to examine contact with and behaviors of state agency heads across all 50 states in several functional policy areas. This dissertation uses several statistical models to analyze data from an original survey of over 100 state agency heads in four categories. Analysis of this data will address three research questions:

Research Question 1-*Contact*: Who are state agency heads more likely to have contact with in their information environment? How does the frequency of contact of state agency heads with other political actors vary? What individual, agency, or state level variables impact the frequency of an administrator's contact with others in their environment?

Research Question 2-*Information Seeking*: Who are state agency heads more likely to seek out for information in their information environment? How frequently do state administrators seek out information from other political actors relative to their programs and/or policy areas? How does information seeking vary based on individual, agency, or state variations?

Research Question 3-*Inclusiveness*: Do state agency heads vary in their level of inclusiveness in regards to their information environment and information seeking behaviors across policy and program areas throughout the states? How does this vary based on individual, agency, or state variations?

These are important questions for four reasons. First, as addressed at the beginning of this chapter, access equates to perceptions of influence. Greater contact with a state administrator insinuates a greater level of influence in relation to the preferences of the other actor. Second, contact only provides an appearance of influence. Sources of actual program or policy specific information, regardless of contact frequency, could be a better measure of potential impact. Third, the number of frequent information sources is an unstudied question that lends itself to normative possibilities about representative bureaucracy, democracy, and federalism. Last, this study is significant because it adds to the understanding of chief bureaucrats at the state (rather than the federal) level and focuses on a generalizable, business-as-usual environment (not a period of innovation or change).

Knowing where state administrators seek information from and who they include in their information environments is a piece that could influence conceptions of the policy process, the influence of specific policy actors, and the diffusion of governmental innovations. By examining these questions about contact, information seeking, and inclusiveness in a multi-state and multi-agency format, I hope to provide understanding about the flow of information, the importance of various actors across policy arenas, and the role that state administrators perform within their states and policy networks.

The next chapter will explore theories of information, bureaucratic political involvement, and policy diffusion. These work together to form the concept of an information environment wherein state agency heads make choices about contact, information seeking behaviors, and inclusiveness based on internal and external features. Chapter 3 discusses the hypotheses about bureaucratic information environments and the methodology used in carrying out this research.

The results of the data analysis are presented in Chapter 4. The final chapter offers conclusions, potential implications of the finding, and avenues for future research.

CHAPTER TWO: LITERATURE REVIEW

Information is an important resource within the policy process and the larger context of politics and administration in general. Within the parameters of the extant literatures in these areas, there has been substantial attention given to how information may be used, the actors who use it, and how it may influence decision making. The specific use of information by bureaucrats, however, is an area that deserves greater study. Studies have examined specific types of information, such as evidence based practices (Jennings and Hall 2011) or advice (Siciliano 2017), and information use by specific state or local agency heads (Alexander, Lewis, and Considine 2011), but so far there has not been inquiry into the general systematic flow of information to and from state agency heads within the American governmental process. In this chapter, some key areas of research that rely on the use of information as a resource within political processes will be overviewed, and the role and importance of bureaucratic actors within these areas is discussed.

Administrative processes rely on accurate and available information. Policy design, implementation, and evaluation all depend on access to correct and informative data. Unfortunately, no neat, testable theory of bureaucratic involvement, influence, or interaction in regards to information diffusion or transference exists. Instead, there are numerous models that assume varying behaviors, preferences, and influences of bureaucrats. Single-issue or policy-specific research and case studies include administrators as only one actor within different intergovernmental networked relationships. Taken together, these pieces form the foundation for current understandings about bureaucratic involvement and potential influence on information processes and transference.

Several theories in public administration deal with concepts focused on information, information flow, networks, and interactions between political or policy actors and stakeholders. The goal of this section is to bridge these theories together and support the conceptualization of an information environment presented at the end of the chapter. The following pieces of this chapter provide further detail on each of these theories and concepts and then pieces them together to form a theory of Information Environments. These provide the foundation for hypotheses about the information seeking behaviors and contacts between state agency heads and other political players. First, the importance of information in broader theories of policy learning and networks will be discussed. Second, the conceptualization of information asymmetries between bureaucrats, other actors, and institutions in principal-agent theory and bureaucratic discretion is presented. A brief description of literature surrounding the spread of information, specifically diffusion, comes third. And last, a theory of a bureaucratic information environment is explained followed by the main questions and hypotheses addressed by the research in this study.

Information as a Resource

Introduction

As a resource, information can be either utilized or discarded by administrators. All governmental actors have to make decisions about the time they spend seeking, disseminating, and evaluating the plethora of information that is available. Information is the primary vehicle for theories of both policy learning and policy diffusion. Additionally, within their relative spheres of influence, administrators can use information at their discretion in a variety of ways. Principal-agent theory highlights the idea of information asymmetry coupled with bureaucratic

discretion as a key area of power within the bureaucracy. Network literature brings together many of these ideas and relies on both access, contact, and information flow to map out the networks of governance or implementation that exist across the states.

As Sabatier and Jenkins-Smith (1988) say, “one of the most surprising – and distressing – aspects of the literature on knowledge utilization is that it has developed largely independent of the literature in political science on the factors affecting the policy process” (123). Information is a resource within the context of policy making in the same way as money, power, or influence. However, information transference is often grouped into larger studies of policy learning, policy diffusion, bounded rationality, or networked governance. The specific use of information by bureaucrats is an area that has not received significant study. Information spans political, geographical, and ideological barriers. Particularly when discussing the use of information in a political arena, it can be molded, skewed, and framed in a variety of ways to work as a political resource. Also, information coming from different sources can be framed or presented in various ways to support or defend ideas or positions. Pertinent to this study on the information environments of bureaucrats, existing research on policy learning and policy networks form a basis for how information and its flow have been examined.

Separate from research on political science or public administration, research on “information seeking” dates to the beginning of the 20th century concerning the usage of libraries and other information sources by the general public (Wilson 1999). Information behavior in these other fields is identified as a “set of activities a person may engage in when identifying his or her needs for information, searching for information, retrieving information in any way, and transferring and using that information (Wilson 1999, 249). Pertaining specifically to bureaucrats, other research has examined specific information seeking behaviors of

administrators in regards to transport policies (Marsden, et al 2011), evidence based practices (Jennings and Hall 2011), management practices (Jimenez 2017) and advice (Lundin, Oberg, and Josefsson 2015).

Systematic research on learning and information has been on the agenda within political science and public administration for decades. Herbert Simon's (1997) seminal work explored questions related to information, learning, and knowledge transference that resulted in much of the established assumptions about actors in the policy process today. Clear, testable theories have not resulted, however. Our understanding of information and its use and effects is limited to particularized programs and policy areas. Several veins of literature all acknowledge the spread and use of information by particular actors in the policy process as important.

Policy Learning

The area of existing literature that most concerns itself with the flow of information is that of policy learning. Learning can be defined as "the updating of beliefs" (Dunlop and Radaelli 2013, 599) or "lesson-drawing" (Rose 1991) but both of these concepts are acknowledged as difficult to measure. The study of policy learning additionally breaks down into the "types" of learning (individual, group, collective, political, etc.), the phases of learning, the factors that inhibit or foster learning, and the sources of learning (Daviter 2015). What has developed is an overlapping and complimentary literature dominated by corresponding terminology and conceptual understanding so that what does or does not constitute learning is ambiguous and highly dependent on the variables under consideration and the way words are defined and used. Particularly, the terms knowledge, information, and learning are often used

interchangeably without clear delineation in discussions of the policy process and the actors that intersect.

Studies on policy learning typically attempt to prove a cause and effect relationship between new information being received and a subsequent change or application of the information by the policy actor or institution that received the information. Meseguer (2005) suggests that the primary drive behind learning is a search for solutions to problems. This is important to the conceptualization of information seeking and information environments discussed here because it relies on the *choice* of an administrator to search for information from those actors present in his or her environment. However, information can be received and transferred without a deliberate search, without a change in thinking, or without an action taking place. It would be faulty to assume that this means that the information that was received or transmitted is not still an important aspect of the overall process or environment. The learning process can include gathering, processing, and disseminating information as well as looking for alternatives and evaluating them. No readily visible measurement captures these actions. The inability to objectively measure them makes them no less important.

Although the policy learning literature is very good at pointing out the apparent existence of learning processes in policymaking and the possible underlying factors, it falls short of providing a clear answer to the question of how exactly this learning happens. It is impossible to empirically measure when the input of information into an individual's consciousness transfers into true "knowledge." Similarly, it can only be clearly delineated that "learning" has occurred if the suspected learner is asked if such a thing happened or there is a product that displays a change. In one study, local government officials were specifically asked who they "had drawn important lessons" from as one way to capture this process (Lundin, Oberg, and Josefsson 2015).

Learning is thus difficult to measure because of the multiple ways it can be quantified and the need to ask individuals (or groups) if they believe that they learned the information in question from a particular source. Questions of this nature are highly dependent on the particulars of what is being asked, how it is being asked, and the scope of the policy, program, or information that is under inquiry.

A significant body of scholarship has focused on learning under a variety of descriptions: organizational learning, political learning, governmental learning, policy learning, or social learning to just name a few. Simon's (1947) learning theories focused specifically on learning within a governmental context. However, organizational learning is understudied from a public management perspective (Moynihan and Landuyt 2009). The interpersonal, micro aspect has been relatively ignored in favor of institutional and organizational learning. Because of the difficulty in measuring learning in a real world environment, some scholars have called for a focus on knowledge utilization such as how knowledge is used and deployed by political actors to facilitate learning (Dolowitz 2008).

Policy learning theories discuss and point out the role of epistemic communities, networks, subject matter experts, and policy entrepreneurs as agents of change (Bennett and Howlett 1992; Weible and Sabatier 2018). With the ability to influence the policymaking process through information sharing, these actors are viewed as important components in interconnected systems within specific policy or program areas. Integration of all potential actors into one coherent concept removed from single issues parameters does not exist.

Despite an interest and need to understand learning in administrative environments, many conceptual, theoretical, and empirical challenges exist in studying learning among and between different actors, institutions, and settings. In a review of the policy learning literature, Bennett

and Howlett (1992) explain that, “there is no shortage of theorization. Our review suggests that, if anything, the concept [of learning] has been over theorized and under applied” (182). The goal for this research is to step back and examine a formative piece of learning, information, and how it may be being utilized across one group of actors, state agency heads.

Thus, policy learning theory focuses on the information flows between actors in the governmental context. It can and does influence decisions, ideas, and outcomes of the individuals and organizations involved. “Actions occurring within a society are non-independent of one another in a dynamic system that is continually learning from external circumstances and actors” (Butz, Fix, and Mitchel 2015, 354). However, these processes are modeled as linear and static, even though the actual environment and interactions are not. Public administrators, like so many of the often studied individuals or organizations, can “learn” in a variety of ways through information transference and so the flow of information through contacts and behaviors is an important avenue of inquiry.

Policy Networks

Network theories repeatedly use the flow of resources within and between actors and institutions to model processes, linkages, and outcomes. The state of theory and research on networks within public administration however is anything but clear or concise for theory expansion and testing. While research about networking in general is vast, public sector network literature is much more limited and few studies deal specifically with how politicians, bureaucrats, and local leaders network (Walker, Berry, and Avellaneda 2015). Several studies attempting to clarify the state of the literature on networks in public administration have pointed out no less than (and potentially more than) three distinct fields within network research with

different proclivities towards the definition of networks, the goal of networks, the measurement of networks, and even the way networks operate (Alexander, Lewis, and Considine 2011; Klijn 1997; Lecy, Mergel, and Schmitz 2014). The three main veins from one review include: broad policy networks within particular subfields, service delivery and coordination efforts, and the democratic implications of network governance (Alexander, Lewis, and Considine 2011).

Another study grouped network research in public administration as focusing separately on either formation, governance, or implementation (Lecy, Mergel, and Schultz 2014). Within any of these trajectories of research, varying levels of influence and examination are given to structure (design of rules, institutions, who governs, and patterns of interaction), management (managing whole network, differing functions), and behavior (external behaviors, such as established ties and communication).

One definition of policy networks as “a group of actors who share an interest in some policy area and who are linked by their direct and indirect contacts with one another” (Mintrom and Vergari 1998, 128), is an ideal way to think about networks in relation to the questions to be examined in this study. These contacts or ties can facilitate change based on how strong or weak they are (Granovetter 1973). This disregards the differentiation between the “streams” of network theory that other scholars note. The existence of symbiotic relationships between bureaucrats, agencies, actors, interest groups, and non-governmental or inter-governmental organizations and individuals are easy to visualize and understand. All network studies address the sharing and use of information (as well as interaction among members of the network) to map out networks and levels of influence within networked governance or implementation (Siciliano 2017).

Public administration network research focuses on intergovernmental arrangements and how areas or levels work together outside of structured institutional arrangements. Similar relationships can be hypothesized to exist outside of formal or informal networks but have had far less empirical study. Research has remained issue or policy specific for networks and collaborations at the state and local levels in the use of resources, the diffusion of policies, and the implementation of particular programs or changes (Jones and Baumgartner 2005). Continued research on the subsystems that develop around specific policy or program areas has suggested a large and variable group of actors which can be involved in any arena (Hale 2010; Nicholson-Crotty 2005) that can change over time (Sabatier 1988).

This research focuses on the links between bureaucrats and other actors such as those found in the network literature. Interest groups, the media, policy entrepreneurs, and many others have been identified as having important links to politicians and bureaucrats as part of the niches, subsystems, or coalitions that surround any particular policy area. For example, peer administrators in other areas (Alexander, Lewis, and Considine 2011), professional associations (Balla 2001), legislative interactions through oversight (Clinton , Lewis, and Selin 2014), and involvement in professional associations (Teodoro 2009) have all been shown to influence information sharing and the diffusion of policies at the administrative (bureaucratic) level.

The members of a given network have been shown to influence governance and policy priorities. In looking at health care reform, Peterson (1993) concluded that changes in bureaucratic structures mattered less than the increased involvement policy of stakeholders. Changes resulted from the issue environment and not the institutions. Mintrom and Vergari (1998) found that greater involvement in policy networks increased the likelihood of achieving legislative goals. The network literature thus explains that administrators are interacting and that

resources such as information provide different participants with power. Policy issues faced by agency heads are increasingly complex. Public administrators, as experts in their fields, have direct access and routinely interact with policy stakeholders to transfer or collect information. The use of network analysis has aided in understanding and analyzing the complex decision processes that unfold.

Most of the research in network analysis uses groups as the unit of analysis instead of individuals. Individuals are important but seen as a means to an end, not the central unit of observation. But there is an “underlying idea that organizational learning occurs through dialogue and interaction among individuals” (Siciliano 2017,105) that often goes unreported and understudied. Borgatti and Cross (2003) developed a model of information seeking and learning in networks to better understand the relational characteristics that influence who seeks advices from whom and determined that accessibility and perceived information costs were the most important factors in determining where it was sought.

Certain actors within a policy network develop reputations wherein those deemed trustworthy and reliable are better be able to advance innovation in their area (Mintrom and Vergari 1998). In this way, all actors or institutions are not created equal within networks. A dynamic interdependence between policy actors – citizens, elites, decision makers, interest groups, local/state/federal elected officials and agencies – functions within the states, and some are viewed by others differently because of resources and reliability. Work in network analysis does focus specifically on the individual (and his or her opinions and behaviors) as a unit of analysis, but organizations and solitary actors are typically used to map interactions and influence within a network (for examples see Jimenez 2017; Maroulis 2017; or Siciliano 2017).

An individual focus inside of networks requires a different type of analysis than what formal network modeling allows.

Policy network theories hinge on the interdependence of different actors involved in a policy or program arena. Information transference (and learning) can occur outside the connections looked for in networked arrangements, however. Individuals or organization can facilitate the movement of a resource (such as information) to or from another actor without a readily visible networked arrangement. This can occur outside the mathematical quantifying of concepts such as frequency, directness, and centrality that situate actors in network analysis. Potential policy actors, including bureaucrats, are the nexus of their own personal network or environment. How they transmit and receive information from their node then leads to the main research questions presented here. One study examining bureaucrats networking with politicians found that,

These results show clearly that interaction patterns with both internal and external actors vary widely according to place and according to political or bureaucratic function and seniority. That is, who you talk to and how often, is heavily influenced by the government you work for, whether you perform a political or bureaucratic role, and how far up the ladder you sit. (Alexander, Lewis, and Considine 2011, 1287)

Within a given area there may be an excess or lack of interested parties beyond the traditional enacting politicians, implementing bureaucrats, and constituents receiving services. At the federal level, there is an established literature on how federal agencies differ in this manner (Wilson 1989). The who and what of influential or informative interest groups, think tanks, lobby groups, and policy entrepreneurs have interested political scientists for decades, starting with Hecló's (1978) elucidation of federal level iron triangles. At the state level, this interest has expanded as repeated studies have focused on the importance of information and intergovernmental actors across particular policy areas (Krause and Woods 2017). While theories

about networks and the policy process address these relationships, a uniform understanding of simple information flow and behaviors has not developed because of the complexities and dynamics of these relationships.

Networking allows managers to access information, institutional capacity, political or community support, and financial resources (Agranoff 2006; Meier and O'Toole 2001). Network analysis focuses on structure, implementation, or governance. While the concepts surrounding this body of literature inform this research, the goal is not a network analysis of state bureaucracies. Instead, the conceptualization of networks informs the theory presented here regarding an information environment. While a network is defined or outlined by the ties between different actors or institutions, the environment (as opposed to the network) includes all of the possibilities for "ties" to the state agency head, not just the ones used for particular programs or policies. Network actors are only one potential part of an information environment. The linkages of contact frequency and information sharing that can occur within networks provide part of the foundation for the questions pursued in this study.

Agency heads are just one type of actor who play many roles in the policy process. The marginalization of parameters in network analysis ignores the multi-faceted roles they perform in many (not just one) program or policy area. Specifically, agency heads can be thought of as belonging to multiple issue networks that cannot be understood when studying only a particular piece of information, implementation, diffusion, or adoption.

Information Asymmetry between Actors and Institutions

Principal-Agent Theory

A main question in the study of public bureaucracy and agency administration is the relationship between political authorities and bureaucrats. Typically viewed from a principal-agent standpoint, the question normally posed is one of control. Bureaucratic expertise and knowledge (or for the purposes of this paper, information) results in information asymmetries that elected principals must overcome as they seek to control administrators and programs or policy outcomes. Thus the existing literature typically focuses on methods for control of bureaucracy (for a review see Moe 2012).

Principal-agent theory poses a conflict of values and information asymmetry between elected principals and the bureaucratic agents who work for them. Principals have two problems in choosing appropriate incentives for the agent: adverse selection (they choose the wrong agent) or moral hazard (the agent does not act appropriately). Both problems can result in the agent “shirking” in the performance of his or her duties.

Authorities institute rules, incentives, and monitoring mechanisms to keep bureaucrats in line (McCubbins and Schwartz 1984; Weingast 1984). However, they are relied upon to provide accurate information on the success or failure of programs and the needed allocations to deliver services. This line of reasoning thus leads to the idea that information problems are central to understanding political control and influence; information is a key source of bureaucratic power within these institutionalized relationships. Bureaucratic information sources then become a central focus in understanding these concepts of power and control. State agency heads could seek or disseminate information in strategic ways to support already held positions, use information from other sources to persuade other political actors, or even withhold information

for a number of reasons. Bureaucracies have multiple principals within the political processes of their state (governor, legislators) as well as multiple constituencies that they serve (the general public, clientele, industry). Therefore, based on their priorities and how they perceive other actors in the process, they will accept and disseminate information based on any number of variables.

Moe (2006) suggests that in addition to information as a source of power, bureaucrats have a second power through political action. He argues a case for the political power of the agent as an addition and reorientation to principal-agent theories. His study specifically addressed how bureaucrats can join together through organizations to effect political outcomes that choose the principals they favor. Expanding upon this concept, bureaucrats can join together to affect political outcomes through including or excluding individuals, institutions, or information sources from participating in the environment surrounding a given policy area. The strategic use of information to and from other political actors is another source of power beyond those already identified in the bureaucratic principal-agent constructs.

Moe (2006, 2012) points out that there are major problems with principal-agent theory applied to public administration. Politicians' goals are not efficiency or effectiveness. Politicians are constrained in designing methods of control. Some bureaus are less controllable because of the power of the constituencies they serve. Multiple tiers and competing principals make accountability a problem. Information is uneven and not shared uniformly or completely. Actors within the policy environment and policy process have information they can use for power, control, or influence. Administrators, specifically, are viewed as having power through their expertise and information power (May, Koski, and Stramp 2016). Access to individuals and information influences decision making throughout the policy process. Thus, the relationship

between bureaucrats and other actors concerning access and information is important to understanding the individual level decision making that occurs within the larger context of governance in the states.

From a normative standpoint, it seems that some are ill at ease with considering agency heads, or administrators in general, as political actors able to be influenced in their decision making (Montjoy and Watson 1995; Wilson 1887). But even the seminal public administration literature did not agree on the appropriate level of involvement by bureaucrats in political questions. Agency administrators make decisions however, and within that ability, have the power to influence regardless of a normative opinion on the level of appropriate involvement.

Bureaucratic Discretion

Since Woodrow Wilson's (1887) influential piece on the proper role of administration versus politics, there has been substantial research into how this role manifests itself for bureaucrats between neutral competence towards carrying out laws versus advancing personal or political agendas. According to some, "administrators must be political actors to accomplish their operational policy goals (Bowling and Wright 1998, 439). But, the bureaucracy has been studied significantly less than other political actors such as governors, legislators, and interest groups for its overall influence on structures, processes, and outcomes of governance. This could be as Moe points out because "bureaucracy did not provide scholars with raw materials that were readily quantified" (2012, 1). Because of this, the ability to move beyond simply theorizing or case study inquiry has limited the understanding of bureaucratic influence in the larger policy process to mostly studies of implementation and bureaucratic discretion. Discretion is important because

From street-level bureaucrats who must make decisions about the direct provision of services, to administrators within agencies who must translate vague legislative

mandates into organizational procedures, discretion is often a crucial part of public administrators' job description. (Sowa and Selden 2003, 700)

The literature that focuses on bureaucratic discretion and responses to political principals tends to compartmentalize and focus on the interaction of certain actors independent of others.

Bureaucratic responses to political principals form a large piece of this literature (Terman 2015; Wood and Waterman 1991). Levels of discretion have been examined for variations in programmatic outputs (Volden 2006). Additionally, measures of discretion are varied and quantified through a variety of means such as budget shifts, statutory changes, rule making, and appointments (Schneider and Jacoby 1996).

State administrators are considered experts in their fields, typically have many years of experience in their policy area, and have broad discretionary powers. Because of this specialized knowledge and state level influence, their policy specific information is important for other actors within their policy networks. The assumed information asymmetries of principal-agent theory provide administrators with information power, as well as discretion for personal preferences in seeking, using, or disseminating information. Legislatures give bureaucrats varying levels of discretion based on needs and tolerance for "bureaucratic drift" (Huber and Shipan 2002).

Through their discretion towards direct involvement, choices, dissent, or interpretation, public administrators are shapers of policy (Bingham and O'Leary 2008; Kingdon 1984; Weible and Sabatier 2018). Bureaucrats have discretionary power in implementing policy or program goals that have been set by elected (political) principals. In addition to the accepted information expertise assumed in principal-agent theories, this formal discretionary power allows leeway in decision-making and implementation capacity. Theories surrounding discretion can be applied to questions of information flow as well. State agency heads will exercise discretion in who they

seek information from and who they pass on information to. This information advantage is another possible source of power for bureaucrats.

From the existing literature then it can be concluded that much is to be learned from examining how information is transmitted to state agency heads, specifically in who they seek information from and how inclusive they are in the number of information sources they seek. There is potential to shed light on processes of policy learning and state level diffusion as well as insight into information asymmetries discussed within principal-agent models and the use of discretion by bureaucrats. Consistent patterns of information gathering and transmission based on state, agency, or individual traits can provide insight into the political actors who have influence on the policy process through the dissemination of information.

The Spread of Information – Policy Diffusion

Theories of policy diffusion in state politics research rely on a practical application of policy learning. From the earliest studies on diffusion (Gray 1973; Walker 1969) to the more current and comprehensive compilations (Desmaris, Harden, and Boehmke 2015), the process of identifying precise sources of knowledge about a policy, program, or idea have been noted and traced through state institutions. Research in this area has focused almost exclusively on single policies (or the compilation of particular types of policies) and some sort of action, such as legislative adoption, to mark information transference about the identified policy or program. Other studies have applied the same methodological techniques to adoption at the administrative level (Parinandi 2013) as well as to non-adoption or negative diffusion (Volden 2016) to examine the spread of information. These studies disregard *how* knowledge was acquired and

instead theorize on possible reasons as to *why* a policy was chosen for implementation, consideration, or abandonment.

Learning and networks provide the basis for all these theories of diffusion, however. The arrangements and interactions of different actors are the central links in studies of diffusion. Information has to be acquired by new actors in the policy process for programs or policies to spread. Political decision-makers are faced with problems or opportunities and must make decisions about the policies to implement in response. Before this stage, they have to make choices about information seeking, the value of information, and potential information distribution. Considering the solutions that have been implemented by other governmental entities is a rational course of action. Brand new policies/programs are rare events; innovations result from knowledge acquired by someone in the political system about courses of action being taken elsewhere.

The ever-growing literature on policy diffusion uses the flow of information as a central piece of its theory-building. Berry and Berry (1999) define diffusion as “the process by which an innovation is communicated through certain channels over time among members of a social system” (171). Boushey (2012) defines public policy diffusion as “the formal study of how ideas move from one jurisdiction to the next in political systems” (127). Pivotal to both these definitions are pieces central to the research questions in this study. Who (or what and how many) interacts with who (or what and how many) and transfers information in the process?

Four main causal theories about horizontal diffusion have developed (Shipan and Volden 2008) and each focuses on information flow with mitigating factors based on the importance and type of information. These form the basis for most of the competing theories of policy diffusion. First, similar size, demographics, or economic and political structures may be one cause for

others to seek information due to similar problems that may be faced (Gray 2013; Volden 2006). Second, geographic neighbors have long been a popular explanation for information sharing (Berry and Berry 1990; Shipan and Volden 2008; Walker 1969). Geographic proximity may be a proxy for similarity (Grossbeck, Nicholson-Crotty, and Peterson 2004), however, and not a product of closeness. Third, power actors provide information to state entities, particularly state actors from larger, wealthier, states or ones that have more clout or capacity (Volden 2006; Walker 1969). Policy entrepreneurs have been shown to be influential in the spread of information (Mintrom 1997; Mintrom and Norman 2009; Shock 2013) as well as interest groups (Sorge 2015) and professional associations (Balla 2011). Last, a more recent development in the diffusion literature has explored the idea that success itself creates a vacuum for more information about a program, policy, or change (Lundin, Oberg, and Jofesson 2015; Volden 2006). Each of these causal explanations can be traced to other political actors from which information about a policy or program originates.

In addition to diffusion between the states, the transfer of policies, programs, changes, or innovations has also been shown to occur in both vertical and multidirectional channels. Pressure to conform to national pressures plays a role in top-down diffusion processes (Berry and Berry 2007). Federal mandates or incentives can provide the impetus for top-down diffusion (Baumgartner and Jones 1993). Additionally, national linking organizations facilitate the dissemination of information to foster diffusion (Hale 2010). These federal or national actors have consistently been found to be instrumental in moving information between the states to promote adoption of particular policies or programs.

Polydiffusion is through both vertical and horizontal channels (Mossberger 2000). Highlighting the multi-faceted nature of diffusion, Mossberger and Hale (2002) describe

polydiffusion as separate from simple horizontal or vertical diffusion. It instead focuses on the “multiple channels of information that subnational administrators and policymakers have within information networks” referring to the competing and complimenting horizontal, vertical, and extra-governmental actors that can be part of the process. Diffusion has been shown to operate in a bottom-up fashion as well. (Pacheco 2012; Shipan and Volden 2006).

Analysis of bureaucrats in the diffusion literature has up to this point focused on bureaucratic influence within particularized policy areas – whether agency adoption differs from legislative adoption with strategic planning (Berry 1994), whether increased discretion enhances diffusion with AFDC (Parinandi 2013), or whether policies viewed as successful in other states are adopted by other agencies or legislatures (Volden 2006). In one example, administrators in state CHIP programs were found to communicate with one another through multiple channels but administrators in different states had conflicting views on the states they looked to (if at all); some looked at neighbors and others across the nation (Volden 2006). This suggests that legislators, executives, and administrators alike rely on success when choosing which policies to emulate but that states would also be likely to mirror geographic neighbors in addition to states with political, demographic, and budgetary characteristics similar to their own. Interaction among members of these policy communities (or networks) are important to understanding information transference generally and not just policy diffusion.

Bureaucrats are present for *every* part of the policy process. Their influence is not limited to adoption and implementation. They extend across time, space, processes, policies, and innovations. Through political and election cycles, state administrators continue to run their agencies and make decisions. Outside of these processes, bureaucrats are also influenced by policy choices of bureaucrats in other states (Parinandi 2013; Teodoro 2009; Volden 2006).

The important component of policy diffusion research concerning information and state agency heads is the highlighting of how information flowing through different channels has measureable consequences and results. Diffusion studies focus on particularized pieces of policy transferring from one entity to another. Through this, valuable information has been learned about potential causes of the spread of ideas and information. For example, some of the actors or arrangements responsible for information and resulting innovation include professional associations (Balla 2001), neighboring states and ideology (Boehmke 2009), privatization (Bouche and Volden 2011), advocacy groups (Hale 2010) legislative professionalism (Shipan and Volden 2008), policy entrepreneurs (David 2015; Mintrom 1997; Shock 2013), the media (Easterly 2015), and state demographics (Boehmke and Witmer 2004; Butz, Fix, and Mitchell 2015). But what happens when no new policy, program, or initiative is being championed? How do these interactions and influences play out in a “business as usual” environment? That is the basis and major contribution of the concept of an information environment and the importance of state agency heads. Information changes hands and decisions are made on a consistent, daily basis *outside* of the spread of innovations and measurable patterns of diffusion.

A Theory of Information Environments

Taken together, these literatures on information, networks, and the bureaucracy lay the groundwork for this research on how bureaucrats interact with other actors within the larger context of their information environment. Prior work on the policy process particularly has noted that bureaucrats play a central role in defining problems, proposing solutions, implementation, advocating change, and continuation of the status quo (Kingdon 1984; Weible and Sabatier 2018). By having “information power,” the agency has “agenda power” across policy processes in varying ways (Moe 2012).

Information environments exist within the day to day. They are a constant environment surrounding an agency head that are not driven by innovations or changes that are used to trace networks or diffusion processes. It does not land in a policy stream. It is not about change. It is not an issue network that ebbs and flows with issue importance on the agenda. While the actors are identifiable in the policy process, this environment is present regardless of where something is within the conceptualized stages. It is there for every part of the policy process. It extends across time, even if some actors are activated or not. In the day-to-day routine of an administrator, these are all the possible information sources and points of access. It allows for the appearance of contradictions when actors are influential at different stages or with one policy within an area but not another. Networks and advocacy coalition networks allow entities to leave the formation or structure, but the idea of an information environment is constant. Even if an administrator does not choose to use a source of contact or information, it is still there for them to utilize if they decided to.

This combines with growing literature advocating for more research on the role of public managers in the policy process (Hicklin and Godwin 2009; Meier and O'Toole 2006). Using administrators across the states, as opposed to federal administrators, allows for a more comparative study. Variations among the American states allow researchers to better understand how a wide range of political attributes and characteristics can influence outcomes. The amount and extent of interested political actors surrounding any policy area varies. How then does this variation influence the actors that a state administrator interacts with?

Ongoing debate centers around who agencies or programs are most responsive to at the national, state, and local levels particularly within the policy process, policy diffusion, and principal-agent relationships. Research has found important links between bureaucrats and other

actors such as interest groups (Allen 2005; Kelleher and Yackee 2008), legislators (Huber and Shipan 2002), and the media (Moynihan and Pandey 2004) as part of the niches, networks, subsystems, or coalitions surrounding any particular area. Influence over policy priorities could be attributed to political leaders (executives and legislatures), the federal government, interest groups, the agency itself, or any number of other external actors. No two agencies exist within the exact same political context. Agencies vary not only in their functions but also in their level of resources, discretion, federal involvement, salience, and scope. External actor influence has been found to vary systematically by agency type (Brudney and Hebert 1987); and the agency specific level of inquiry that is prevalent in research designs of this type reinforces this idea.

As the implementation arm of the government in each state, public agencies serve a vital function in carrying out governmental services. Because of their nexus between the public and the politicians, many theories about the levels of influence of other actors on the bureaucracy have developed (Miller 2005; Moe 2012). Theoretical frameworks to explain influence and control vary across time (historical, cross-sectional, longitudinal), and across policy areas. Specifically, most research looks at the most influential actor(s) in very narrow policy areas or programs. The analysis presented here seeks to expand on this by examining the possible interactions of different actors, state environments, federal aid, agency type, and individual administrators across all 50 states.

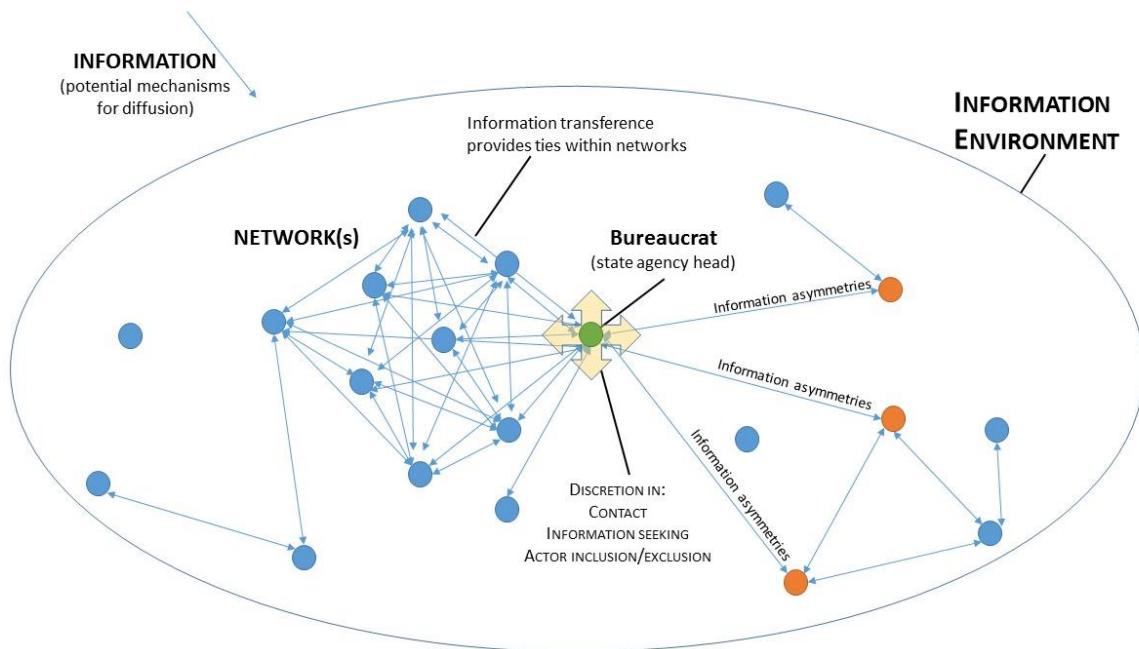
Jones and Baumgartner (2005) describe how the environment of policy making is actually information-rich as opposed to information-poor. Because of this,

...prioritizing in information-rich environments requires winnowing... When there is lots of information available, we need to find ways to plow through all the signals bombarding us, decide what is relevant and what is not, and estimate the quality of the information. (10)

The question thus becomes of whose information is most trusted, valued, or influential. What choices do administrators make about the information they need? What affects those choices?

Figure 1 presents a conceptual drawing of how the different theories of literature described previously relate to each other within the larger context of this research design. Information exists as a resource within the policy process and it is 1) a vehicle for learning and 2) a potential mechanism for diffusion, information transference (represented by arrows), or influence. The *information environment* is thus represented by the circle that surrounds all of the actors, whether part of a network, principal-agent relationship, or not. Each specific theory and potential actor is included to show how the concept of an *information environment* moves understanding from narrow, specific relationships or policy areas to general understanding of all the potential sources that could be included or excluded by an agency administrator within their day-to-day choices or behaviors.

FIGURE 1
CONCEPT MAP OF THEORIES RELATING TO INFORMATION ENVIRONMENTS

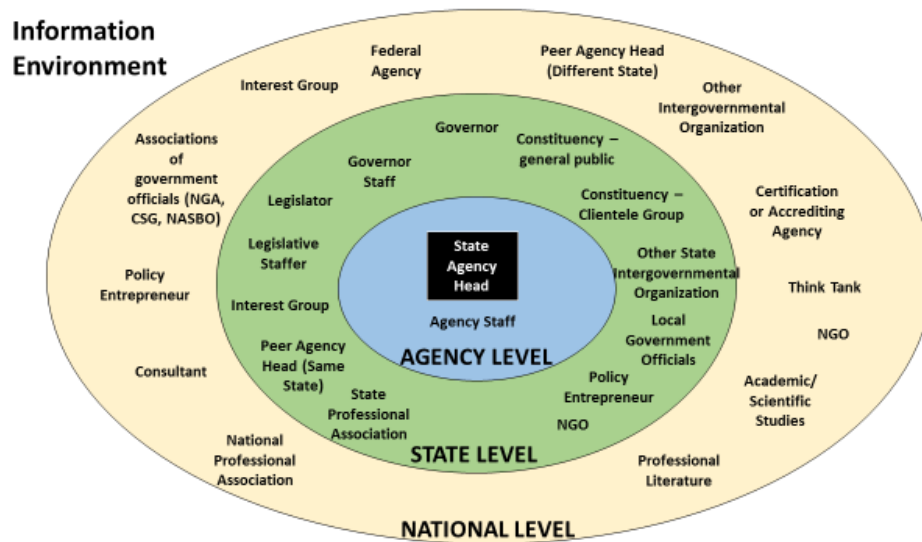


The theory that results from the previous discussion about information, networks, principal-agent theory, bureaucratic discretion, and diffusion is one concerned with bureaucratic centrality within information networks. A comprehensive way of thinking about this is as an environment in which state agencies and their administrators operate as depicted in Figure 1. In this environment, information is available as a resource from outside actors and institutions. All the various political actors can be conceptualized as operating within agency, state, or national spheres. These spheres have characteristics that determine how often they interact and seek information within the larger context of the policy process. With state administrators at the center, an information environment surrounds constantly across time, space, issues, and agencies. As Walker (1969) stated (specifically referring to processes of diffusion), “In order to develop explanations of these processes we must go beyond the search for demographic correlates...and develop generalizations that refer to the behavior of the men who actually make the choices in which we are interested” (887).

Instead of examining any of the pieces individually or as part of only one particular area, combining them all and thinking of everything inside of the circle in Figure 1 as an information environment leads to a different way of visualizing the available resources within the environment as well as potential actions and nonactions. Within one functional category there can be several networks as well as interested groups or political principals. This leads to Figure 2 which removes the theoretical relationships from Figure 1 and focuses on the environment as a whole with actors operating at differing primary spheres of policy priority. Moving from the specific mechanisms of Figure 1 that have previously been identified to a general environment of information in Figure 2. State agency heads are placed at the central point on the environment with all possible actors represented in the spheres surrounding them. Figure 2 shows this simple

arrangement based on traditional jurisdictional spheres instead of theoretical relationships. This theory also allows for future research that focuses on different actors and their roles within the environment.

FIGURE 2
INFORMATION ENVIRONMENT



Focusing on the system level, Workman, Jones, and Jochim (2009) describe two key fundamentals of information processing theory: prioritization and supply. Prioritization refers to the way policymakers sift through competing “streams” for information. Likewise, the supply of information and how it changes is also integral to understanding information processing at both the individual and organizational level. They purport that the two processes should be examined separately because of the different dynamics within each. However, a theory of information environments combines both prioritization and supply together by conceiving of the policy space within all the information streams as equally accessible. An individual, here a state agency head,

prioritizes through the decision to use (in this case seek or include) information from certain actors and not others.

At the agency level, the state agency administrator has his or her personal staff as a point of contact or information. Moving up one level, the number of potential actors increase with the addition of state level policy actors, those assumed to be important or integral to the administration of state agencies. These include the governor, the governor's staff, legislators, legislative staffers, the heads of other state agencies, state professional associations, non-governmental organizations, state level policy entrepreneurs, state interest groups, local government officials, state level intergovernmental organizations, the general public, and clientele groups.

At the state level, control and oversight over state agencies by the executive or legislative branches varies both across time and by state (Brudney, Bowling, and Wright 2010; Dometrius, et al 2013). For instance, the two dominant parties in the American political system have differing philosophies, policy priorities, and constituent electorate groups. The difference in party can also be felt through the pressures of citizens, clientele, or constituent groups. This suggests that different levels of influence and thus interaction will be seen across states and agencies by both established political principals and other actors. The increasing nature of party polarization creates disagreement about policy implementation in any area. The level of competition between these different interests may allow for more actors to participate and provide information in given areas or states as agencies bridge the gap from ideology to implementation. However, research has shown that the branches can have idiosyncratic effects, particularly on budgetary resources (Dometrius and Wright 2010). Information and access, as additional resources of administrators, may experience this as well. State or federal conditions

beyond party identification may then explain variation in the utilization of the information environment by state agency heads.

Governors are held responsible for the success or failure of state agencies. Through their power to appoint agency heads, reorganize, and make budgetary recommendations, they can exert significant influence (Dometrius and Wright 2010). Governors are viewed as the chief executive for state agencies and thus have a popular mandate to direct state agency heads in priorities and goal setting. Increasing levels of professionalism within state legislatures (McNeal et al. 2003), the prevalence of federal directives (Terman 2015b), and the prominence of interest groups or professional associations (Boushey and McGrath 2017) can limit the level of gubernatorial power or influence, however.

State legislatures can create state agencies, provide regulation and statutory directives, authorize expenditures, and establish or abolish programs and policies. The ideological disposition of the legislature can affect their directives to agencies (Meagher and Vander Wielen 2012). Given the increasingly complex and interconnected political environment agencies operate within, the role of the legislature in directly influencing policy priorities may be diminished. The level of contact with state administrators may then vary greatly based on certain characteristics.

Federal assistance to the states is an important component to any discussion about state agencies. Federal dollars are rarely, if ever, given with no intent of influencing policy direction or priority (Nicholson-Crotty 2004; Terman 2015b). Information asymmetries, resources (monetary and otherwise), discretion, and goals are all influenced by the presence and prevalence of federal funds within an agency (Terman 2015a). Specifically, federal matching rates have shown to have strong, positive influences on service expansion (Schneider and Jacoby 1996).

Political affiliation exhibits less of an influence when there is increased overlapping control (Gerber and Hopkins 2011). Because federal aid creates strings and may make it more difficult for states to set their own priorities for administration, the receipt of federal funding may influence the amount of contact that an administrator has with actors in the information environment. Contact frequency and information content may be different for agencies who have an additional political principal, the federal government, to report to.

State agencies have close ties with interest groups that they represent, regulate, or provide services to. Questions of agency capture or cooptation have recognized the importance that these outside groups have on bureaucrats (Kaufman 2006). The presence of interest groups has shown to directly impact policy in many specific areas such as Medicaid, the EPA, or education to name a few (Baumgartner and Jones 2009; Schneider and Jacoby 1996). Professional associations and policy entrepreneurs can also play a role in changing the focus of state agencies (Balla 2001; Mintrom 1997). The environment any agency operates within contains many actors both internal and external to the political and policy processes that could potentially impact the prioritizing of public goals.

Increasing the scope once again, the issue environment of any agency head naturally expands to include actors on the national stage involved in their functional policy areas. This now includes federal agencies, national interest groups, national associations of government officials, national policy entrepreneurs, consultants, think tanks, academic and scientific studies, professional literatures, national professional associations, certification or accrediting bodies, national non-governmental organizations, other national intergovernmental organizations, and peer agency heads within different states.

Figure 2 provides a visual depiction of the various individuals and organizations that any agency administrator may have contact with, seek out for information, or include as a frequent information source. What then may impact the choices an administrator makes in utilizing his or her information environment? The guiding research questions focus on three main areas to examine a state administrator's use of the information environment:

RQ1 Contact: Who are state agency heads more likely to have contact with in their information environments? How does the frequency of contact of state agency heads with other political actors vary? What individual, agency, or state level variables impact the frequency of an administrators contact with others within their environment?

RQ2 Information Seeking: Who are state agency heads more likely to seek out information from in their information environment? How frequently do state administrators seek out information from other political actors relative to their programs and/or policy areas? How does information seeking vary based on individual, agency, or state variations?

RQ3 Inclusiveness: Do state agency heads vary in their levels of inclusivity in regards to their information environments and information-seeking behaviors across policy and program areas throughout the states? How does this vary based on individual, agency, or state variations?

These questions are an important contribution to the existing body of literature about information and the bureaucracy. Information is an important resource in today's political context. State administrators have choices about where to get it and what to do with it. Understanding what choices are made and why they are made is a valuable insight into how things may get accomplished (or not accomplished) within the larger scope of the policy process. Similarly, this research can lead to discussions of the role various actors in the governance process.

Variations in Information Environments

The literature surrounding state politics assumes that the states are different. Public administration research likewise supposes fundamental variations between types of agencies. Because of this, studies attempt to draw comparisons (and contrasts) to understand the variances that play out across states, programs, and policies. From the guiding research questions outlined above, several hypotheses are drawn about the information environment of state agency heads and the factors that will influence differences in behaviors and interactions. Three main areas are suggested to potentially explain the variations in activity within the information environment: individual levels of exposure to actors external to the agency, agency capacity, and the presence of competing interests within an administrator's state.

Agency activities and environments are categorized innumerably across decades of research on public administration. They can be based on the types of policies they implement, the clientele they serve, the nature of the political environment, or any number of other variables that enable comparison, contrast, and categorization. Any conceptualization for a typology highlights how the environment, activated actors, and actions surrounding an administrator may vary. However, no clear categorization applies uniformly and is useable for empirical testing or application when discussing the environment of information generally instead of within narrow policy domains. Actors, policies, and classifications may differ in ways that lead to different behaviors, but the environment is constant. Information sources are still present whether they are used or not.

Agencies of differing functional categories will be used for this study based on policy area. These functional categories have been used in the American State Administrators Project since 1964 to examine variation across administrators and types of agencies. Coding for these

categories comes from the Council of State Governments' classification. General functional areas allow for the existence of multiple types of policies and programs that an agency deals with as well as intra-agency variations in outputs, outcomes, and involved actors. For this research, state administrators in four categories: economic development, education, environment/energy, and income security/social services, will be used to see what differences, if any, exist.

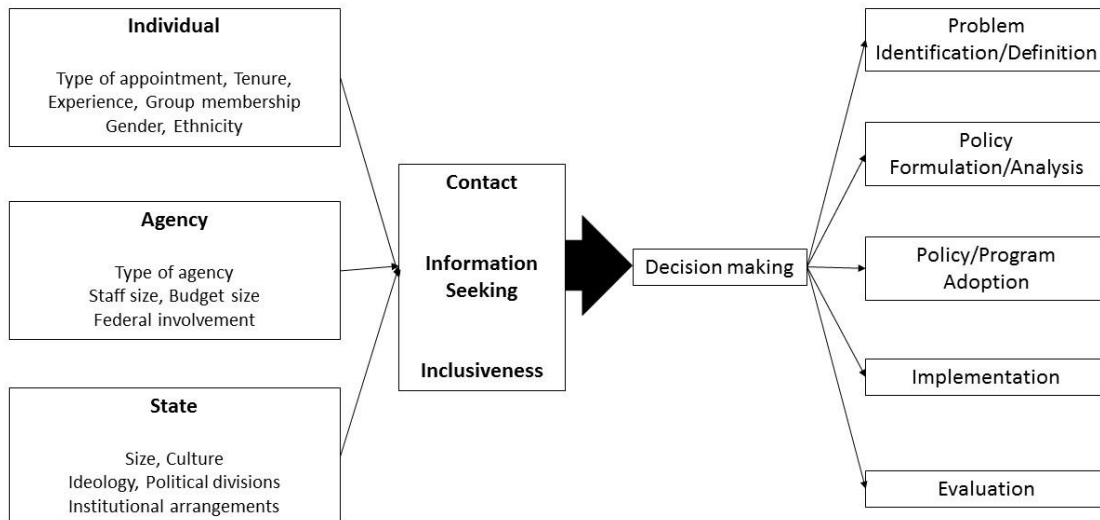
In addition to the type of agency, several other factors could influence an agency head's interactions with their information environment. Everything has an information environment. Actors may be different. Policies may be different. Specialities may be different. The information environment is the same. The potential contacts and sources of information do not change even if not utilized. Figure 3 depicts how administrators will vary in their personal characteristics and experiences, the level of capacity of their agencies, and the context of the state environment. Each of these factors have the potential to impact the utilization of various actors in the information environment, which influences decision making and knowledge utilization as the administrator participates across any of the phases of the policy process.

State level political variables are imperative to understanding any type of policy arena within the American governmental context. While it is often cited that there are fifty different environments, states can often be as similar as they are different. State level variables such as divided government, legislative professionalism, interest group influence, policy liberalism, and political culture may all have an impact on an agency head's information environment.

The various distinctions between the states, agencies, and personal experiences will be examined in respect to the impact on frequency of *contact*, frequency of *information seeking*, and *inclusiveness* of multiple information sources. The end result will be to observe what state level indicators affect an administrators' interactions and information flow and which do not. Based

on those that do, comparisons can be drawn between states and administrators possessing the same variables. Figure 3 below details the flow and potential effect of the variables, activities, and potential results detailed so far. Variations in *contact*, *information-seeking*, and *inclusiveness* within the information environment are hypothesized to result from explanatory variables within the influences detailed on the left side of Figure 3. These can impact the way an administrator uses the information environment. The use of the information environment through either contact or information seeking affect the information and priorities of administrators as they make decisions within their day-to-day, business-as-usual capacity within any stage, stream, or step of the policy process.

**FIGURE 3
INDIVIDUAL MODEL OF POTENTIAL INFLUENCES ON CHOICES
IN THE INFORMATION ENVIRONMENT**



Bureaucratic involvement in the policy process, especially at the federal level, is well-documented (Miller 1992; Wilson 1989). Simon (1997) argued that decision making should be central to public administration, and this study examines factors that could influence the decision of state administrators to seek out information and who to seek it from. That information can then influence further decision making processes.

Outside of the spread of an innovation or activity within a network, state administrators make decisions that can influence any stage of the policy process every day. They have expertise within their areas that they choose to utilize (or not) within their routine activities. Having *contact* with actors in the information environment can provide them with information, opinions, or examples that will influence decision making. Similarly, choosing to personally *seek information* from outside the agency and the number of actors that are included provide supporting or dissenting information that can influence the choices made and information shared throughout the policy process.

Administrative Decision Making Influences

Based on the various characteristics, several hypotheses are developed based on the potential impacts on *inclusiveness*, frequency of *information seeking*, and frequency of *contact* within a state agency head's information environment. Contact frequency is an activity that can be initiated by either the agency head or one of the actors in the environment. Information seeking is the active choice of an administrator to use time in personally gathering information from a source external to the agency. The term inclusive holds no normative value here but refers to the inclusion of more actors which the agency head consults for information.

State administrators will vary in the scope of their contacts with, information seeking from, and inclusion of outside actors. Individual characteristics that increase exposure to other actors through longer tenure, involvement in outside organizations, or work experience outside of government could increase any of the three measures. Staff size and budgetary resources will vary the capacity of an organization to pursue goals. An administrator working in an agency with more capacity is hypothesized to have more contacts, incidents of information seeking, and inclusion of actors because of the availability of slack resources that would allow for more choices in how to divvy up time. When the political climate of a state includes dominant competing interests, pressure is placed on administrators to appease multiple principals that have divergent viewpoints. Federal funding, divided government, and legislative professionalism are all examples of factors that could potentially increase an agency head's actions towards information seeking and inclusiveness in the information environment because of competing interests.

Previous personal research in this area has shown considerable variability in how often state agency heads from different types of agencies have contact with certain actors in their information environment (Hardwick 2014). For instance, administrators of education agencies have significant increased contact with legislators and legislative staffers while those within environmental agencies frequently contact personnel in other state agencies. Regulatory administrators are more likely to have frequent contact with the governor and gubernatorial staff while those involved in criminal justice interact with citizens and clientele groups. Knowing that these differences exist then, this research is the next step in determining the who and how of these variations in interactions.

Administrator, agency, and state characteristics could explain the actions within an agency head's information environment toward frequency of *contact*, *information seeking*, and *inclusiveness*. Although outside the scope of this study, this information could then be used to address questions of political participation, governance, and outcomes across the states in various policy areas.

Research Questions and Hypotheses

Although the main research questions have been presented already, they are presented again here with the follow-up hypothesis based on the variables of interest for modeling information environments and bureaucratic behavior. These hypotheses and questions will guide the methodology and analysis for the remainder of this study. Each guiding research question starts with an inquiry that is exploratory in nature. Chapter 4 will answer this with simple descriptive statistics. These initial questions are then followed by explanatory questions that are used to create the hypotheses about potential influences on administrative behavior within an information environment. Chapter 3 will further detail the rationale and hypothesized direction of the predictor variables in discussing how the concepts in Figure 3 were operationalized.

Contact

Research Question 1 focuses on the measure of *contact* frequency that a state agency head has with different actors in the information environment. Personal experiences of administrators can provide access to these actors before and during their current position as the head of an agency. This concept of *exposure* to possible information environment actors could lead to increased frequency of contact. Likewise, leading an agency with more resources, or

capacity, could potentially provide an administrator the ability to also have more resources, specifically time, to interact with external actors. The presence of *competing interests* within an agency head's political environment could create pressure to please divisive principals or clientele. Contact frequency would increase as a result of administrators seeking multiple viewpoints and arguments within a given policy space. The hypotheses and sub-hypotheses below are moving the concepts presented in Figure 3 towards operationalization and measurement.

RQ1 *Contact*: (Exploratory) Who are state agency heads more likely to have contact with in their information environment? How does the frequency of contact of state agency heads with other political actors vary?
(Explanatory) What individual, agency, or state level variables impact the frequency of an administrators contact with others within their environment?

H1: *Exposure* of state administrators to other actors will increase how frequently they have contact with other political actors in their information environment.

H1a: More years worked in the state will increase frequency of contact.

H1b: Employment in the private sector will increase frequency of contact.

H1c: Employment in the nonprofit sector will increase frequency of contact.

H1d: Membership in a professional organization will increase frequency of contact.

H2: Greater agency *capacity* will increase how frequently agency heads are in contact with other political actors in their information environment.

H2a: Larger staffs will increase frequency of contact.

H2b: Greater budgetary resources will increase frequency of contact.

H3: *Competing interests* in the state will increase the frequency that the heads of agencies within that state have contact with other political actors in their information environment.

H3a: Being appointed by a board/commission will increase frequency of contact.

H3b: Frequency of contact with external actors will be greater for some agencies over others.

H3c: Budgets comprised of greater percentages of federal funds will increase frequency of contact for the heads of those agencies.

H3d: The presence of divided government in a state will increase frequency of contact with other actors for state administrators in that state.

H3e: Increased legislative professionalism will increase frequency of contact.

Information Seeking

Research question 2 specifies the interaction of stage agency heads with actors in their information environment into one deliberate form of contact that is initiated by the administrator, *information seeking*. Personal experiences of administrators can provide access to these actors before and during their current position as the head of an agency. This concept of *exposure* to possible information environment actors could lead to increased frequency of information seeking. Leading an agency with more resources, or *capacity*, could potentially provide an administrator the ability to also have more resources, specifically time, to interact with external actors and personally seek out information. The presence of *competing interests* within an agency head's political environment could create pressure to please divisive principals or clientele. Information seeking would increase as a result of administrators needing multiple viewpoints and arguments within a given policy space. The hypotheses and sub-hypotheses below detail the specific direction and relationship of these concepts.

RQ2 *Information Seeking*: (Exploratory) Who are state agency heads more likely to seek out information from in their information environment? How frequently do state administrators seek out information from other political actors relative to their programs and/or policy areas?
(Explanatory) How does information seeking vary based on individual, agency, or state variations?

H4: *Exposure* of state administrators to other actors will increase how frequently they seek information from other political actors in their information environment.

H4a: More years worked as head of the agency will increase frequency of information seeking.

H4b: More years worked outside of state government will increase frequency of information seeking.

H4c: Membership in a professional organization will increase frequency of information seeking.

H4d: Daily contact with an actor will increase frequency of information seeking from that actor.

H5: Greater agency *capacity* will increase how frequently the heads of that agency seek out information from other political actors in their information environment.

H5a: Larger staffs will increase frequency of information seeking from an outside source.

H5b: Greater budgetary resources will increase frequency information seeking from an outside source.

H6: *Competing interests* in the state will increase the frequency that the heads of agencies within that state seek out information from other political actors in their information environment.

H6a: Being appointed by a board/commission will increase frequency of information seeking from an outside source.

H6b: Frequency of information seeking from external actors will be greater for some agencies over others.

H6c: Budgets comprised of greater percentages of federal funds will increase frequency of information seeking from an outside source by a state agency head.

H6d: The presence of divided government in a state will increase frequency of information seeking from an outside source by state administrators in that state.

H6e: Increased legislative professionalism will increase frequency of information seeking from an outside source.

Inclusiveness

Research Question 3 focuses on the number of actors in the information environment that a state agency head frequently seeks out for information. The *exposure* to possible information environment actors through work experiences and tenure could lead to increased inclusiveness. Leading an agency with more resources, or *capacity*, may provide an administrator more time to interact with external actors and personally seek out information. The presence of *competing interests* within an agency head's political environment could create pressures to include different opinions. The frequent inclusion of more actors would increase as a result of administrators needing multiple viewpoints and arguments within a given policy space. The hypotheses and sub-hypotheses for *inclusiveness* are presented below.

RQ3 *Inclusiveness*: (Exploratory) Do state agency heads vary in their levels of inclusiveness in regards to their information environments and information-seeking behaviors across policy and program areas throughout the states?

(Explanatory) How does this vary based on individual, agency, or state variations?

- H7: Individual exposure will increase the inclusiveness of a state agency head.
H7a: Increased years within the agency will increase inclusiveness.
H7b: Experience outside of state government will increase inclusiveness.
- H8: Increased agency capacity will increase the inclusiveness of a state agency head.
H8a: Larger staffs will increase inclusiveness.
H8b: Greater budgetary resources will increase inclusiveness.
- H9: The presence of competing interests in the state will increase the amount of inclusiveness of a state agency head with outside actors.
H9a: Being appointed by a board/commission will increase inclusiveness.
H9b: Inclusiveness will be greater for some agencies over others.
H9c: Budgets comprised of greater percentages of federal funds will increase the inclusiveness of the agency heads.
H9d: The presence of divided government in a state will increase inclusiveness by state agency heads within that state.
H9e: The absence of term limits will increase inclusiveness.

Conclusion

State agency heads function in varying environments on a daily basis but there is much similarity in the available resources they have at their disposal. Information is a resource the same as money, expertise, or power. The potential information environment is the same across agencies and states. All actors have the *potential* to be information sources. This chapter has briefly discussed areas of public administration literature that focus on the importance of information and the strategic role of state agency heads. The concept of a uniform information environment in which all agency heads operate was presented to guide the research questions and hypotheses. Chapter 3 presents the methods for analysis of the guiding research questions and hypotheses presented as well as further discussion about the variables and hypothesized relationships.

CHAPTER THREE: METHODOLOGY

This chapter proposes several approaches to answering the guiding research questions about *contact* and *information seeking* behaviors of state agency heads. Levels of influence of various political actors in the policy process are difficult to measure; observable activities are not often similarly quantifiable or comparable across individuals, agencies, or states. Also, much of what happens in state government is part of a larger political process, and many tradeoffs can occur that are unobservable. Surveys of state administrators are used widely within public administration, political science, and government research to determine any number of perceived or actual occurrences. These surveys are the most appropriate vehicle for measuring the quantity and composition of interactions to address the questions presented here. While survey responses are subjective in nature, they have been shown to be an appropriate measure of influence and interaction from the point of view of those responsible for carrying out policy directives (Clinton, Lewis, and Selin 2013; Dometrius, Burke, and Wright 2008).

Study Population and Sample

Data was collected through a direct email survey of state agency heads across all 50 states in several policy areas. The study population was identified from the Council of State Governments *State Directory: Directory III-Administrative Officials 2016*, which identifies the individual in each state directly responsible for programs or policies in 110 different areas. This database has been used consistently since the 1960's as the source for the American State Administrators Project as well as other research about state agencies (Bowling and Wright 1998). Using the coding system utilized by the American State Administrators Project, four functional

categories were chosen to comprise the study population so that hypotheses concerning variation by agency type could be tested. All administrators belonging to Economic Development, Education, Environment/Energy, and Income Security/Social Services agencies in the 50 states were included in the study population. Table 3.1 lists the specific agencies and programs included in each categorization.

TABLE 3.1
PERCENTAGE OF STATE AGENCY HEADS INCLUDED IN POPULATION (N)

Functional Category	CSG Directory Designation	Percent of Total Population
Economic Development	Commerce, Economic Development, Gaming, Historic Preservation, Housing Finance, International Trade, Labor, Lottery, Small and Minority Business Assistance, Tourism	31% (277)
Education	Education, Higher Education	21% (187)
Environment or Energy	Energy, Environmental Protection, Oil and Gas Regulation, Recycling, Waste Management, Water Resources	21% (188)
Income Security or Social Services	Aging, Children and Youth Services, Employment Services, Human Services, Medicaid, Social Services, Vocational Rehabilitation, Welfare	27% (241)

100% N=893

A database was created to include all individuals listed within the above categories of the Council of State Governments' *Directory*. Most of the entries included an email contact for the state administrator. For those individuals without an email, a Google search was conducted to find the agency website and contact information. After removing duplicates, the total population for the survey included 893 state administrators from the four categories.

Data Collection

A survey instrument aimed at collecting individual and agency level data about frequency of *contact* and *information seeking* was piloted prior to dissemination to the study population. Several knowledgeable agency directors and specialists known to the author were asked to

provide feedback on length, clarity, usability, and understanding of questions. Comments and insights about the survey structure and wording helped to create the final instrument. The survey questionnaire gathered data on individual and agency characteristics as well as individual behaviors related to *contact* and *information sharing* with other political actors. The questions from the distributed survey can be found in Appendix A along with the email request and consent letter.

The survey was administered over three iterations in Fall 2016 using the Qualtrics Survey System. State administrators in the database were sent an email invitation to participate in the survey. The email contained a link to the survey. After the initial email was sent, follow-up requests for participation were conducted after one and two months. A total of 166 responses were recorded for a general response rate of 19%. Of the responses, 123 contained enough information to be included for analysis. This effective response rate of 14% is reflected for the descriptive statistics. Individual relationship models have varying samples sizes due to non-responses to included variables. The final sample consists of:

Economic Development (22)	18%
Education (32)	26%
Environment/Energy (30)	24%
Income Security/Social Services (39)	32%

There were no respondents from Hawaii, Massachusetts, Nevada, New Jersey, or South Carolina. All other states had at least one respondent from one of the four areas.

Dependent Variables

This study focuses on three research questions about state agency heads' *contact* and *information seeking* behaviors with other political actors. It provides both descriptive and explanatory research. Each of the questions provides the basis for the construction of a

dependent variable for analysis. First, *contact* explores the frequency of contact that state agency heads have with other political actors in the information environment. Second, *information seeking* examines one specific type of contact, that of seeking out information from individuals or organizations. And third, *inclusiveness* measures the number of different sources that each state agency head often seeks.

Frequency of Contact with Other Political Actors

Frequency of *contact* with other political actors has many implications for the overall political system in general and for the bureaucracy specifically. It has been used as a measure of networking behavior (Meier and O’Toole 2005; Siciliano 2017). This dependent variable is a self-reported measure of the extent of contact that an agency administrator had with an external information actor. Respondents indicated whether they never, monthly, less than monthly, weekly, or daily had personal “phone, face-to-face, or direct email contact” with each actor in the information environment. These actors were:

- | | |
|---|---------------------------|
| Governor | National officials |
| Governor’s staff | Professional associations |
| Legislators | State interest groups |
| Legislative staff | National interest groups |
| Clientele groups | Local nonprofits |
| Citizens | State nonprofits |
| Other administrators in the same state | National nonprofits |
| Other administrators in a different state | State policy advocates |
| Federal administrators | National policy advocates |
| Local officials | Academic Researchers |
| | Think tanks |

The variables for “daily” and “weekly” were combined to make one category labeled as “frequent” contact. This more accurately portrays which individuals or organizations have recurrent contact with the state administrator as compared to those with only occasional or no contact. Since the focus of this study is explicitly on the actors that have frequent contact with state agency heads, the twenty-one possible entities were ranked according to frequency of *contact* with the study sample. The top five most frequently contacted actors will be used for analysis. The amount of contact with each of these top five entities is modeled and analyzed for the first phase of the study.

Information Seeking Activity

While contact may suggest a level of influence or association between state agency heads and external actors, the act of *information seeking* by an administrator from an outside source is an actual indicator of information sharing. Sample respondents were asked how often (never, monthly, less than monthly, weekly, or daily) they sought out specific actors for information pertinent to their program or policy area. This list of external actors was the same as that for the question regarding *contact*.

The top five information sources are the same as the top five frequent contacts with a slight variation in ordering. The conclusion can be drawn that these five actors within the information environment do have the most access and that access translates in some way to information flow. The second phase of data analysis uses frequency of *information seeking* from these top five actors to examine what factors may influence an administrator’s likelihood of seeking information from that entity.

Inclusiveness

The third dependent variable was constructed by aggregating the data on *information seeking* to determine the number of usual contacts for information that a state agency head has. This measure of *inclusiveness* ranged from a minimum of zero frequently sought information sources to a maximum of ten. A more inclusive administrator could be a desirable quality in light of theories of democracy, representative bureaucracy, and pluralism. Chapter 5 includes a brief discussion of these implications.

Table 3.2 presents the dependent variables with additional information on coding and definitions. Also included in the table are the explanatory and control variables to be discussed next. Information on coding, values, variable types, and sources are included for all variables in the study.

TABLE 3.2 VARIABLES		
Variable	Measurement	Definition
Dependent Variables: <u>Administrative Behavior</u> <i>Frequency of Contact</i> Governor Governor's Staff Legislators Legislators' Staff Clientele Groups Citizens (general public) Other administrators – same state Other administrators – different state Federal administrators Local Officials National Officials Professional Association Interest Group – state Interest Group – national Nonprofit – local Nonprofit – state Nonprofit – national Policy Advocate – state	Ordinal	Indicates administrator's response regarding the frequency with which he or she has personal phone, face-to-face, or direct email contact with various individuals/organizations 1 = Never 2 = Less than Monthly 3 = Monthly 4 = Weekly 5 = Daily

TABLE 3.2 VARIABLES		
Variable	Measurement	Definition
Policy Advocate – national Think Tank Academic Research(er)		
<i>Frequency Information Sought from</i> Governor Governor’s Staff Legislators Legislators’ Staff Clientele Groups Citizens (general public) Other administrators – same state Other administrators – different state Federal administrators Local Officials National Officials Professional Association Interest Group – state Interest Group – national Nonprofit – local Nonprofit – state Nonprofit – national Policy Advocate – state Policy Advocate – national Think Tank Academic Research(er)	Ordinal	Indicates administrator’s response regarding the frequency with which he or she seeks out information from various individuals/organizations 1 = Never 2 = Less than Monthly 3 = Monthly 4 = Weekly 5 = Daily
<i>Inclusiveness</i>	Count	Composite measure of the indicated occurrences of information seeking behavior that an administrator engaged in within one year
Independent Variables:		
<u>Administrator Characteristics</u>		
<i>Appointment Type</i>	Categorical	Nature of the process by which the administrator came to his or her current position 1 = Gubernatorial Appointment 2 = Board/Commission 3 = Department Head 4 = Popular Election 5 = Civil Service Process 6 = Other
<i>Longevity in Position</i>	Continuous	Number of years the administrator has served in the current position
<i>Experience outside of Government</i>	Continuous	Number of years the administrator worked outside of government in the private or non-profit sectors

TABLE 3.2 VARIABLES		
Variable	Measurement	Definition
<i>Political Ideology</i>	Dichotomous	Administrator identification of political party affiliation recoded to dummy variable 0 = Conservative 1 = Liberal
<i>Gender</i>	Dichotomous	Administrator identification of gender recoded to dummy variable 0 = Male 1 = Female
<i>Age</i>	Continuous	Current age of administrator recoded to be mean-centered
Independent Variables: <u>Agency Characteristics</u>		
<i>Type of Agency</i>	Categorical	Categorization of agency based on the functional policy area 1 = Economic Development 2 = Education and Training 3 = Environment or Energy 4 = Income Security or Social Services
<i>Staff Size</i>	Continuous	Number of employees within the administrator's agency
<i>Budget Size</i>	Continuous	Amount of the current annual budget in millions of dollars
<i>Federal Fiscal Involvement</i>	Ordinal	Proportion of the agency's budget which is comprised of federal funds 1 = 0 2 = under 25% 3 = 25%-49% 4 = 50-74% 5 = 75% or more
Independent Variables: <u>State Characteristics</u>		
<i>Population Size</i>	Continuous	State population in millions (<i>The Book of the States 2016</i> – July 1, 2014 Census Bureau Estimates)
<i>Southern</i>	Dichotomous	0 = Other 1 = Southern state
<i>Government Ideology</i>	Continuous	NOMINATE measure of state government ideology from Berry et al 2010 (2014 scores) Higher scores indicate more liberal policies/opinions
<i>Political Culture</i>	Categorical	Elazar's categorization of political culture (1984) 1 = Individualistic 2 = Traditionalistic 3 = Moralistic
<i>Legislative Term Limits</i>	Dichotomous	Indicates whether legislators in the state are subject to term limits of any kind (<i>Book of the States 2016</i>) 0 = No 1 = Yes

TABLE 3.2 VARIABLES		
Variable	Measurement	Definition
<i>Legislative Professionalism</i>	Continuous	Squire's Legislative Professionalism measure from Squire(2007) (2003 scores) Higher scores indicate more institutional professionalism
<i>Divided Government</i>	Dichotomous	Indicates if the majority party in either legislative chamber differs from that of the governor (Book of the States 2016) 0 = No 1 = Yes
<i>Interest Group Power</i>	Ordinal	Classification of interest group power in the state from Nownes et al. 2007 0 = Subordinate 1 = Complementary/Subordinate 2 = Complementary 3 = Dominant/Complimentary 4 = Dominant

Explanatory Variables

Three main explanatory hypotheses were presented at the end of Chapter 2 to describe increased *contact*, *information seeking*, or *inclusiveness* by state agency heads: *exposure*, *capacity*, and *competing interests*. These hypothesized effects are measured in several ways across the three research questions.

Measuring Exposure, Capacity, and Competing Interests

Exposure to outside sources can be acquired in many ways. Outside experience and tenure can both potentially increase frequency of *contact*, *information seeking*, and *inclusiveness*. Experience is acquired through work within a state, within an agency, or in outside organizations. The amount of time spent in any of these settings could increase exposure to actors both internal and external to the state or agency environment. Experience in state government in general should broaden an administrator's connections within a given issue

network of known individuals who have an interest in their particular programs or policies (Hecl 1978). If a state agency head has experience in another state, the private sector, or the non-profit sector, he or she is more likely to have contact with individuals or organizations in these areas that may not be traditional governmental actors. The amount of time spent within any of these positions could result in more actors or individuals who are known to a state administrator, thus increasing interactions like those examined here. Table 3.2 presents the variables related to this concept and the corresponding coding.

A variety of state and national professional associations exist to which a state agency head could belong. Being a member of a professional association provides an avenue for *exposure* to potential contacts and information sources. Balla (2011) found evidence that membership in professional organizations by bureaucrats positively affected policy diffusion, suggesting that membership in such provides important linkages between individuals, institutions, and ideas. Similarly, Hale (2010) described how the activities of professional associations related to information provision encouraged diffusion processes. Professional association membership is included as a dummy variable as shown in Table 3.2.

Capacity is a concept that is often theorized to influence innovation, success, or resources. Depending on the type of study and the unit of observation, capacity can refer to any number of social, political, community, or economic variables. As it relates to bureaucracy, capacity typically refers to organizational resources such as budget, manpower, expertise, or authority. The increased resources of an administrator's agency as measured through larger staff or budget resources could allow an administrator an increased ability deal with external actors (*contact*), seek important information (*information seeking*), or create relationships important to agency success (*inclusiveness*).

The nature of a concept such as *capacity* can be difficult to tease out, however. Here, increased capacity is theorized to increase the resource of time for the administrator helming that agency. The assumption then is that more available time would allow an administrator the ability to *contact* or *seek information* from outside sources. However, increased capacity within an agency may also provide the manpower for a state executive to simply direct a subordinate to gather any information or handle external contacts. Increased budgets could also simply measure pass through money and not agency funding from the state. For this study, all relationships are hypothesized as positively affecting the dependent variables.

As a measure of *capacity*, the size of an agency represents the amount of manpower that a state agency head will have at his or her disposal. Here, the relationship between agency size and contact frequency is hypothesized as a positive relationship. An administrator with a larger staff will have more discretionary time to be able to network or interact in the course of overseeing the functional responsibilities of the state agency. A possible alternative hypothesis would be that a large staff leads to an administrator delegating activities related to contact and information seeking to subordinates. Competing ideas about the direction of a relationship exist for many of the variables in this study. To aid in understanding and comparability, the positive relationships are used for all hypotheses. As shown in Table 3.2, agency size is the reported number of employees that each respondent indicated in answering the survey.

Budget size is an appropriate indicator of the amount of resources that an agency has at its disposal. Additionally, agencies with larger budgets are suggested to have a degree of protection from outside influence (Hebert, Brudney, and Wright 1983). This would allow an administrator freedom to interact with, seek information from, or include other sources. Conversely, an administrator could also use this measure of *capacity* to use only intra-agency

resources or insulate themselves from external political actors. For purposes of this paper, the positive relationship is chosen.

Competing interests attempt to quantify how state administrators operate within a vast, interconnected web of varying degrees of political and administrative influence in their states. The arrangements and institutions of American federalism add to the competition and cooperation between various levels government. A state agency head may particularly feel the effects of *competing interests* because of his or her appointment type, type of agency, political party divisions within the state, legislative professionalism, and federal involvement with agency priorities. Table 3.2 presents the variables discussed below.

The way state agency heads are appointed to their positions may impact the way in which they interact with or seek information from other political actors. Specifically, appointment by a board or commission may require an administrator to be more cognizant and responsive to varied interests in the programs or policies he or she directs. Other appointment types, specifically gubernatorial, may narrow the need for contacts or information sources because of direct linkages to the political principal.

A long research agenda suggests agency type is associated with differences in agency dynamics with outside actors or institutions (Wilson 1989). Brudney and Hebert (1987) noted that the perceived influence of state political actors on the bureaucracy varied systematically by agency type in the 1978 iteration of the American State Administrator's Project. Prior research by the author has also found significant differences based on the type of agency related to budget priorities and personal viewpoints on model states (Hardwick 2014). Complexity and salience are not uniform across agencies or states (Ringquist, Worsham, and Eisner 2003). The four types of agencies included in this study have different clientele and interested actors within their issue

networks. The goal is to understand if the same type of actors are involved in the same ways across four functional categories. They all have competing interests over different types of policies or programs therefore no directional hypothesis is offered for this variable. Instead, it is hypothesized that relationships will simply be different. Lundin and Oberg (2014) found that political conflict spurred public administrators to search for expert knowledge.

Divided government is included as an explanatory variable that captures the presence of *competing interests* within a state. Divided government has many implications for the political environment in which a state agency head functions. If the governor is of a different party than either house of the state legislature, there will be competing pressures for influence, access, and information within the state. To be successful with competing political principals, a state agency head should choose to have contact with more actors (so as to either not appear biased or to get multiple viewpoints) as well as seek out information congruent with either side. However, divided political principals could also cause an administrator to reduce contacts and information seeking to preserve neutrality and limit perceived political bias. The positive relationship was chosen for continuity throughout this study.

Grant money from the federal government is an important component of state and agency budgets. Financial resources, however, do not come free. Considerable research on the influence of federal funding has found impacts in direction, priorities, and goals of state agencies or programs based on federal money. One recent study concluded that “state administrators face conflicting incentive structures and policy-specific capacity and capability deficits that influence their motivation and ability to achieve performance goals” when dealing with federal funding for programs (Terman 2015b, 333). These issues from federal funding would increase pressure from *competing interests* and thus positively influence contact and information-seeking behaviors. In

this analysis, the percentage of an agency's budget that is comprised of federal aid is used to measure federal influence. Table 3.2 describes this categorical variable that indicates whether an agency has 0%, less than 25%, 26-50%, 51-75%, or more than 75% of their budget comprised of federal money. Increased federal influence is hypothesized to increase contact with external state actors as well as information flow to those outside the state in an administrator's information environment. However, it is important to note competing arguments that federal influence trumps other political actors and would thus negatively impact the amount of contact or information sought from outside sources.

Bureaucratic professional expertise enhances the ability of an agency or agency head to influence or implement programs or policies. Boushey and McGrath (2017) found that less legislative power, specifically for term limited legislatures, increased administrative influence in the policy process at the state level,

Eroding policy expertise of state legislators has resulted in increased bureaucratic participation in the policy process, as amateur politicians rely more heavily on professionalized executive agencies to define problems and develop solutions.
(85)

As a measure of *competing interests* then, legislative professionalism and term limits capture a measure of legislative power comparative to other actors within a state. A more professional legislature or one unencumbered by term limits is better able to pursue legislative interests. These are hypothesized to then increase the need for various contacts and information sources as a state agency head navigates political and administrative processes.

The alternative view suggests that, similar to divided government, more professional legislatures would induce administrators to attempt to be neutral. This would negatively impact contacts and information seeking. For purposes of this paper, the positive relationships between all explanatory variables and dependent variables were chosen. For simplicity's sake, modeling

all hypotheses as positive, even when there are alternative hypotheses, allows examination of the possibility of competing relationships between measures.

The most recent Squire's Index (2007) of legislative professionalism is used to capture the power of the state legislatures in comparison to other governmental entities. This is also used as a control measure for term limits to ensure that any effect is a result of the institutionalized limits as opposed to general levels of professionalism. Increased professionalism within a state legislature would suggest more institutional resources to compete with other interests.

Contact

The first stage of analysis focuses on frequency of *contact* [RQ1]. Contact frequency with any external actor will increase with greater individual exposure to external actors in general [H1]. Four corresponding hypotheses expand this general view to specific and measurable variables of *exposure* as presented in Chapter 2, displayed in Table 3.2, and presented again here:

- H1: *Exposure* of state administrators to other actors will increase how frequently they have contact with other political actors in their information environment.
 - H1a: More years worked in the state will increase frequency of contact.
 - H1b: Employment in the private sector will increase frequency of contact.
 - H1c: Employment in the nonprofit sector will increase frequency of contact.
 - H1d: Membership in a professional organization will increase frequency of contact.

The hypotheses about agency *capacity* [H2] are identical across all three phases of analysis. Larger staffs and larger budgets are hypothesized to increase contact with actors external to the agency. The main and supporting hypotheses regarding this include:

- H2: Greater agency *capacity* will increase how frequently the heads of that agency are in contact with other political actors in their information environment.
 - H2a: Larger staffs will increase frequency of contact.
 - H2b: Greater budgetary resources will increase frequency of contact.

Variations in state environments create varying types of *competing interests* that a state administrator has to deal with in carrying out his or her duties. *Contact* frequency is hypothesized to increase as agency heads have to deal with greater political differences or multiple principals [H3]. The hypotheses to be tested related to this are:

H3: *Competing interests* in the state will increase the frequency that the heads of agencies within that state have contact with other political actors in their information environment.

H3a: Being appointed by a board/commission will increase frequency of contact.

H3b: Frequency of contact will be increased for some agencies over others.

H3c: Budgets comprised of greater percentages of federal funds will increase frequency of contact of the heads of those agencies.

H3d: The presence of divided government in a state will increase frequency of contact with other actors for state administrators in that state.

H3e: Legislative professionalism will increase frequency of contact.

Information Seeking

Research Question 2 is focused on information seeking. The hypotheses state that *information seeking* from an external actor will increase with greater individual *exposure* to external actors [H4], greater agency *capacity* [H5], and the presence of *competing interests* [H6] in the state. The variables to measure experience vary slightly from those used for *contact* because of the difference between simple contact versus information seeking. Being employed as the head of an agency suggests expertise and knowledge. As such, more years actually heading a state program would provide discernment and understanding about potential information sources. Years outside government (in either nonprofit or private organizations) are combined, and professional membership is included as well.

Because contact with an outside actor is often assumed to provide influence, a variable for frequent contact is included in the information seeking portion of analysis. Does frequent contact with an individual or organization translate into that actor being a frequent source of

information as well? A dummy variable for frequent contact is included for each of the top five information sources examined in the second phase of analysis. The hypotheses to be tested in phase two are:

H4: *Exposure* of state administrators to other actors will increase how frequently they seek information from other political actors in their information environment.

H4a: More years worked as head of the agency will increase frequency of information seeking.

H4b: More years worked outside of state government will increase frequency of information seeking.

H4c: Membership in a professional organization will increase frequency of information seeking.

H4d: Daily contact with an actor will increase frequency of information seeking from that actor.

H5: Greater agency *capacity* will increase how frequently the heads of that agency seek out information from other political actors in their information environment.

H5a: Larger staffs will increase frequency of information seeking from an outside source.

H5b: Greater budgetary resources will increase frequency information seeking from an outside source.

H6: *Competing interests* in the state will increase the frequency that the heads of agencies within that state seek out information from other political actors in their information environment.

H6a: Being appointed by a board/commission will increase frequency of information seeking from an outside source.

H6b: Frequency of information seeking will be increased for some agencies over others.

H6c: Budgets comprised of greater percentages of federal funds will increase frequency of information seeking from an outside source by a state agency head.

H6d: The presence of divided government in a state will increase frequency of information seeking from an outside source by state administrators in that state.

H6e: Legislative professionalism will increase frequency of information seeking from an outside source.

Inclusiveness

The final stage of analysis that examines the *inclusiveness* [RQ3] of an administrator within his or her information environment hypothesizes that individual *exposure* to external actors will increase the inclusiveness of a state agency head [H7]. Additionally, increased agency *capacity* [H8] and state *competing* interests [H9] are suggested to positively affect the number of information sources that an administrator seeks out. Because of the summary nature of the inclusiveness variable, a slight variation in the measurement of concepts is used. For *exposure*, two explanatory sub-hypotheses purport that general exposure through any outside experience and increased tenure within the agency will lead to increased inclusiveness.

- H7: Individual exposure will increase the inclusiveness of a state agency head.
- H7a: Increased years within the agency will increase inclusiveness.
- H7b: Experience outside of state government will increase inclusiveness.

For *capacity*, the hypotheses are similar to that of the previous research questions:

- H8: Increased agency capacity will increase the inclusiveness of a state agency head.
- H8a: Larger staffs will increase inclusiveness.
- H8b: Greater budgetary resources will increase inclusiveness.

The similar institutional constraints of the state governments and federalism provide uniformity in all three research questions in the main hypotheses and sub-hypotheses concerned with the presence of *competing interests* towards the inclusion of outside sources.

- H9: The presence of competing interests in the state will increase the amount of inclusiveness of a state agency head with outside actors.
- H9a: Being appointed by a board/commission will increase inclusiveness.
- H9b: Inclusiveness will be increased for some agencies over others.
- H9c: Budgets comprised of greater percentages of federal funds will increase the inclusiveness of the agency heads.
- H9d: The presence of divided government in a state will increase inclusiveness by state agency heads within that state.
- H9e: The absence of term limits will increase inclusiveness.

Control Variables

Administrator Characteristics

Individual preferences and attitudes may be as influential as external parameters when seeking to understand the behaviors of state administrators (Mossberger and Hale 2002, 415). While people functioning in government are shaped by their surroundings, it is a symbiotic relationship wherein they alter those around them as well. Five control variables that focus on individual characteristics or circumstances are presented in Table 3.2 and are included for analysis in portions of this study: gender, race, age, ideology, and gubernatorial appointment.

Gender differences between male or female agency heads have been noted in previous research (Jacobson, Palus, and Bowling 2009). Because of different managerial styles and networking habits, gender may have an influence on contacts with other political actors as well as seeking information and inclusion of information sources. This is included as a control variable rather than an explanatory hypothesis because no clear directional effect based on current research suggests that women administrators have different contacts or information seeking behavior. Contradictory findings have resulted from studies examining the networking behavior of women compared to men, finding them to be less frequent as well as more active (Jacobsen, Palus, and Bowling 2009). This is a dummy variable coded 1 for female and 0 for male.

Minorities have increased in representation in the area of state agency heads significantly since the 1960's (Bowling and Wright 1998). Theories of representative or democratic bureaucracy suggest that these administrators may act differently because of their background and their interactions with other minority group members. Minority is coded as 0 for white/Caucasian and 1 for all other races or ethnicities. Age is used as a control variable as well.

Similar to minority representation, age demographics may play a role in individual views on appropriate behaviors and decisions of state administrators.

While agency administration is not directly a political issue, many considerations must be taken into account when dealing with any policy or program area. Political affiliation as self-reported by state agency heads is included in this study to test if any differences exist based on conservative or liberal personal leanings. Individuals were asked if they had a party affiliation and those who responded as Democrat were coded 1. For those who indicated they were Independent, they were asked if they tended to vote more conservatively or liberally. Those who responded with the latter were also coded as 1 and all others coded as 0.

While board/commission appointment is included in this study as an explanatory variable, gubernatorial appointment is included as a control variable. The area of inquiry is on variables that may increase contact or information behaviors and appointment by a governor may be hypothesized to decrease any of these activities because of an administrator's priority to this direct principal. This variable is included to ensure that proper accounting is given for the effects of appointment type on information behaviors and contact frequency.

State Parameters

This study includes a number of variables at the state level that are intended to explain why administrators within those states would have more contact or more frequent information seeking activities than others. Additional variables are included to help measure the general capacity and political competitiveness of the state as well as account for variances in the data.

Size matters when it comes to comparisons of state governments (Walker 1969). Population size is an appropriate indicator of both capacity and resources when comparing across

state lines. Population data from the *2016 Book of the States* was utilized for this variable. Additionally, states are seen to have preferences that naturally can be categorized as more conservative or more liberal. While a measure of policy liberalism does not capture the opinions or decisions of state administrators, it is informative of the state environment in which an administrator operates and would thus pertain to how goals and objectives are prioritized. Berry et al's (2010) policy liberalism index is used here as a measure of a state's general attitude towards more or less liberal policies. Policy liberalism may have an effect on an overall state's information environment as well as an administrator's view on the inclusion of outside information sources.

Interest groups are an interesting component of the American political system. Their level of power and influence has been examined and calculated in many ways. The power of single groups in issue areas or states is well documented but for this research the focus is on the overall influence of interest groups in a given state that may shape the information environment that a state agency head finds him or herself in. Interest groups can have influence on their own (Allen 2005) as well as facilitate information flow as part of larger political or policy processes (Garrett and Jansa 2015). Based off the Hrebenar-Thomas study of group system power in the states, the updated classifications of Nownes, Thomas, and Hrebenar (2007) are used to classify this variable. States are divided into five categories based on their variation between a subordinate, complementary, or dominant interest group culture within the state. Dominant refers to states where groups in general have an "overwhelming and consistent influence on policymaking" (Nownes, Thomas, and Hrebenar 2007, 120). Complimentary states find groups work with or are appropriately constrained by other political and institutional factors. Subordinate states (of which there are none) would lack any identifiable interest group influence

on state policy making. Between these three classifications lie two combination categories of Dominant/complimentary and Complementary/subordinate for states that have characteristics of each and/or may be moving from one into another.

Political culture is a variable sometimes overlooked in current studies because of the lack of empirics in the classification system. However, Elazar's (1984) typology still manages to capture differences among state governments that do not have easily quantifiable measures. Because of the orientation of a states' populations' opinion on bureaucracy, politics, and the market, this variable needs to be included to determine if political culture plays a role in the information environments that exist within certain state agencies. An Individualistic political culture, such as is found in the Midwest, values the marketplace and mistrusts large bureaucracy. Government is best viewed as a necessary regulatory evil to be dealt with. Directly contrasting this is a Moralistic political culture that values government and the public involvement thereof. Government is viewed as a positive institution to better the lives of the public. These states can be found in the far west or northern edges of the country. Lastly, Traditionalistic culture, which dominates in the southern states, exhibits characteristics of a general public that is removed from government activity and prefers maintenance of the status quo and minimal interference. While it is rare for a state to be comprised totally of one political culture, a dominant political culture in each state continues to influence outcomes and environments (Gray 1978). This variable is included to account for general views within each state on the appropriate purview of government interaction with outside sources. It could potentially equate to administrator behaviors within information environments.

Empirically, some of the differences in political culture as a measure in quantitative analysis have been shown to be a result of significant differences between the American South

and all other states. The sample is comprised of a plurality of administrators from what are considered southern states. To control for the high distribution of respondents from this area, southern is included as a control variable. Administrators from southern states are coded as 1 and all others as 0.

Descriptive Statistics

Descriptive statistics for the sample population are displayed in Table 3.3. Several of the variables are examined as both continuous and categorical to observe averages and distributions across the sample. Appointment refers to the method by which the state administrator came to his or her current position as an agency head. The sample consists of 38% administrators who were appointed by governors, 20% administrators who were appointed by a board or commission, and 42% of administrators selected through other formats such as promotion, elections, or civil service procedures.

Political ideology, gender, minority, and professional affiliation have all been coded as dummy variables for ease of use in analysis as both control and predictor variables. Of the sample, 57% identify as a Democrat or Liberal, 40% are female, and 10% are racial minorities. Additionally, 66% had been employed in the private sector, 39% had been employed in the non-profit sector, and 66% are members of professional organizations related to their agencies.

TABLE 3.3
SAMPLE DESCRIPTIVE STATISTICS: INDIVIDUAL LEVEL MEASUREMENTS

	Freq	%	Mean	SD	Min	Max
Appointment Type						
Governor	47	38				
Board/Commission	23	20				
Other	53	42				
Length of Tenure						
in Position			5.10	6.12	.5	30
in Agency			10.93	9.92	1	40
in State			17.13	10.51	1	40
Outside Experience	107	87	13.84	11.01	1	40
in Another State	14	12	12.21	9.68	1	29
in Nonprofit	47	39	7.94	7.4	1	37
in Private	80	66	11.08	10.30	1	40
both Private and Nonprofit	28	22				
Liberal Ideology	70	57				
Age			55.40	8.51	35	72
Female	49	40				
Minority	12	10				
Prof. Org. Affiliation	75	66				

Due to rounding, not all percentages equal 100

n=123

Information provided by each administrator about their agency is included in Table 3.4. Of the survey respondents, 18% head Economic Development agencies, 26% are in charge of Education agencies, 24% are in Environment/Energy agencies, and 32% represent Income Security/Social Services. This can be compared to the total population in Table 3.1; the sample distribution is less than 5% different from all agency categories except Economic Development.

Federal fiscal involvement describes the percentage of the administrator's agency budget that is comprised of federal funding. For 20% of administrators, 75% or more of their budgets are funded federally. Twenty-two percent have 50-74% of their budgets from federal funds; 15% fall in the 25-49% range. Last, 35% receive less than 25% in federal funds. Eight percent indicated receiving no federal funding.

Budget and staff size are shown as both continuous and categorical variables to understand the distribution within the sample. Outliers exist at both the top and bottom ends of each of these variables. Staff and budget sizes were distributed relatively evenly across this sample of state administrators.

TABLE 3.4
SAMPLE DESCRIPTIVE STATISTICS: AGENCY LEVEL MEASUREMENT

	Freq	%	Mean	SD	Min	Max
Functional Category						
Economic Development	22	18				
Education/Training	32	26				
Environment/Energy	30	24				
Income/Social Services	39	32				
Staff Size						
			749.23	1642	1.5	8500
0-20	22	18				
21-50	16	13				
51-150	26	21				
151-500	26	21				
500+	33	27				
Budget Size (millions)						
			572.01	1962.57	.45	14000
≤ \$1 million	10	8				
\$1.1 - \$5	13	11				
\$5.1 - \$10	10	8				
\$10.1 - \$25	14	11				
\$25.1 - \$50	11	9				
\$50.1 - \$100	14	11				
\$100.1 - \$200	13	11				
\$200.1 - \$500	12	10				
\$500.1 - \$1000	11	9				
\$1000+	15	12				
Federal Funding (% of budget)						
0	9	8				
under 25%	43	35				
25-49%	19	15				
50-74%	27	22				
75%+	25	20				

Due to rounding not all percentages equal 100

n=123

Since the goal of this research is to identify characteristics across different levels (individual, agency, state) that may affect interactions and choices in the information environment, several state level predictor and control variables are included in the data as well. These are based on the state where each administrator works. This secondary data was collected from various sources and further information can be found in Table 3.2. Table 3.5 displays the distribution of these statistics within the study sample.

Categorizing the respondents based on the dominant political culture of their states, 31% reside in Individualistic cultures while 27% are in Traditionalistic. The largest proportion for this variable are those within Moralistic cultures at 42%.

Governor's Party has been recoded to indicate whether the governor identifies as a Democrat or not, and 45% of the sample work under Democratic governors. Democratic controlled state legislatures are present for 46% of the respondents. One-third of state administrators in the sample worked in states with term limits, and 42% have divided government in their states.

The interest group power categorization shows that only 4% of respondents work in a state with Dominant interest groups. Dominant/Complementary states comprise the majority of the sample at 53%. Complementary states are 29%, and Complementary/Subordinate round out the classification with 14% of the sample.

TABLE 3.5
SAMPLE DESCRIPTIVE STATISTICS: STATE LEVEL MEASUREMENTS

	Freq	%	Mean	SD	Min	Max
State Level						
Population			7.02	8.19	.59	39.15
Southern State	35	28				
Government Ideology			47.06	31.60	3.02	90.08
Political Culture						
Individualistic	38	31				
Traditionalistic	33	27				
Moralistic	52	42				
Governor Democrat	55	45				
Legislature Democrat	56	46				
Divided Government	52	42				
Legislative Professionalism			.19	.12	.023	.63
Term Limits in State	41	33				
Interest Group Power						
Subordinate	-	-				
Complimentary/Subordinate	17	14				
Complimentary	36	29				
Dominant/Complimentary	65	53				
Dominant	5	4				

Due to rounding not all percentages equal 100

n=123

Data Analysis

Three forms of analysis were used to examine the data in this study. First, for the exploratory questions, univariate descriptive statistics are used to describe the interactions with actors in the information environment. Second, for the explanatory questions concerning frequency of *contact* and frequency of *information sharing*, ordinal logistic regression is used to model the effects of the explanatory and control variables in relation to each of the top five actors from the sample's information environment. Third, as a measure of the number of frequent information sources that a state agency head has, *inclusiveness* is a count variable suitable for use in negative binomial regression.

Logit Models for Categorical Outcomes

Ordinal variables are those which can be ordered but do not have consistent or known distances between the categories (Long and Freese 2006). The designation of *contact* frequency and frequency of *information seeking* as occurring daily, weekly, monthly, less than monthly, or never is a variable well suited to this type of analysis. The underlying continuum is important in its rank order and ordinal logistic regression also allows non-normal distribution of the responses (Privitera 2012). Ordinal logistic regression estimates the probability of membership in each category of the dependent variable given the values of the independent variables.

Frequency of Contact

Phase one of the study has one dependent variable measured for five different interactions, one for each of the top five actors most frequently interacted with. This variable takes the same form for each of the five iterations, having 4 ordered levels: frequent (F), monthly (M), less than monthly (L), and never (N). The four categories are thus separated by three thresholds between N to L, L to M, and M to F.

The ordinal logistic regression model estimates the probability of membership by a state administrator in each category of frequency of *contact* with each actor based on the predictor and control variables previously discussed. The odds of these occurrences are

$$\theta_j = \text{prob}(\text{score} \leq j) / \text{prob}(\text{score} > j)$$

where j goes from one to the number of categories minus one. Incorporating this into a model that shows the function of the probabilities results in a linear combination of parameters:

$$\ln \theta_j = \alpha_j - \beta_1 X_1 - \beta_2 X_2 - \dots - \beta_k X_k$$

This model is then used with the specified variables in partial and full models with each of the actor interactions being examined.

Frequency of Information Seeking

The similarity in measurement of the first two dependent variables results in similar statistical models. The second phase of analysis also utilizes ordinal logistic regression since the categorical variable for each of the five most frequent information sources is identical to that in phase one. Analysis for this phase also includes models for each level of variables as well as a full model considering all the predictor and control variables.

Count Model

Linear regression models can result in biased, inconsistent, and inefficient estimates when applied to count outcomes even though sequential, ordered numbers are used in both (Long and Freese 2006). The dependent variable of *inclusiveness* is the number of frequent information sources of each member of the sample. This measure is overdispersed at zero with 27% of respondents not having any frequent outside information sources. A negative binomial regression model is preferred for analysis of *inclusiveness* because of this overdispersion of the number of occurrences of zero. The negative binomial regression includes an error term that does not assume correlation with the independent variables.

The model for this analysis can be written in the following annotated form:

$$\tilde{\mu}_i = \exp(\ln(t_i) + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_k x_{ki})$$

The parameter μ is the mean incidence rate of y per unit of exposure. The mean of y is determined by the exposure time t and a set of k variables, the predictor and control variables

presented above. The t_i represents exposure for a particular observation. Additional models in phase 3 account for individual, agency, and state level variables by themselves as well as in the full model.

While the ordinal logit and negative binomial regression models were appropriate for the dependent variables considered here, the nature of the various levels of measurement at individual, state, and agency levels lends itself to a multilevel model. The cross-classified nature of the data and the small sample size prevented such analysis of the data at this stage, however. An increased sample size with adequate differentiations across levels could support or refute the findings here.

Conclusion

The methods and measures discussed in this chapter align with historical and contemporary research surrounding public administrators and the characteristics and environments of the American states. Analysis of individual, agency, and state characteristics that measure *exposure*, *capacity*, and *competing interests* in relation to occurrences and behaviors within information environments is an unstudied question that has the potential to provide significant information about the business-as-usual actions of state agency heads. The next chapter presents the results of the analytical approaches described above in relation to the three guiding research questions and phases of exploration.

CHAPTER FOUR: FINDINGS AND ANALYSIS

The goal of the research presented here is to aid in understanding of the environments of state bureaucrats and how variations potentially impact behaviors and the inclusion of certain actors in political and administrative processes. Data gathered from the survey instrument and sources described in Table 3.2 will be analyzed based on the guiding questions for this study:

RQ1 *Contact*: Who are state agency heads more likely to have contact with in their information environments? How does the frequency of contact of state agency heads with other political actors vary? What individual, agency, or state level variables impact the frequency of an administrator's contact with others within their environment?

RQ2 *Information Seeking*: Who are state agency heads more likely to seek out information from in their information environment? How frequently do state administrators seek out information from other political actors relative to their programs and/or policy areas? How does information seeking vary based on individual, agency, or state variations?

RQ3 *Inclusiveness*: Do state agency heads vary in their levels of inclusivity in regards to their information environments and information-seeking behaviors across policy and program areas throughout the states? How does this vary based on individual, agency, or state variations?

These guiding questions lead to three distinct phases of analysis. The first examines variations in the frequency of *contact* with other actors by head bureaucrats within the states. From there, one particular kind of contact, *information seeking*, is studied. Finally, the number of frequent sources, the *inclusiveness* of an administrator, is described and explored. Each of these interactions are analyzed for the effects of explanatory and control variables.

Frequency of Contact with Other Political Actors

Exploring Administrative Contacts

Part one of this research project focuses on the frequency of *contact* between state agency heads and other political actors based on individual, agency, and state level variables that measure *exposure*, *capacity*, and *competing interests* within an administrator's environment. The dependent variable, frequency of *contact*, is a measure based on self-reporting by agency heads during completion of the internet survey. This variable does not specify the type of contact or ask about information flow in any way; it is simply a measure of interaction. *Contact* could have many implications about the influence or importance of particular actors, but for this section, it is simply a measure of access and interaction. Respondents indicated whether they never, monthly, less than monthly, weekly, or daily had personal "phone, face-to-face, or email contact" with 21 different actors that comprise the information environment of that state agency head. The weekly and daily categories were combined to form the measure of "frequent" contact. Percentage responses for each combination of actor and frequency of *contact* are shown in Table 4.1

Several actors stand out at the extreme ends for being the most and least frequent contacts of state agency heads. At the lowest end of the spectrum, think tanks (40%) and governors (30%) had the most number of respondents saying that they "never" have contact with them. On the frequent end, three actors clearly have the most contact with state agency heads in the sample collected for this study. The administrators indicated that they consistently interact with other administrators in the same state (78%), clientele (66%), and citizens (59%). One-third or more of the respondents indicated that they interact frequently with a second group comprised of governor's staff, state interest groups, legislators, and legislative staffers. Surprisingly, legislators themselves ranked above their staff members.

TABLE 4.1
FREQUENCY OF CONTACT WITH OTHER ACTORS BY STATE AGENCY HEADS
 Percentage Indicating Contact Category

	Never	Less than Monthly	Monthly	Frequent (Daily/Weekly)	Total
Administrator-same state	0	5	17	78	100%
Clientele	0	12	22	66	100%
Citizens	3	14	24	59	100%
Governor's Staff	6	26	21	48	100%
Interest Group-state	3	21	40	36	100%
Legislator	3	34	28	35	100%
Legislator's Staff	3	37	29	32	100%
Nonprofit-state	2	33	38	27	100%
Professional Association	3	37	35	26	100%
Policy Advocate-state	4	33	41	23	100%
Nonprofit-local	1	45	32	22	100%
Local Official	3	44	34	18	100%
Administrator-different state	4	50	29	17	100%
Administrator-national	7	47	33	13	100%
National Official	12	59	22	7	100%
Governor	30	39	24	7	100%
Interest Group-national	11	63	22	5	100%
Academic	11	60	25	4	100%
Nonprofit-national	9	67	21	4	100%
Policy Advocate-national	15	63	21	2	100%
Think Tank	40	46	13	2	100%

Less than 8% of respondents indicated frequent contact with national officials, national interest groups, national nonprofits, national policy advocates, governors, academics, or think tanks. While modeling the interactions with all the information environment actors could provide interesting information, only the top five most frequent contacts will be used for the next stage of analysis. The main area of interest for this study is the frequent actors within the information environment and the factors that contribute to increasing contact. Examining all the relationships is beyond the scope of this study but an ideal path for future inquiry.

Explaining Variations in Contact

The percentages presented in Table 4.1 demonstrate that not all actors are created equal when it comes to contact with state agency heads. In fact, some actors that theory and literature suggest as being influential towards state bureaucrats, for example governors, appear to have little contact with the men and women running those agencies. This highlights the importance of the first exploratory research question: who are state agency heads more likely to have *contact* with in their information environments and how does the frequency of contact of state agency heads with other actors vary [RQ1]? There are three main explanatory hypotheses for the variation in agency head contacts in their information environment:

H1: *Exposure* of state administrators to other actors will increase how frequently they have contact with other political actors in their information environment.

H2: Greater agency *capacity* will increase how frequently the heads of that agency are in contact with other political actors in their information environment.

H3: *Competing interests* in the state will increase the frequency that the heads of agencies within that state have contact with other political actors in their information environment.

Predictor and control variables at the individual, agency, and state levels presented in Chapters 2 and 3 will be used in the ensuing models. There is the potential for wide variation in explanatory variables across the actors that are available in the information environment. However, a uniform model will be used across all five of the most frequent contacts to highlight any similarities or differences in the explanatory effects on different actor contacts. Partial models containing individual, agency, and state level variables will be presented along with the full model.

For the dependent variable of frequency of *contact*, several characteristics will be examined for their potential influence. These variables all attempt to capture increased *exposure*,

increased *capacity*, or increased *competing interests* that may increase frequency of *contact* with entities in the information environment. For *exposure* it is hypothesized that:

- H1a: More years worked in the state will increase frequency of contact.
- H1b: Employment in the private sector will increase frequency of contact.
- H1c: Employment in the nonprofit sector will increase frequency of contact.
- H1d: Membership in a professional organization will increase frequency of contact.

For *capacity*, the variables of interest are:

- H2a: Larger staffs will increase frequency of contact.
- H2b: Greater budgetary resources will increase frequency of contact.

And finally, the variables hypothesized to influence *contact* through the presence of *competing interests* within the state are:

- H3a: Being appointed by a board/commission will increase frequency of contact.
- H3b: Frequency of contact for some agencies will be greater than others.
- H3c: Budgets comprised of greater percentages of federal funds will increase frequency of contact of the heads of those agencies.
- H3d: The presence of divided government in a state will increase frequency of contact with other actors for state administrators in that state.
- H3e: Greater legislative professionalism will increase frequency of contact.

Results

Ordered logit estimates were ran in several variations to test the hypotheses that *exposure*, *capacity*, or *competing interest* variables influence the increased frequency of contact that a state agency head has with same-state administrators, clientele, citizens, gubernatorial staffers, and state interest groups. For initial comparability and investigation, models are presented for each possible contact source based on individual characteristics, agency features, state variables, individual and agency traits combined, and then the full model with all factors. Table 4.2 presents these findings. The partial models are included to examine any changes in significance as different levels of variables are introduced.

After presenting the tables for each of the five most frequent actors, individual findings for each actor will be discussed as well as predicted probabilities for the different outcome categories based on significant indicators. Then, the five full models will be presented together to survey the similarities and differences across the five most frequent contacts of state agency heads.

TABLE 4.2
FREQUENCY OF CONTACT MODELS WITH TOP FIVE ACTORS:
FREQUENCY OF CONTACT WITH ADMINISTRATORS IN SAME STATE

	Model 1 Individual Level	Model 2 Agency Level	Model 3 State Level	Model 4 Ind. and Agency	Model 5 FULL MODEL
<i>Administrator Level</i>					
Governor appointed	-.17 (.64)			.02 (.81)	-.33 (.99)
Board/Commission appointed	-1.40** (.68)			-1.65* (.87)	-2.16** (1.05)
Years employed in State	.02 (.03)			.02 (.03)	.06 (.04)
Employed in private sector prior	.89* (.53)			1.02* (.58)	1.22 (.77)
Employed in nonprofit sector prior	1.20** (.60)			1.34** (.64)	2.09** (.92)
Liberal/Democrat affiliation	.65 (.52)			.69 (.56)	.69 (.71)
Female	-.14 (.55)			-.02 (.58)	.00 (.71)
Minority	-.09 (.92)			-.18 (.98)	-.76 (1.12)
Age	-.01 (.03)			-.01 (.04)	-.02 (.04)
Member of a Professional Org.	1.03** (.52)			1.40** (.65)	2.18*** (.85)
<i>Agency Level</i>					
Economic Development		-2.31*** (.88)		-3.21*** (1.03)	-3.83*** (1.26)
Education and Training		-1.79** (.84)		-1.44 (1.04)	-1.45 (1.22)
Environment/Energy Agency		-2.50*** (.88)		-2.36** (.97)	-2.74** (1.12)
Staff Size		-.30 (.25)		-.19 (.33)	-.07 (.44)
Budget Size		-.01 (.12)		-.01 (.15)	-.02 (.21)
Federal Fiscal Involvement		.09 (.20)		-.07 (.24)	-.15 (.29)
<i>State Level</i>					
Population Size			-.07 (.05)		-.03 (.07)
Southern State			.94 (.70)		.59 (.93)
Government Ideology			.00 (.01)		-.02 (.01)
Legislative Professionalism			7.64** (3.89)		8.03 (5.91)
Divided Government			.75 (.57)		.99 (.79)
Political Culture			-.65 (.31)		-1.45*** (.58)
Interest Group Power			-.19 (.32)		-.99* (.52)
	n=111 X ² (10)=16.81 R ² = .1176	n=119 X ² (6)=14.09 R ² = .0921	n=119 X ² (7) =11.75 R ² = .0768	n=111 X ² (16) 31.42 R ² = .2199	n=111 X ² (23) =51.85 R ² = .3629

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

TABLE 4.2 CONTINUED
FREQUENCY OF CONTACT MODELS WITH TOP FIVE ACTORS:
FREQUENCY OF CONTACT WITH CLIENTELE

	Model 1 Individual Level		Model 2 Agency Level		Model 3 State Level		Model 4 Ind. & Agency		Model 5 FULL MODEL	
<i>Administrator Level</i>										
Governor appointed	1.30**	(.53)					1.90***	(.66)	2.10***	(.73)
Board/Commission appointed	.20	(.58)					.28	(.76)	.55	(.82)
Years employed in State	.03	(.02)					.04	(.03)	.04	(.03)
Employed in private sector prior	.05	(.47)					-.24	(.50)	-.23	(.52)
Employed in nonprofit sector prior	.68	(.48)					.60	(.50)	.66	(.55)
Liberal/Democrat affiliation	.34	(.46)					.39	(.48)	.63	(.52)
Female	-.96**	(.47)					-1.12**	(.49)	-.90*	(.50)
Minority	1.57	(1.11)					1.85	(1.20)	1.94	(1.26)
Age	-.04	(.03)					-.05*	(.03)	-.06*	(.03)
Member of a Professional Org.	.05	(.47)					-.03	(.53)	.10	(.57)
<i>Agency Level</i>										
Economic Development			-.67	(.59)			-.93	(.69)	-1.28*	(.75)
Education and Training			-.19	(.54)			-.07	(.71)	-.34	(.74)
Environment/Energy Agency			-.54	(.55)			-1.33*	(.72)	-1.65**	(.75)
Staff Size			.04	(.20)			.05	(.25)	.17	(.28)
Budget Size			.01	(.10)			-.19	(.12)	-.27*	(.14)
Federal Fiscal Involvement			-.13	(.16)			.04	(.21)	-.02	(.22)
<i>State Level</i>										
Population Size					.02	(.04)			.03	(.05)
Southern State					.06	(.58)			-.41	(.77)
Government Ideology					-.01	(.01)			-.02**	(.01)
Legislative Professionalism					-.14	(2.83)			-.81	(3.55)
Divided Government					1.02**	(.48)			.83	(.55)
Political Culture					-.17	(.26)			.02	(.32)
Interest Group Power					.20	(.30)			.32	(.38)
	n=106		n=115		n=115		n=106		n=106	
	X ² (10)=19.10		X ² (6)=2.33		X ² (7)=5.95		X ² (16) 26.03		X ² (23)=33.66	
	R ² = .1051		R ² = .0118		R ² = .0300		R ² = .1433		R ² = .1853	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

TABLE 4.2 CONTINUED
FREQUENCY OF CONTACT MODELS WITH TOP FIVE ACTORS:
FREQUENCY OF CONTACT WITH CITIZENS

	Model 1 Individual Level		Model 2 Agency Level		Model 3 State Level		Model 4 Ind. and Agency		Model 5 FULL MODEL	
<i>Administrator Level</i>										
Governor appointed	1.27***	(.49)					1.86***	(.58)	2.39***	(.68)
Board/Commission appointed	-.16	(.53)					.07	(.67)	.27	(.78)
Years employed in State	.02	(.02)					.03	(.02)	.05**	(.03)
Employed in private sector prior	.01	(.43)					-.11	(.44)	-.14	(.49)
Employed in nonprofit sector prior	.85*	(.44)					.80*	(.45)	1.44***	(.56)
Liberal/Democrat affiliation	.30	(.41)					.37	(.43)	.31	(.51)
Female	-.09	(.42)					-.16	(.43)	-.22	(.48)
Minority	-.15	(.71)					.03	(.73)	.07	(.80)
Age	-.04	(.03)					-.05*	(.03)	-.09***	(.03)
Member of a Professional Org.	.38	(.42)					.33	(.45)	.34	(.51)
<i>Agency Level</i>										
Economic Development			.17	(.58)			-.09	(.66)	-.77	(.75)
Education and Training			.03	(.48)			.20	(.61)	.02	(.68)
Environment/Energy Agency			-.27	(.51)			-.64	(.60)	-1.42**	(.72)
Staff Size			.02	(.19)			-.01	(.21)	.30	(.25)
Budget Size			-.04	(.09)			-.20*	(.11)	-.39***	(.14)
Federal Fiscal Involvement			.02	(.15)			.15	(.18)	.18	(.21)
<i>State Level</i>										
Population Size					-.05	(.04)			-.09*	(.05)
Southern State					1.08*	(.58)			1.59**	(.76)
Government Ideology					-.01	(.01)			-.03***	(.01)
Legislative Professionalism					4.54	(3.03)			8.39**	(4.12)
Divided Government					-.09	(.44)			-.48	(.51)
Political Culture					-.38	(.24)			-.76**	(.32)
Interest Group Power					-.85**	(.33)			-1.50***	(.47)
	n=111 X ² (10)=16.78 R ² = .0747		n=120 X ² (6)=.76 R ² = .0031		n=120 X ² (7)=13.32 R ² = .0543		n=111 X ² (16) 23.35 R ² = .1039		n=111 X ² (23)=51.27 R ² = .2281	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

TABLE 4.2 CONTINUED
FREQUENCY OF CONTACT MODELS WITH TOP FIVE ACTORS:
FREQUENCY OF CONTACT WITH GOVERNOR'S STAFF

	Model 1 Individual Level		Model 2 Agency Level		Model 3 State Level		Model 4 Ind. and Agency		Model 5 FULL MODEL	
<i>Administrator Level</i>										
Governor appointed	2.97***	(.54)					2.88***	(.63)	2.72***	(.66)
Board/Commission appointed	1.73***	(.54)					1.34**	(.63)	1.35**	(.68)
Years employed in State	-.04**	(.02)					-.04	(.02)	-.04	(.03)
Employed in private sector prior	-.32	(.44)					-.31	(.46)	-.22	(.48)
Employed in nonprofit sector prior	.22	(.43)					.15	(.45)	.33	(.49)
Liberal/Democrat affiliation	-.05	(.41)					-.05	(.43)	-.18	(.49)
Female	-.28	(.41)					-.30	(.43)	-.27	(.45)
Minority	-.30	(.73)					-.32	(.77)	-.07	(.82)
Age	-.01	(.03)					-.02	(.03)	-.02	(.03)
Member of a Professional Org.	.13	(.42)					.08	(.46)	.45	(.50)
<i>Agency Level</i>										
Economic Development			.77	(.55)			.49	(.66)	.44	(.50)
Education and Training			.87*	(.49)			.68	(.61)	.44	(.69)
Environment/Energy Agency			-.39	(.51)			-.63	(.61)	-.61	(.64)
Staff Size			.20	(.19)			.28	(.24)	.37	(.25)
Budget Size			.19**	(.09)			-.03	(.11)	-.04	(.12)
Federal Fiscal Involvement			-.48***	(.16)			-.30*	(.18)	-.40**	(.19)
<i>State Level</i>										
Population Size					.08**	(.04)			.11**	(.05)
Southern State					.00	(.48)			-.09	(.66)
Government Ideology					.00	(.01)			-.00	(.00)
Legislative Professionalism					-2.91	(2.54)			-6.44*	(3.33)
Divided Government					.98**	(.43)			1.03*	(.53)
Political Culture					-.24	(.22)			-.06	(.30)
Interest Group Power					-.04	(.27)			-.18	(.38)
	n=112 X ² (10)=51.75 R ² = .1948		n=121 X ² (6)=29.33 R ² = .1017		n=121 X ² (7)=12.46 R ² = .0432		n=112 X ² (16) 61.88 R ² = .2329		n=112 X ² (23) =72.65 R ² = .2734	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

TABLE 4.2 CONTINUED
FREQUENCY OF CONTACT MODELS WITH TOP FIVE ACTORS:
FREQUENCY OF CONTACT WITH STATE INTEREST GROUPS

	Model 1 Individual Level		Model 2 Agency Level		Model 3 State Level		Model 4 Ind. and Agency		Model 5 FULL MODEL	
<i>Administrator Level</i>										
Governor appointed	.76*	(.45)					1.21**	(.52)	1.41**	(.57)
Board/Commission appointed	-.91*	(.51)					-.89	(.59)	-.80	(.63)
Years employed in State	.02	(.02)					.03	(.02)	.04*	(.02)
Employed in private sector prior	-.57	(.41)					-.66	(.42)	-.66	(.45)
Employed in nonprofit sector prior	.62	(.40)					.54	(.41)	.73	(.45)
Liberal/Democrat affiliation	.63	(.39)					.62	(.40)	.81*	(.45)
Female	-.30	(.40)					-.37	(.41)	-.54	(.45)
Minority	-.99	(.64)					.80	(.68)	-.93	(.70)
Age	-.05**	(.03)					-.06**	(.03)	-.08***	(.03)
Member of a Professional Org.	-.07	(.40)					-.22	(.43)	-.17	(.48)
<i>Agency Level</i>										
Economic Development			.05	(.57)			-.07	(.61)	-.35	(.65)
Education and Training			-.09	(.48)			.25	(.56)	.44	(.60)
Environment/Energy Agency			-1.05**	(.51)			-1.16**	(.57)	-1.47**	(.63)
Staff Size			.08	(.18)			-.00	(.21)	.17	(.23)
Budget Size			-.06	(.09)			-.15	(.10)	-.27**	(.12)
Federal Fiscal Involvement			.17	(.15)			.12	(.17)	.18	(.18)
<i>State Level</i>										
Population Size					-.00	(.04)			-.01	(.04)
Southern State					.59	(.51)			.25	(.59)
Government Ideology					-.01	(.01)			-.02***	(.01)
Legislative Professionalism					4.19	(2.72)			6.39*	(3.42)
Divided Government					.62	(.42)			.49	(.47)
Political Culture					-.00	(.24)			-.08	(.27)
Interest Group Power					-.52*	(.29)			-.89**	(.36)
	n=111 X ² (10)=19.55 R ² = .0761		n=113 X ² (6)=8.56 R ² = .0327		n=113 X ² (7) =11.91 R ² = .0454		n=111 X ² (16) 29.04 R ² = .1130		n=111 X ² (23) =47.05 R ² =.1831	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

Administrators in the Same State

The actor external to the agency that state agency heads interact with most frequently is other administrators in their own state. Of the sample, 78% reported frequent contact with these members of the information environment. Table 4.2 shows the statistical models for the relationship between predictor and control variables and *contact* frequency with same-state administrators.

When examining administrator-only characteristics in relation to frequency of contact with same state administrators, four variables exhibited significance at $p < .10$. Being appointed by a Board or Commission, being a member of a professional organization, and having prior experience in either the private or nonprofit sectors all impact frequency of contact with other same-state administrators.

In the agency only model, the type of agency significantly affected the level of contact with same-state administrators. Administrators in each of the types of agencies indicated have significantly less contact than the base category of Income Security and Social Services. Staff size, budget size, and federal involvement showed no significant effect. When considering state variables only, legislative professionalism and interest group power both showed significance but in opposite directions. Increased legislative professionalism in the state corresponds with increased contact with same-state administrators while increasing interest group power is negatively associated with contact frequency.

The full model that incorporates all variables had three variables lose significance and one variable gain. Employment in the private sector, Education agencies, and legislative professionalism all became insignificant when the variables were included in the full model.

Conversely, the political culture of the state shows significance at the $p < .001$ level when considering all variables.

To understand how the significant variables may be influencing the contact of state agency heads with other administrators in their state, predicted probabilities for each outcome category were ran for the significant indicators with all other variables held at their means. The results of this analysis are presented in Table 4.3

TABLE 4.3
PREDICTED PROBABILITIES OF STATE AGENCY HEAD CONTACT FREQUENCY
WITH ADMINISTRATORS IN SAME STATE^A

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never ^B
EXPOSURE				
Predicted Probabilities Based on Prior Employment in Nonprofit Sector				
Employed in Nonprofit	.98	.02	.00	
Not Employed in Nonprofit	.84	.15	.01	
Predicted Probabilities Based on Professional Organization Membership				
Member of Prof. Org.	.96	.04	.00	
Not Member of Prof Org.	.73	.24	.03	
COMPETING INTERESTS				
Predicted Probabilities Based on Agency Type				
Econ. Dev. Agency*	.33	.52	.15	
Education Agency	.80	.18	.02	
Envir./Energy Agency*	.60	.35	.05	
Income Sec./Social Services Agency	.99	.01	.00	
Predicted Probabilities Based on Appointment by Board/Commission				
Appointed by Board/Comm.	.68	.28	.04	
Not Appointed by Board/Comm.	.95	.05	.00	
CONTROL				
Predicted Probabilities Based on Political Culture				
Individualistic	.98	.02	.00	
Traditionalistic	.93	.06	.01	
Moralistic	.77	.21	.02	
Predicted Probabilities Based on Interest Group Power				
Dominant	.73	.24	.03	
Dominant/Complimentary	.88	.11	.01	
Complimentary	.95	.05	.00	
Complimentary/Subordinate	.98	.02	.00	

^AChange in predicted probabilities of each outcome category for contact frequency for changing values of each significant independent variable, while holding all other independent variables constant at their means.

^BNo respondents indicated that they “never” have contact with administrators in the same state.

* Significant dummy variable in Full Model

Predicted probabilities show the likelihood of indicating one of the frequency outcome categories based on the selected variable with all other variables held at their means. No respondents indicated that they “never” have contact with administrators in the same state, thus Table 4.3 shows the likelihood of an administrator indicating frequent, monthly, or less than monthly contact with a same-state administrator based on the given variable specifications. For frequency of *contact* with same-state administrators, the six significant variables in the full model include both predictor and control variables. None of the predictor variables associated with *capacity* exhibited a significant effect on *contact* with administrators in the same state. Two of the *exposure* variables were significant and in the hypothesized positive direction. Two of the *competing interest* variables were significant but one was in the opposite direction of the hypothesized relationship.

State agency heads who have experience in the nonprofit sector and are members of professional organizations are more likely to have frequent contact with other administrators in the same state versus those that do not have these attributes. This supports the idea that outside experience and membership in linking organizations can either provide actual contacts or generally encourage contact with other actors.

The probability of frequent contact with same-state administrators is 95% for those state agency heads who are *not* appointed by a board or commission. Being appointed by a board or commission indicates a 68% chance of having frequent contact. Agency heads who serve at the behest of a board or commission are less likely to have frequent contact with same state administrators, contrary to the presented hypothesis. Competing interests and completing political principals may encourage less contact rather than more, supporting the argument that administrators try to remain neutral by not engaging external to the agency.

The largest disparity in predicted probabilities for frequent contact is revealed when examining the functional categories of the bureaucrats surveyed for this research. Directors of Income Security/Social Services agencies and Education agencies are highly likely to have frequent contact with other state administrators with all else held constant. Economic Development and Environment/Energy agency heads are less likely. Previous research on the variability of agency environments based on policy area is supported by these findings.

Control variables related to political culture and interest group power exhibited significance in the same-state administrator model. Administrators in Moralistic states or states with dominant interest groups are significantly less likely to have frequent contact with their state counterparts.

Frequency of Contact with Clientele

Public administrators in general are assumed to have frequent contact with the clientele they serve. State agency heads however, the individuals responsible for overseeing policy, programs, and personnel, are not presumed to be constantly interacting with the population the agency is serving. The distribution in Table 4.1 nonetheless indicates that state agency heads *do* have frequent contact with the clientele they serve. The partial models displayed in Table 4.2 suggest that individual and state level predictors of frequency of *contact* with clientele hold little explanatory power. In the full model however, several variables suggest that a combination of administrator, agency, and state level metrics do offer insight when considered together.

At the individual level, governor appointment and gender influence frequency of contact with clientele. Agency level variables on their own showed no significance. Once combined

with individual and state control and predictors, two types of agencies as well as budget size reach significance to explain some of the variation in *contact* frequency.

When state level variables were examined by themselves, only divided government seemed to impact frequency of *contact* in a positive direction. When considered in the full model however, this variable loses significance and instead government ideology (more liberal) shows to significantly decrease contact frequency with clientele. Table 4.4 shows the predicted probabilities for all significant predictor and control variables from the full model in Table 4.2 for frequency of *contact* with clientele.

TABLE 4.4
PREDICTED PROBABILITIES OF STATE AGENCY HEAD CONTACT FREQUENCY WITH CLIENTELE^A

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never ^B
CAPACITY				
Predicted Probability Based on Budget				
Less than \$1 mil	.90	.08	.02	
\$10-\$25 mil	.80	.16	.04	
\$100-\$200 mil	.64	.28	.09	
Over \$1,000 mil	.44	.39	.17	
COMPETING INTERESTS				
Predicted Probability Based on Agency Type				
Economic Development*	.47	.38	.15	
Education/Training	.66	.26	.08	
Environment/Energy*	.42	.40	.18	
Income Security/Social Services	.84	.13	.03	
CONTROL				
Predicted Probability Based on Appointment				
Appointed by Governor	.90	.09	.01	
Not Appointed by Governor	.52	.35	.13	
Predicted Probability Based on Gender				
Female	.60	.30	.10	
Male	.79	.17	.04	
Predicted Probability Based on Age				
35 years old	.89	.09	.02	
55 years old	.72	.22	.06	
72 years old	.49	.37	.14	
Predicted Probability Based on Government Ideology				
NOMINATE score 4	.85	.12	.03	
NOMINATE score 45.7	.72	.22	.06	
NOMINATE score 90	.52	.35	.13	

^AChange in predicted probabilities of each outcome category for contact frequency for changing values of each significant independent variable, while holding all other independent variables constant at their means.

^BNo respondents indicated that they “never” have contact with clientele.

* Significant dummy variable in Full Model

None of the predictor variables measuring *exposure* have an influence on frequency of *contact* with clientele. One of the *capacity* and one of the *competing interests*' variables had influence in the full model. Several control variables displayed significance for explaining *contact* in this model, however.

The *capacity* measurement of budget has a significant but opposite directional effect. Administrators with larger budgets are less likely to have contact with clientele. This suggests that the possible competing hypotheses for budget capacity may be more accurate or reflect pass through money as opposed to a measure of resources.

Again, the type of agency that an administrator heads is seen to affect frequency of contact with this particular actor. Economic Development and Environment/Energy agency heads have predicted probabilities of 47% and 4%² for frequent *contact* with clientele compared to 66% for Education/Training and 84% for Income Security/Social Services. Government ideology indicates that head administrators in more liberal states (higher numerical values) are actually predicted to have less frequent contact with clientele than those in more conservative states.

Being a governor-appointed agency head indicates a significantly higher predicted probability of frequent contact with clientele versus any other appointment type. Interestingly, being a female agency head reduces the probability of frequent contact with clientele. Younger agency heads are more likely to have frequent contact with clientele.

These results raise several interesting questions. Why would having more liberal state policies translate to less contact with clientele for state agency heads? Why do women administrators have less frequent contact with clientele than men? Lastly, from a normative standpoint, should agency heads be in frequent contact with the clientele their agency serves or should that be left in the purview of lower level personnel? While beyond the scope of this paper, they are worth noting as future avenues of exploration.

Citizens

The ordinal logistic regressions that model frequency of *contact* with citizens based on administrator *exposure*, agency *capacity*, and state *competing interests* are displayed in Table 4.2. The full model shows that four individual level variables, two agency level variables, and six state level variables exude influence ($p < .10$) over a head administrator's frequency of *contact* with general citizens. Partial models for each of these level of variables alone contained very few, if any, significant variables. The increased level of significance and increased number of significant variables suggest that the full model more accurately controls for what is occurring in each administrator's environment. For clarification of the impact of the variables on *contact* with citizens, Table 4.5 presents predicted probabilities for the significant variables from the full model.

TABLE 4.5
PREDICTED PROBABILITIES FOR STATE AGENCY HEAD CONTACT FREQUENCY WITH CITIZENS^A

EXPOSURE	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
Predicted Probability Based on Years Employed in State Government				
1 year worked for state	.43	.41	.15	.01
17.4 years worked for state	.65	.28	.07	.00
40 years worked for state	.88	.11	.02	.00
Predicted Probability Based on Prior Experience in Nonprofit				
Employed in Nonprofit	.82	.15	.03	.00
Not employed in Nonprofit	.52	.36	.11	.01
CAPACITY				
Predicted Probability Based on Budget				
Less than \$1 mil	.92	.07	.01	.00
\$10-\$25 mil	.77	.19	.04	.00
\$100-\$200 mil	.51	.37	.12	.01
Over \$1,000 mil	.24	.44	.29	.02
COMPETING INTERESTS				
Predicted Probability Based on Agency Type				
Economic Development	.50	.37	.12	.01
Education	.65	.27	.07	.00
Environment/Energy*	.40	.42	.17	.01
Income Security/Social Services	.75	.20	.04	.00
Predicted Probability Based on Legislative Professionalism				
Squire's Index=.030	.33	.44	.22	.02
Squire's Index=.189	.65	.28	.07	.00
Squire's Index=.620	.99	.01	.00	.00
Predicted Probability Based on Appointment				
Appointed by Governor	.89	.09	.02	.00
Not Appointed by Governor	.42	.41	.16	.01
CONTROL				
Predicted Probability Based on Age				
35 years old	.92	.06	.01	.00
55 years old	.66	.27	.06	.00
72 years old	.29	.45	.25	.02
Predicted Probability Based on Population				
Population=.6 mil	.77	.19	.04	.00
Population=7 mil	.65	.28	.07	.00
Population=35 mil	.13	.38	.45	.05
Predicted Probability Based on Southern State				
Southern State	.87	.11	.02	.00
Non-Southern State	.57	.33	.09	.01
Predicted Probability Based on Government Ideology				
NOMINATE score 4	.85	.12	.02	.00
NOMINATE score 45.7	.65	.28	.07	.00
NOMINATE score 90	.36	.44	.19	.01

TABLE 4.5 CONTINUED
PREDICTED PROBABILITIES FOR STATE AGENCY HEAD CONTACT FREQUENCY WITH CITIZENS^A

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
Predicted Probability Based on Interest Group Power				
Dominant	.16	.41	.39	.04
Dominant/Complimentary	.47	.39	.13	.01
Complimentary	.80	.17	.03	.00
Complimentary/Subordinate	.95	.05	.01	.00
Predicted Probability Based on Political Culture				
Individualistic	.81	.15	.03	.00
Traditionalistic	.67	.26	.06	.00
Moralistic	.49	.38	.12	.01

^AChange in predicted probabilities of each outcome category for contact frequency for changing values of each significant independent variable, while holding all other independent variables constant at their means.

* Significant dummy variable in Full Model

At least one of the hypothesized predictor variables in each category obtained appropriate levels of significance in this full model. *Exposure* variables of years employed in the state and employment in the nonprofit sector were significant and in the hypothesized direction. The *competing interest* variables of agency type and legislative professionalism indicated significant effects. The *capacity* variable of budget was in the opposite direction similar to the clientele model.

In considering the changes across levels of predicted probability of outcome categories, experience in state government and nonprofit experience both result in a higher probability of having self-identified “frequent” contact with citizens, holding all other variables constant at their means. Both of these variables are in the hypothesized direction which supports the view that exposure through experience increases outside contacts.

Environment/Energy state agency heads again have the least probability of having frequent contact with yet another potential actor in the information environment. While the other agency types were not significant, income security/social services is again the most likely to have frequent contact.

Similar to contact frequency with clientele, increasing budget size is negatively associated with frequent contact with citizens contrary to the idea of an increased budget increasing capacity and thus availability to outside actors. This suggests that the alternative consideration about budget, that more money insulates administrators from outside sources, may be correct.

This model for frequency of *contact* with citizens has the most explanatory variables at the state level of all the models considered so far. At the state level, every independent variable except for divided government showed a level of significance that offers some degree of explanatory power for citizen contact frequency. Larger population size and more liberal state level policies and opinions negatively affect the frequency of contact with citizens by state agency heads. For example, an administrator in a state of 3 million people has a 73% probability of indicating frequent contact whereas an administrator in a state with a population of 35 million only has only 13%. State agency heads in Southern states are more likely to have frequent contact as well as those in Individualistic political cultures. Having dominant state level interest groups shows a large decrease in the probability of frequent citizen contact as well as a less professionalized legislature.

The opposite directions of age and years of experience in state government warrant further study to understand how that plays out in practical applications. Also, do larger budgets increase the demands on a state agency head's time instead of increasing general capacity? Or could increased budgets simply allow for more staff to handle the contacts with outside actors? Is frequent contact with citizens ideal for state agency heads or should they be insulated from the political pressures that this might entail?

Governor's Staff

When thinking about the application of principal-agent theory to state level bureaucracy, the obvious relationship is that between the elected executive – the governor – and the heads of the state agencies he or she oversees. It was anticipated that the governor's staff would be among the most frequent contacts for state agency heads. Even though it is included as one of the top five in *contact* frequency, these actors fall significantly behind the previous three discussed. Less than half (48%) of the sample indicated that they have frequent contact with members of the governor's staff, a full 11 percentage points behind the next closest and almost 30% behind the most frequent (same-state administrators). Partial and full models illustrating the effects of the predictor and control variables were displayed in Table 4.2. Predicted probabilities for significant variables from the full model are shown in Table 4.6.

TABLE 4.6
PREDICTED PROBABILITIES FOR STATE AGENCY HEAD CONTACT FREQUENCY WITH
GOVERNOR'S STAFF^A

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
COMPETING INTERESTS				
Predicted Probability Based on Appointment				
Appointed by Governor	.81	.14	.05	.00
Appointed by Board/Commission	.70	.20	.09	.01
Other Method	.17	.28	.49	.05
Predicted Probability Based on Federal Fiscal Involvement				
75% + of budget	.36	.34	.28	.02
50-74% of budget	.46	.32	.21	.01
25-49% of budget	.56	.28	.15	.01
<25% of budget	.66	.23	.11	.01
No federal funds	.74	.18	.08	.00
Predicted Probability Based on Legislative Professionalism				
Squire's Index=.030	.70	.21	.09	.00
Squire's Index=.189	.45	.32	.22	.01
Squire's Index=.620	.05	.12	.65	.18
Predicted Probability Based on Divided Government				
Divided Govt	.60	.26	.13	.01
Unified Govt	.35	.34	.30	.02

TABLE 4.6 CONTINUED
PREDICTED PROBABILITIES FOR STATE AGENCY HEAD CONTACT FREQUENCY WITH
GOVERNOR'S STAFF^A

CONTROL	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
Predicted Probability Based on Population				
Population=.6 mil	.29	.33	.35	.03
Population=7 mil	.45	.32	.22	.01
Population=35 mil	.94	.04	.01	.00

^AChange in predicted probabilities of each outcome category for contact frequency for changing values of each significant independent variable, while holding all other independent variables constant at their means.

Four of the *competing interest* variables show an influence on frequency of *contact* with the governor's staff. Being appointed by a board/commission and divided government both have significant positive effects. Federal involvement has an influence but in a negative direction, decreasing the likelihood of frequent contact with the governor's staff. This intuitively makes sense as the governor's staff (and the governor) are different than general outside sources and may see decreases when all the others would see an increase. Legislative professionalism has the opposite effect for governor's staff, as well. If a governor's staff member is seen as a proxy of the governor herself, the opposite directional effect makes sense for this particular actor. A more professionalized legislature increases competing political interests in the state. This is hypothesized to increase contact with more actors generally but is logical to decrease direct contact with the executive branch.

Administrators have a higher probability of having frequent contact with the governor's staff if a state agency head was appointed by a board/commission or the governor compared to all other methods combined. Appointment by Board or Commission translates to a 70% probability of having frequent contact with these actors. The interesting point to note here, however, is that ascending to agency head by any other method correlates to "rare" contact with a governor's staff.

Increasing federal involvement in an agency, measured by percentage of the agency budget comprised of federal funds, translates to decreased contact with gubernatorial staffers. The need to meet federal expectations and guidelines may thus leave less room for contact (or concern) for a governor's agenda.

At the state level, larger populations, less professional legislatures, and divided government translate to the probability of more frequent contact with the governor's staff. From a structural standpoint, if the desire is for a state agency (and by default the agency director) to be responsive to the governor and his or her staff, characteristics such as legislative professionalism and appointment type can reflect the preferences of the public.

State Interest Groups

State interest groups were the fifth most frequently contacted actor from state agency heads' information environments. Similar to some of the other models shown already, the full model in Table 4.2 incorporating individual, agency, and state level indicators exhibits more significant variables than any of the partial models. One *exposure* and one *capacity* predictor variable each achieved appropriate levels of significance while two *competing interest* variables did. These are detailed in Table 4.7 along with control variables to show the predicted probabilities for the likelihood of indicating each level of *contact* frequency with state interest groups.

TABLE 4.7
PREDICTED PROBABILITIES FOR STATE AGENCY HEAD CONTACT FREQUENCY
WITH STATE INTEREST GROUPS^A

EXPOSURE	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
Predicted Probability Based on Years Employed in State				
1 year worked for state	.17	.53	.28	.02
17.4 years worked for state	.30	.53	.16	.01
40 years worked for state	.53	.40	.07	.00
CAPACITY				
Predicted Probability Based on Budget				
Less than \$1 mil	.59	.35	.06	.00
\$10-\$25 mil	.39	.49	.12	.01
\$100-\$200 mil	.22	.54	.22	.02
Over \$1,000 mil	.11	.47	.38	.03
COMPETING INTERESTS				
Predicted Probability Based on Agency Type				
Economic Development	.24	.54	.21	.01
Education	.37	.50	.13	.01
Environment/Energy*	.12	.49	.36	.03
Income Security/Social Services	.36	.50	.13	.01
Predicted Probability Based on Legislative Professionalism				
Squire's Index=.030	.13	.50	.34	.03
Squire's Index=.189	.30	.53	.17	.01
Squire's Index=.620	.87	.12	.01	.00
CONTROL				
Predicted Probability Based on Appointment				
Appointed by Governor	.50	.42	.08	.00
Not Appointed by Governor	.20	.53	.25	.02
Predicted Probability Based on Political Party Affiliation				
Democrat/Liberal Leaning	.38	.49	.12	.01
Republican/Conservative	.21	.54	.23	.02
Predicted Probability Based on Age				
35 years old	.67	.29	.04	.00
55 years old	.30	.52	.16	.01
72 years old	.10	.46	.40	.04
Predicted Probability Based on Government Ideology				
NOMINATE score 4	.52	.40	.07	.00
NOMINATE score 45.7	.30	.53	.17	.01
NOMINATE score 90	.13	.50	.34	.03
Predicted Probability Based on Interest Group Power				
Dominant	.10	.45	.41	.04
Dominant/Complimentary	.21	.54	.23	.02
Complimentary	.40	.48	.11	.01
Complimentary/Subordinate	.62	.33	.05	.00

^AChange in predicted probabilities of each outcome category for contact frequency for changing values of each significant independent variable, while holding all other independent variables constant at their means.

* Significant dummy variable in Full Model

Increased experience within the state again increases the likelihood of frequent contact with this information environment actor. Budget size also again shows the reverse effect on *contact* frequency. Larger budgets may be a measure of agency capacity but that does not translate to contact frequency with interested groups outside of the agency.

For *competing interests*, the only significant type of agency in this model is Environment/Energy. Holding all other variables even, state administrators in charge of these agencies have only a 12% probability of having frequent contact with a state interest group. Several questions are raised by the continued effect of being in an Environment/Energy agency. These administrators are least likely to have contact with all the actors examined here. One possible explanation is that their environment is very exclusive or perhaps the lobbying organizations assembled at the federal level have a larger influence on programs and agencies in this area. Their frequent contacts may be outside the top five or not exist at all.

More professionalized legislatures in the state increases the probability of frequent contact between state interest groups and state agency heads as hypothesized. This supports the hypothesis whereas the negative effect with the governor's staff called it in to question. The relationships here may need to be modeled differently in the way competing interests influence other actors.

Finally, five control variables showed significance in the state interest group model. Appointment by the governor and personal liberal ideology are more likely to result in frequent contact than the other indicators. Increased age, more liberal government ideology, and more dominant state interest groups all decrease the likelihood of frequent contact with state interest groups.

In Table 4.7, the predicted probabilities show an interesting change as the level of interest group power within a state changes. An agency head in a state with dominant interest groups only has a 10% probability of having frequent contact with state interest groups. At the other end of the categorization, agency heads in complimentary/subordinate interest group power states have a 62% probability of frequent contact. This suggests several questions about interest groups and state bureaucracy. In states where interest groups have more power, are they able to exert more influence in other areas (legislature, elected officials, etc.) and thus do not need to have contact with agency heads? Is contact frequency between state interest groups and state agency heads something to encourage or discourage? Could states be categorized as having “weaker” interest group power simply because the interest groups in that state use less public and quantifiable means (for example, contact with bureaucrats, information sharing, etc.) to pursue their agendas? The second phase of data analysis may shed some light on the type of contact that is occurring between state agency heads and state interest groups.

Aggregated Models of Contact

The different actors within a state agency head’s information environment whom he or she most frequently have *contact* with have been examined individually up to this point. While different variables could have been used in the models for each most-frequent contact, the same control and predictor variables were used across all models to allow for comparability at this stage. Table 4.8 presents the full model results for all five of the actors.

TABLE 4.8
TOP 5 MOST FREQUENT CONTACTS OF STATE AGENCY HEADS : FULL MODELS

	Admin.-same state		Clientele		Citizens		Governor Staff		Int. Group-state	
	Full Model		Full Model		Full Model		Full Model		Full Model	
<i>Administrator Level</i>										
Governor appointed	-.33	(.99)	2.10***	(.73)	2.39***	(.68)	2.72***	(.66)	1.41**	(.57)
Board/Commission appointed	-2.16**	(1.05)	.55	(.82)	.27	(.78)	1.35**	(.68)	-.80	(.63)
Years employed in State	.06	(.04)	.04	(.03)	.05**	(.03)	-.04	(.03)	.04*	(.02)
Employed in private sector prior	1.22	(.77)	-.23	(.52)	-.14	(.49)	-.22	(.48)	-.66	(.45)
Employed in nonprofit prior	2.09**	(.92)	.66	(.55)	1.44***	(.56)	.33	(.49)	.73	(.45)
Liberal/Democrat affiliation	.69	(.71)	.63	(.52)	.31	(.51)	-.18	(.49)	.81*	(.45)
Female	.00	(.71)	-.90*	(.50)	-.22	(.48)	-.27	(.45)	-.54	(.45)
Minority	-.76	(1.12)	1.94	(1.26)	.07	(.80)	-.07	(.82)	-.93	(.70)
Age	-.02	(.04)	-.06*	(.03)	-.09***	(.03)	-.02	(.03)	-.08***	(.03)
Member of a Professional Org.	2.18***	(.85)	.10	(.57)	.34	(.51)	.45	(.50)	-.17	(.48)
<i>Agency Level</i>										
Economic Development	-3.83***	(1.26)	-1.28*	(.75)	-.77	(.75)	.44	(.50)	-.35	(.65)
Education and Training	-1.45	(1.22)	-.34	(.74)	.02	(.68)	.44	(.69)	.44	(.60)
Environment/Energy Agency	-2.74**	(1.12)	-1.65**	(.75)	-1.42**	(.72)	-.61	(.64)	-1.47**	(.63)
Staff Size	-.07	(.44)	.17	(.28)	.30	(.25)	.37	(.25)	.17	(.23)
Budget Size	-.02	(.21)	-.27*	(.14)	-.39***	(.14)	-.04	(.12)	-.27**	(.12)
Federal Fiscal Involvement	-.15	(.29)	-.02	(.22)	.18	(.21)	-.40**	(.19)	.18	(.18)
<i>State Level</i>										
Population Size	-.03	(.07)	.03	(.05)	-.09*	(.05)	.11**	(.05)	-.01	(.04)
Southern State	.59	(.93)	-.41	(.77)	1.59**	(.76)	-.09	(.66)	.25	(.59)
Government Ideology	-.02	(.01)	-.02**	(.01)	-.03***	(.01)	-.00	(.00)	-.02***	(.01)
Legislative Professionalism	8.03	(5.91)	-.81	(3.55)	8.39**	(4.12)	-6.44*	(3.33)	6.39*	(3.42)
Divided Government	.99	(.79)	.83	(.55)	-.48	(.51)	1.03*	(.53)	.49	(.47)
Political Culture	-1.45***	(.58)	.02	(.32)	-.76**	(.32)	-.06	(.30)	-.08	(.27)
Interest Group Power	-.99*	(.52)	.32	(.38)	-1.50***	(.47)	-.18	(.38)	-.89**	(.36)
	n=111 X ² (23)=51.85 R ² =.3629		n=106 X ² (23)=33.66 R ² =.1853		n=111 X ² (23)=51.27 R ² =.2281		n=112 X ² (23)=61.88 R ² =.2734		n=111 X ² (23)=47.05 R ² =.1831	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

Three general hypotheses were presented that predicted the frequency of *contact* between state agency heads and other political actors within their information environments would be contingent on individual *exposure*, *agency capacity*, or *competing interests* in the state. Each of the sub-hypotheses within the categories were suggested to increase frequency of contact with any actor in the information environment. Figure 4 below lists each of the hypotheses by category and by actor, then indicates significance with the direction of the relationship to highlight the patterns across frequency of *contact* with the top five actors.

FIGURE 4
SIGNIFICANT HYPOTHESIZED VARIABLES FOR FREQUENCY OF CONTACT

	Admin same state	Clientele	Citizens	Governor staff	State IG
EXPOSURE					
Years employed in state			+		+
Employed in private sector prior					
Employed in nonprofit sector prior	+		+		
Member of a Professional Org.	+				
CAPACITY					
Staff Size					
Budget Size		-	-		-
COMPETING					
Board/Commission Appointed	-			+	
Economic Development Agency	-	-			
Environment/Energy Agency	-	-	-		-
Divided Government				+	
Federal Fiscal Involvement				-	
Legislative Professionalism			+	-	+

Figure 4 shows that variables relating to *exposure*, *capacity*, and *competing interests* are all important in identifying the factors that influence *frequency of contact* with members of a state agency heads information environment, but they do not have the same effect across actors.

One variable measuring *exposure*, experience in the private sector [H1b], does not affect contact frequency with any of the actors examined at this stage of analysis. Years employed in the state [H1a] positively influences contact with citizens and state interest groups. Nonprofit experience [H1c] increases *contact* with same state administrators and citizens. Professional affiliation [H1d] only mattered in the model of same state administrators. *Exposure* does not appear to have an impact on contacts with clientele or the governor's staff. This may be because exposure tries to measure the potential for external contacts while clientele and gubernatorial staffers could broadly be considered a form of "internal" contact. Overall, the hypothesis that *exposure* to outside sources increases frequency of contact [H1] is supported for interactions with certain actors. Years employed in the state [H1a] and experience in the nonprofit sector [H1c] offer the most explanation across the actors studied here.

The variables measuring agency *capacity* [H2], staff and budget size, had interesting results across the models for the most frequently contacted actors. Staff size [H2a] did not exhibit significance in any of the models. Having more or less staffers to handle external contacts oddly has no effect on agency head contacts. Increased budget resources [H2b] was significant in predicting frequency of *contact* for clientele, citizens, and state interest groups but the effect was negative. It was hypothesized that increased resources would increase contact but this was not the case. Additional resources in other areas do not appear to correlate to increased contact with external actors.

All of the *competing interest* [H3] variables were significant in at least one of the relationships modeled here. Agency type [H3b], board appointment [H3a], and legislative professionalism [H3e] were significant in more than one relationship. State administrators who helm Environment/Energy or Economic Development agencies are less likely than their

counterparts in other agencies to have frequent contact with the actors examined here. When examining the predicted probabilities, Income Security/Social Services agency heads (the baseline category) are predicted to have higher probabilities of frequent contact with all actors over the other three agency types.

Board/commission appointment [H3a] was significant for contact with same state administrators and the governor's staff but in opposite directions. Divided government in a state [H3d] did have the hypothesized effect on frequency of *contact* with the governor's staff but was not influential in any of the other relationships. Finally, federal budgetary involvement [H3c] actually had the opposite of the hypothesized effect but only on the governor's staff, which, of the relationships modeled here, appears to be an anomaly.

Legislative professionalism [H3e] had mixed results. Increased legislative professionalism was hypothesized to increase frequency of *contact* with outside actors and that was true for citizens and state interest groups. However, in relation to frequency of *contact* with the governor's staff, increasing professionalism by the state legislature corresponds to decreasing contact between staffers and administrators. This could be, as noted before, because these actors could be viewed as internal to the agency resources so competing interests would not increase their contact, but that of actors truly external to the agency.

One variable included as a control variable, administrator age, exhibited explanatory power in a majority of the models. The older a state agency head is, the less likely he or she will be to have frequent contact with any of the outside political actors examined in the top five (significant for clientele, citizens, and state interest groups). An interesting avenue for exploration from this finding is whether or not age may play a part in contact frequency with the other actors in the information environment. Perhaps with age, contacts change. This is a line of

inquiry for future research. *Contact* does not tell who initiates the contact or what the content of the contact entails.

State ideology was also included as a control variable and measured through both government ideology NOMINATE scores and political culture in the models presented here since they capture different concepts concerning views on government. Southern state was used as a control variable to accommodate for significant levels of conservatism, traditional political culture, and percentage of the sample size. Government ideology was significant in a majority of the models. The more conservative the state that an administrator works for, the more likely he or she is to have frequent contact with clientele, citizens, and state interest groups. This is an especially interesting finding considering the traditional views of liberal-conservative ideologies and the level of involvement of those outside the standard political regime.

While frequency of *contact* is an interesting and varying concept, it does not provide insight or information into what form or substance those contacts can take. Principal-agent theory as applied to governmental processes relies on the concept of information asymmetry between the various agents and political principals. This leads to questions of information seeking and information providing behaviors within the governmental contexts and relationships discussed so far. To examine how this plays out, the second stage of this study focuses on RQ2 *Information Seeking*. Who are state agency heads more likely to seek out information from in their information environment? How frequently do state administrators seek out information from other political actors relative to their programs and/or policy areas? How does information seeking vary based on individual, agency, or state variations?

Information Seeking by State Agency Heads

Exploring Administrative Information Seeking Behavior

While frequency of contact is an important indicator of some sort of communication or access, when evaluating interactions within the policy process and principal-agent theory, the next step is to wonder what that contact entails. The second guiding research question for this study expands the idea of general interaction to a specific type of contact – *information seeking*. Specifically, how frequently do state administrators seek out information from other political actors specific to their programs or policy areas [RQ2]? This specific question was asked within the survey instrument and descriptive results are presented in Table 4.9.

TABLE 4.9
FREQUENCY OF INFORMATION SEEKING FROM PARTICULAR ACTORS
BY STATE ADMINISTRATORS
 Sample Percentage Indicated

	Never	Less than Monthly	Monthly	Frequently (Daily/Weekly)	
Administrator-same state	0	20	47	33	100%
Governor's Staff	12	33	30	25	100%
Clientele	3	36	39	22	100%
Citizens	9	55	17	19	100%
Interest Group-state	8	44	36	13	100%
Policy Advocate-state	13	44	31	12	100%
Professional Association	7	47	36	10	100%
Nonprofit-local	18	46	26	10	100%
Legislator's Staff	19	48	26	8	100%
Local Official	15	55	23	7	100%
Administrator-national	8	61	25	7	100%
Nonprofit-state	12	47	35	6	100%
Academic	18	58	19	5	100%
Administrator-different state	1	54	41	4	100%
National Official	24	62	12	3	100%
Governor	33	46	18	3	100%
Legislator	16	51	30	3	100%
Nonprofit-national	25	62	12	1	100%
Interest Group-national	27	63	10	1	100%
Policy Advocate-national	30	61	9	0	100%
Think Tank	41	45	14	0	100%

In examining the percentages displayed in Table 4.9, information seeking by state agency heads does not appear to be a uniform activity either in relation to the sample as a whole or to certain political actors. The actor with the highest percentage for frequency of information seeking was same state administrators at 33%. This is significantly lower than the highest for contact frequency (also same state administrators but at 78%). Gubernatorial staffers, clientele, and citizens follow next in the ranking. The fifth actor most frequently sought for information is a state interest group. From this data it may be inferred that state agency heads are most likely to consult other state actors for program or policy specific information while national actors (comprising the bottom of the list) are a less likely information source. From a theoretical standpoint, gubernatorial staff may be assumed to be proxies of governors themselves. Citizens, clientele, and state interest groups all represent interests in the vein of pluralist democracy and power.

At the bottom of the results in Table 4.9, percentages are quite high for the amount of actors “never” being sought out for information by state administrators. Forty-four percent of respondents said they never consult think tanks. One-third do not seek out their governors; and national policy advocates (30%), national interest groups (27%), national nonprofits (25%), and national officials (24%) round out the bottom. The only information source that no respondent indicated that they “never” seek information from was administrators within their own states. Administrators in different states (1% never) and clientele (3% never) also seem to be guaranteed sources of information for state agency heads. The largest distributions from the sample for frequency of *information seeking* are in the “occasionally” categories between frequent and never.

Explaining Variations in Information Seeking

While superficially informative, these responses alone do not explain what factors contribute to the information actors that state agency heads choose to seek information from. Three main hypotheses were presented earlier to understanding the frequency of *information seeking* by state administrators:

H4: *Exposure* of state administrators to other actors will increase how frequently they seek information from other political actors in their information environment.

H5: Greater agency *capacity* will increase how frequently the heads of that agency seek out information from other political actors in their information environment.

H6: *Competing interests* in the state will increase the frequency that the heads of agencies within that state seek out information from other political actors in their information environment.

These hypotheses will be explored using the same data as described in Chapter 3 and used previously to analyze frequency of *contact*. Due to the breadth of information and number of variables involved, only the top five information sources from Table 4.9 will be used to examine and test the listed hypotheses.

For the dependent variable frequency of *information seeking*, independent variables similar to those previously used will be examined. These variables all attempt to capture increased *exposure*, *capacity*, or *competing interests* that could increase frequency of *information seeking* from particular entities within the information environment. For *exposure* it is hypothesized that:

H4a: More years worked as head of the agency will increase frequency of information seeking.

H4b: More years worked outside of state government will increase frequency of information seeking.

H4c: Membership in a professional organization will increase frequency of information seeking.

H4d: Daily contact with an actor will increase frequency of information seeking from that actor.

For *capacity*, the variables of interest are:

H5a: Larger staffs will increase frequency of information seeking from an outside source.

H5b: Greater budgetary resources will increase frequency information seeking from an outside source.

And finally, the variables hypothesized to affect through the presence of *competing interests* within the state are:

H6a: Being appointed by a board/commission will increase frequency of information seeking from an outside source.

H6b: Frequency of information seeking for some agencies will be greater than others.

H6c: Budgets comprised of greater percentages of federal funds will increase frequency of information seeking from an outside source by a state agency head.

H6d: The presence of divided government in a state will increase frequency of information seeking from an outside source by state administrators in that state.

H6e: Increased legislative professionalism will increase frequency of information seeking from an outside source.

Results

To develop and test the hypotheses about *exposure*, *agency capacity*, and state *competing interests* affecting the seeking of information from information actors, ordered logit models were ran on the five actors most frequently sought for information. In addition to the predictor and control variables used for the models on frequency of *contact*, frequent contact with that particular actor is also included as a potential predictor variable. Correlation tests suggested the possibility that frequency of *contact* could predict frequency of *information seeking*. In addition to the full models, partial models were ran examining administrator, agency, and state only variables. The results of these models are displayed in Tables 4.10.

TABLE 4.10
FREQUENCY OF INFORMATION SEEKING FROM TOP FIVE ACTORS:
INFORMATION SEEKING FROM ADMINISTRATOR-SAME STATE

	Model 1 Individual Level		Model 2 Agency Level		Model 3 State Level		Model 4 Ind. and Agency		Model 5 FULL MODEL	
<i>Administrator Level</i>										
Governor appointed	.22	(.48)					.09	(.56)	-.17	(.61)
Board/Commission appointed	-.32	(.59)					-.57	(.69)	-.75	(.72)
Years employed as agency head	.06*	(.04)					.06*	(.04)	.05	(.04)
Years employed outside govt	.02	(.03)					-.00	(.03)	-.01	(.03)
Liberal/Democrat affiliation	.64	(.41)					.63	(.43)	.63	(.46)
Female	.56	(.41)					.64	(.42)	.59	(.44)
Minority	.42	(.69)					.40	(.71)	.24	(.74)
Age	-.03	(.03)					-.03	(.03)	-.03	(.03)
Member of a Professional Org.	.30	(.45)					-.00	(.49)	.18	(.54)
Daily contact with actor	1.22***	(.43)					1.11**	(.47)	1.19**	(.49)
<i>Agency Level</i>										
Economic Development			-.56	(.57)			-.30	(.61)	-.04	(.65)
Education and Training			-.97*	(.51)			-.41	(.62)	-.33	(.63)
Environment/Energy Agency			-1.19**	(.55)			-.80	(.63)	-.55	(.67)
Staff Size			-.21	(.20)			-.21	(.23)	-.21	(.24)
Budget Size			.07	(.09)			.09	(.11)	.12	(.12)
Federal Fiscal Involvement			-.26	(.16)			-.30	(.18)	-.32*	(.19)
<i>State Level</i>										
Population Size					-.05	(.04)			-.01	(.05)
Southern State					.10	(.52)			-.45	(.59)
Government Ideology					.01	(.01)			.01	(.01)
Legislative Professionalism					3.67	(2.67)			.68	(3.21)
Divided Government					.36	(.45)			.44	(.50)
Political Culture					-.44*	(.24)			-.46*	(.28)
Interest Group Power					-.10	(.28)			.14	(.32)
	n=104 X ² (10)=24.55 R ² = .1128		n=105 X ² (6)=9.05 R ² = .0413		n=105 X ² (7)=9.77 R ² = .0446		n=104 X ² (16) 29.98 R ² = .1377		n=104 X ² (23)=36.15 R ² = .1661	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

TABLE 4.10 CONTINUED
FREQUENCY OF INFORMATION SEEKING FROM TOP FIVE ACTORS:
INFORMATION SEEKING FROM GOVERNOR'S STAFF

	Model 1 Individual Level	Model 2 Agency Level	Model 3 State Level	Model 4 Ind. and Agency	Model 5 FULL MODEL
<i>Administrator Level</i>					
Governor appointed	1.79*** (.48)			1.63*** (.53)	.98* (.56)
Board/Commission appointed	101.0** (.56)			.75 (.65)	.61 (.67)
Years employed as agency head	.01 (.04)			.02 (.04)	.02 (.04)
Years employed outside govt	-.03 (.03)			-.04 (.03)	-.03 (.03)
Liberal/Democrat affiliation	-.27 (.40)			-.28 (.42)	-.59 (.45)
Female	-.29 (.40)			-.24 (.41)	-.45 (.43)
Minority	.14 (.66)			.14 (.68)	.70 (.73)
Age	-.01 (.03)			-.01 (.03)	-.03 (.03)
Member of a Professional Org.	.74* (.41)			.65 (.44)	1.33*** (.50)
Daily contact with actor	3.36*** (1.15)			3.06*** (1.17)	3.17*** (1.23)
<i>Agency Level</i>					
Economic Development		.29 (.54)		-.04 (.60)	.53 (.65)
Education and Training		.56 (.49)		.32 (.58)	.50 (.62)
Environment/Energy Agency		-.19 (.52)		-.42 (.59)	.20 (.63)
Staff Size		-.03 (.19)		-.08 (.23)	-.13 (.25)
Budget Size		.25** (.10)		.12 (.11)	.23* (.13)
Federal Fiscal Involvement		.42*** (.15)		-.26 (.18)	-.40** (.19)
<i>State Level</i>					
Population Size			.06* (.04)		.11** (.04)
Southern State			.23 (.52)		-.28 (.61)
Government Ideology			.01* (.01)		.02** (.01)
Legislative Professionalism			-4.64* (2.54)		-10.38*** (3.32)
Divided Government			.75* (.43)		.84* (.50)
Political Culture			-.23 (.23)		-.17 (.29)
Interest Group Power			-.09 (.28)		-.09 (.34)
	n=104 X ² (10)=46.21 R ² = .1668	n=105 X ² (6)=20.00 R ² = .0716	n=105 X ² (7)=15.49 R ² = .0554	n=104 X ² (16) 51.22 R ² = .1849	n=104 X ² (23)=71.05 R ² = .2565

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

TABLE 4.10 CONTINUED
 FREQUENCY OF INFORMATION SEEKING FROM TOP FIVE ACTORS:
 INFORMATION SEEKING FROM CLIENTELE

	Model 1 Individual Level	Model 2 Agency Level	Model 3 State Level	Model 4 Ind. and Agency	Model 5 FULL MODEL
<i>Administrator Level</i>					
Governor appointed	-.05 (.16)			.16 (.53)	-.77 (.63)
Board/Commission appointed	-.88 (.57)			-.99 (.68)	-1.19 (.74)
Years employed as agency head	-.02 (.04)			-.02 (.04)	.01 (.04)
Years employed outside govt	-.03 (.02)			-.06** (.03)	-.03 (.03)
Liberal/Democrat affiliation	1.06** (.44)			1.12** (.46)	.88* (.51)
Female	-.18 (.42)			-.20 (.43)	-.38 (.46)
Minority	-.95 (.65)			-1.02 (.67)	-.10 (.74)
Age	-.03 (.03)			-.03 (.03)	-.06** (.03)
Member of a Professional Org.	.09 (.44)			-.23 (.49)	.33 (.54)
Daily contact with actor	1.15** (.45)			.98** (.47)	1.88*** (.56)
<i>Agency Level</i>					
Economic Development		.04 (.57)		-.28 (.61)	.52 (.68)
Education and Training		-.37 (.51)		-.49 (.63)	-.47 (.66)
Environment/Energy Agency		-.88* (.52)		-1.11* (.59)	-.60 (.67)
Staff Size		-.24 (.18)		-.22 (.21)	-.31 (.24)
Budget Size		.07 (.09)		-.00 (.10)	.13 (.12)
Federal Fiscal Involvement		-.07 (.15)		-.21 (.48)	-.26 (.19)
<i>State Level</i>					
Population Size			.05 (.04)		.10** (.05)
Southern State			-.15 (.50)		-.30 (.59)
Government Ideology			.00 (.01)		.02 (.01)
Legislative Professionalism			-7.51*** (2.82)		-13.57*** (3.55)
Divided Government			1.01** (.45)		1.06** (.52)
Political Culture			.37 (.25)		.57* (.30)
Interest Group Power			.08 (.29)		.39 (.33)
	n=98 X ² (10)=18.68 R ² = .0811	n=100 X ² (6)=5.46 R ² = .0233	n=100 X ² (7) =18.64 R ² = .0794	n=98 X ² (16) 24.99 R ² = .1084	n=98 X ² (23) =52.57 R ² = .2281

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

TABLE 4.10 CONTINUED
FREQUENCY OF INFORMATION SEEKING FROM TOP FIVE ACTORS:
INFORMATION SEEKING FROM CITIZENS

	Model 1 Individual Level		Model 2 Agency Level		Model 3 State Level		Model 4 Ind. and Agency		Model 5 FULL MODEL	
<i>Administrator Level</i>										
Governor appointed	1.34***	(.51)					1.14**	(.56)	1.16*	(.65)
Board/Commission appointed	-.84	(.61)					-1.05	(.71)	-1.35*	(.73)
Years employed as agency head	-.05	(.04)					-.05	(.04)	-.07*	(.04)
Years employed outside govt	-.00	(.02)					-.01	(.03)	-.02	(.03)
Liberal/Democrat affiliation	.67	(.44)					.65	(.46)	.49	(.49)
Female	.16	(.43)					.22	(.43)	.13	(.47)
Minority	-1.42**	(.74)					-1.61**	(.74)	-1.84**	(.78)
Age	-.01	(.03)					-.00	(.03)	.01	(.03)
Member of a Professional Org.	.03	(.44)					-.08	(.49)	-.14	(.52)
Daily contact with actor	1.96***	(.51)					2.06***	(.54)	2.40***	(.62)
<i>Agency Level</i>										
Economic Development			-.37	(.56)			-.48	(.64)	-.87	(.73)
Education and Training			-.68	(.51)			-.29	(.64)	-.45	(.67)
Environment/Energy Agency			-.78	(.53)			-.54	(.62)	-.51	(.68)
Staff Size			.19	(.19)			-.07	(.23)	-.21	(.25)
Budget Size			.10	(.10)			.14	(.11)	.17	(.12)
Federal Fiscal Involvement			-.28*	(.15)			-.24	(.17)	-.34*	(.19)
<i>State Level</i>										
Population Size					.01	(.04)			.04	(.05)
Southern State					.68	(.52)			.31	(.60)
Government Ideology					.01	(.01)			.02**	(.01)
Legislative Professionalism					.32	(2.66)			-.89	(3.51)
Divided Government					-.30	(.45)			-1.23**	(.55)
Political Culture					-.07	(.24)			-.05	(.29)
Interest Group Power					-.25	(.29)			-.03	(.33)
	n=104		n=105		n=105		n=104		n=104	
	X ² (10)=39.14		X ² (6)=10.50		X ² (7)=5.33		X ² (16) 43.63		X ² (23) =52.50	
	R ² = .1619		R ² = .0432		R ² = .0219		R ² = .1805		R ² = .2172	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

TABLE 4.10 CONTINUED
FREQUENCY OF INFORMATION SEEKING FROM TOP FIVE ACTORS:
INFORMATION SEEKING FROM STATE INTEREST GROUP

	Model 1 Individual Level		Model 2 Agency Level		Model 3 State Level		Model 4 Ind. and Agency		Model 5 FULL MODEL	
<i>Administrator Level</i>										
Governor appointed	-.16	(.47)					.05	(.52)	-.27	(.57)
Board/Commission appointed	-.44	(.53)					-.50	(.61)	-.41	(.63)
Years employed as agency head	-.05	(.04)					-.04	(.04)	-.03	(.04)
Years employed outside govt	-.02	(.03)					-.03	(.03)	-.02	(.03)
Liberal/Democrat affiliation	.68*	(.41)					.58	(.42)	.58	(.46)
Female	-.08	(.40)					-.09	(.42)	-.16	(.44)
Minority	-.66	(.64)					-.68	(.68)	-.44	(.71)
Age	.03	(.03)					-.03	(.03)	-.04	(.03)
Member of a Professional Org.	-.18	(.41)					-.32	(.45)	-.14	(.49)
Daily contact with actor	3.26**	(1.28)					3.50**	(1.37)	3.42**	(1.39)
<i>Agency Level</i>										
Economic Development			-.59	(.58)			-.67	(.61)	-.43	(.66)
Education and Training			.02	(.48)			.04	(.58)	-.05	(.60)
Environment/Energy Agency			-1.16**	(.54)			-1.30**	(.58)	-1.28**	(.62)
Staff Size			-.23	(.20)			-.17	(.21)	-.26	(.23)
Budget Size			.09	(.10)			.01	(.10)	.07	(.12)
Federal Fiscal Involvement			.12	(.16)			.01	(.18)	.04	(.18)
<i>State Level</i>										
Population Size					.06	(.04)			.04	(.04)
Southern State					.05	(.53)			.26	(.58)
Government Ideology					-.00	(.01)			-.00	(.01)
Legislative Professionalism					-3.72	(2.71)			-3.20	(3.12)
Divided Government					1.30***	(.50)			1.29**	(.52)
Political Culture					.14	(.25)			.19	(.28)
Interest Group Power					.24	(.30)			.45	(.34)
	n=103		n=104		n=104		n=103		n=103	
	X ² (10)=16.60		X ² (6)=8.76		X ² (7)=12.70		X ² (16) 24.13		X ² (23)=34.70	
	R ² = .0679		R ² = .0355		R ² = .0515		R ² = .0987		R ² = .1419	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

Administrator in Same State

Other administrators in the same state were the most frequent actor that state agency heads indicated they seek out for information. While several indicators showed importance in the partial models, significant predictor variables in the full model include only frequency of contact (*exposure*) with administrators in the same state and federal fiscal involvement (*competing interests*). Simply having contact with other administrators in the same state is the largest indicator of also seeking information from administrators in that state. Ordered logit estimates are not readily intuitive when interpreting and understanding the influence of significant predictor variables. To aid in comprehension and comparability, predicted probabilities are computed for significant variables in this and each of the following discussions. Results for predicted probabilities of significant variables in this model are presented in Table 4.11.

TABLE 4.11
PREDICTED PROBABILITIES FOR STATE AGENCY HEAD SEEKING INFORMATION
FROM ADMINISTRATORS IN SAME STATE^A

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never ^B
EXPOSURE				
Predicted Probabilities Based on Daily Contact with Actor				
Daily Contact	.45	.48	.08	
Less Frequent Contact	.20	.59	.21	
COMPETING INTERESTS				
Predicted Probabilities Based on Federal Funding				
75% + of budget	.23	.59	.18	
50-74% of budget	.29	.57	.14	
25-49% of budget	.36	.54	.11	
<25% of budget	.43	.49	.08	
No federal funds	.51	.43	.06	
CONTROL				
Predicted Probabilities Based on Political Culture				
Individualistic	.40	.51	.09	
Traditionalistic	.29	.57	.14	
Moralistic	.21	.59	.20	

^AChange in predicted probabilities of each outcome category for frequency of information seeking for changing values of independent variable, while holding all other variables constant at their means.

^BNo respondents indicated that they “never” seek information from administrators in the same state.

The predicted probabilities highlight how, as contact increases, the probability of seeking information also increases. Daily contact results in a 45% probability of frequently seeking information from same-state administrators. Frequent contact also results in an extremely low probability seeking information less than monthly.

The significant effect of federal fiscal influence displays how the proportion of the agency's budget that is comprised of federal funds can affect information seeking behavior by the head of that agency. Table 4.11 shows how this plays out in predicted probabilities based on federal funding categories. The lower the percentage of federal funding that a state agency head manages, the more frequently he or she will seek out information from administrators in the same state. An agency head is most likely to seek information from this information actor when they receive no federal funds. Conversely, when an agency head's budget is mostly from federal funding (23% and 29% probability for categories over 50%), he or she is least likely to frequently seek out information from state counterparts.

The control variable of political culture had significance in this model. The effect was similar to the models of *contact* frequency. Individualistic state administrators are most likely to frequently seek information from administrators in their states while Moralistic state administrators are least likely.

Governor's Staff

The model for frequency of *information seeking* from the governor's staff displayed in Table 4.10 includes several more significant indicators than for the first model of same-state administrators. Six predictor variables and three control variables all achieved statistical

significance. Table 4.12 displays the predicted probabilities across categories for all significant variables.

TABLE 4.12
PREDICTED PROBABILITIES FOR SEEKING INFORMATION
FROM GOVERNOR'S STAFF^A

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
EXPOSURE				
Predicted Probability Based on Daily Contact with Actor				
Daily Contact	.77	.19	.04	.00
Less Frequent Contact	.12	.40	.42	.06
Predicted Probability Based on Professional Organization Membership				
Member of Prof. Org.	.22	.47	.28	.03
Not Member of Prof. Org.	.07	.30	.53	.10
CAPACITY				
Predicted Probability Based on Agency Budget				
Less than \$1 mil	.06	.28	.55	.11
\$10-\$25 mil	.12	.39	.43	.06
\$100-\$200 mil	.21	.46	.30	.03
Over \$1,000 mil	.35	.46	.18	.02
COMPETING INTERESTS				
Predicted Probability Based on Federal Fiscal Involvement				
75% + of budget	.12	.39	.43	.06
50-74% of budget	.17	.44	.35	.04
25-49% of budget	.23	.47	.28	.03
<25% of budget	.31	.47	.21	.02
No federal funds	.40	.44	.15	.01
Predicted Probability Based on Legislative Professionalism				
Squire's Index=.030	.50	.38	.11	.01
Squire's Index=.189	.16	.44	.36	.04
Squire's Index=.620	.00	.01	.19	.79
Predicted Probability Based on Divided Government				
Divided Govt	.24	.47	.27	.03
Unified Govt	.12	.39	.43	.06
CONTROL				
Predicted Probability Based on Appointment				
Appointed by Governor	.25	.47	.25	.02
Other Method	.11	.38	.44	.06
Predicted Probability Based on Population				
Population=.6 mil	.09	.34	.49	.08
Population=.7 mil	.16	.44	.36	.04
Population=.35 mil	.79	.17	.03	.00
Predicted Probability Based on Government Ideology				
NOMINATE score 4	.08	.33	.51	.09
NOMINATE score 45.7	.16	.43	.37	.04
NOMINATE score 90	.29	.47	.22	.02

^AChange in predicted probabilities of each outcome category for frequency of information seeking for changing values of each independent variable, while holding all other variables constant at their means.

Similar to same-state administrators, the increased contact *exposure* variable translates to increased information seeking when considering gubernatorial staff (significant $p < .001$). Having daily contact with gubernatorial staffers results in a 77% chance that the state agency head frequently seeks out information from them. Being a member of a professional organization is the only other *exposure* variable that impacts this relationship. An administrator is three times more likely to frequently seek out information from gubernatorial staffers when they belong to one of these linkage organizations.

The *capacity* variable for budget is significant and, unlike in the *contact* models, in the hypothesized direction. Greater budgetary resources increase the likelihood of frequent information seeking from the governor's staff. The opposite directional effects for budget in the *contact* and *information seeking* models suggest that monetary resources affect administrative behavior and agency information environments differently.

Legislative professionalism and divided government are both significant but in opposing directions. This is similar to the opposite effect in the model of *contact* with the governor's staff. A more professional legislature in the state decreases *information seeking* from the governor's staff. Divided government doubles the likelihood of the governor's staff being a frequent information source. These similar results across different models indicate a need for closer study to understand how the relationships influence one another.

The *competing interest* variable of federal fiscal involvement was also significant but in a negative direction (similar to the models of *contact*). The less federal funding an agency receives, the more likely that administrator is to frequently seek out information from the governor's staff. The priorities of the federal government through money may be forcing the other interests out completely instead of creating a need for balance.

Population size, government ideology, and gubernatorial appointment were the three control variables that affect *information seeking* from this actor. Being appointed by the governor increases the likelihood of frequent information seeking; this logically makes sense. The effect of population size is interesting. Larger state populations are creating some impetus in the environments of agency heads that increases information seeking from the governor's staff. More liberal government ideology exhibits the same result.

Clientele

The clientele of an agency is one of the top five most frequent information sources just as it was one of the top contacts. Whereas *contact* did not specify who originated the interaction or the substance of it, *information seeking* provides both direction and content of the interaction. Table 4.10 shows that the *exposure* variable of daily contact and the *competing interest* variables of divided government and legislative professionalism achieved levels of significance to suggest an effect on frequency of *information seeking*. These and significant control variables are shown with predicted probabilities in Table 4.13.

TABLE 4.13
PREDICTED PROBABILITIES FOR SEEKING INFORMATION
FROM CLIENTELE

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
EXPOSURE				
Predicted Probability Based on Daily Contact with Actor				
Daily Contact	.39	.51	.10	.00
Less Frequent Contact	.09	.48	.41	.02
COMPETING INTERESTS				
Predicted Probability Based on Legislative Professionalism				
Squire's Index=.030	.61	.35	.04	.00
Squire's Index=.189	.15	.56	.28	.01
Squire's Index=.620	.00	.01	.23	.76

TABLE 4.13 CONTINUED
PREDICTED PROBABILITIES FOR SEEKING INFORMATION
FROM CLIENTELE^A

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
Predicted Probability Based on Divided Government				
Divided Govt	.23	.57	.19	.01
Unified Govt	.09	.50	.39	.02
CONTROL				
Predicted Probability Political Party Affiliation				
Democrat/Liberal	.19	.57	.23	.01
Republican/Conservative	.09	.49	.41	.02
Predicted Probability Based on Age				
35 years old	.37	.52	.11	.00
55 years old	.15	.56	.29	.01
72 years old	.06	.40	.52	.03
Predicted Probability Based on Population				
Population=.6 mil	.08	.46	.44	.02
Population=7 mil	.14	.55	.30	.01
Population=35 mil	.76	.22	.02	.00
Predicted Probability Based on Political Culture				
Individualistic	.08	.47	.43	.02
Traditionalistic	.13	.55	.31	.01
Moralistic	.21	.58	.20	.01

^AChange in predicted probabilities of each outcome category for frequency of information seeking for changing values of each independent variable, while holding all other variables constant at their means.

Similar to the previous information actors discussed, frequency of *contact* is highly indicative of frequency of *information seeking*. A state agency head who has daily contact with clientele is four times more likely to seek information from clientele frequently. While this study does not seek to examine if they are the same individuals or groups, it is noteworthy that frequent contact with this source in the information environment does increase the likelihood of seeking out information from them.

Legislative professionalism has a negative effect on *information seeking* from clientele. It is possible that the relationship with clientele would be more accurate if not modeled the same as the other policy actors for the influence of *competing interests* for this interaction. Clientele contain very different types of information than others in the information environment and could be argued to be a type of internal information source. Divided government as a measure of

competing interests in the state is significant and in a positive direction. The presence of competing political parties in state institutions increases the likelihood of frequent information seeking by a state administrator with clientele.

Administrator age as a control variable again shows significance in predicting a negative relationship for *information seeking* behavior on the part of the state agency head. Younger administrators are more likely to seek information more frequently whereas older state agency heads are less likely. The older an administrator is, the less likely he or she is to seek out information from the clientele served by the agency. Liberal personal political ideology and state population size both positively increase the likelihood of frequent use of clientele as an information source.

Citizens

For the dependent variable of *clientele*, the focus was on the individuals, groups, or organizations that a state administrator directly serves. In discussing *citizens*, the attention is on information-seeking from anyone in the general citizenry of the state. Eight variables, five predictors and three control, from the full model in Table 4.10 showed significance. Frequency of contact again shows a strong relationship ($p < .001$). Two types of appointment, administrator ethnicity, federal fiscal involvement, and divided government also achieve appropriate levels of significance at $p < .05$. Years employed in current position, appointment and federal fiscal involvement exhibit moderate ($p < .10$) significance. Predicted probabilities are presented in Table 4.14 to highlight the relationships between these variables and the outcome categories.

TABLE 4.14
PREDICTED PROBABILITIES FOR SEEKING INFORMATION
FROM CITIZENS^A

	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
EXPOSURE				
Predicted Probability Based on Years as Agency Head				
1 year as head	.15	.26	.56	.03
5 years as head	.12	.23	.62	.04
28 years as head	.02	.06	.74	.17
Predicted Probability Based on Daily Contact with Actor				
Daily Contact	.42	.32	.25	.01
Less Frequent Contact	.06	.15	.72	.07
COMPETING INTERESTS				
Predicted Probability Based on Appointment				
Appointed by Governor	.21	.30	.47	.02
Appointed by Board/Commission	.04	.11	.75	.10
Other Method	.10	.20	.65	.04
Predicted Probability Based on Federal Fiscal Involvement				
75% + of budget	.09	.19	.67	.05
50-74% of budget	.12	.23	.61	.04
25-49% of budget	.16	.27	.54	.03
<25% of budget	.22	.31	.46	.02
No federal funds	.28	.33	.38	.01
Predicted Probability Based on Divided Government				
Divided Govt	.06	.14	.72	.07
Unified Govt	.18	.29	.51	.02
CONTROL				
Predicted Probability Based on Ethnicity				
Minority	.02	.07	.74	.17
Not a Minority	.14	.25	.58	.03
Predicted Probability Based on Government Ideology				
NOMINATE score 4	.05	.12	.74	.09
NOMINATE score 45.7	.11	.22	.62	.04
NOMINATE score 90	.26	.32	.41	.01

^AChange in predicted probabilities of each outcome category for frequency of information seeking for changing values of each independent variable, while holding all other variables constant at their means.

None of the variables measuring *capacity* influence information seeking frequency from citizens but two *exposure* and three out of the five *competing interest* variables do. All but contact frequency are in the opposite of the hypothesized direction, however. Being appointed by a board/commission rather than the governor, having less federal funds, and operating in a state

with divided government are all associated with less frequency of information seeking from citizens.

The number of years working as the head of an agency influences frequency of information seeking from citizens, but not as previously hypothesized for an *exposure* variable. The more years an administrator spends in his or her position, the less likely he or she is to seek information on a frequent basis from citizens. In contrast to this, having daily contact with citizens makes an administrator seven times more likely to frequently seek them out for information.

Additionally, administrators appointed by board/commission are least likely out of their counterparts to seek out information from citizens. Those appointed by a governors are most. Administrators are also less likely to frequently seek out information from citizens when divided government is present, the opposite of the hypothesized effect. Finally, as seen in other models up to this point, federal funding negatively affects this interaction.

State Interest Groups

State interest groups are the fifth most frequent information source of the state agency heads in this sample. In addition to frequency of contact (*exposure*) once again having significance, agency type and divided government (*competing interests*) both showed explanatory power at $p < .05$ as shown in Table 4.10. The predicted probabilities for these variables at various thresholds are shown in Table 4.15.

TABLE 4.15
PREDICTED PROBABILITIES FOR SEEKING INFORMATION
FROM STATE INTEREST GROUP^A

EXPOSURE	Probability of Outcome Category			
	Frequently	Monthly	<Monthly	Never
Predicted Probability Based on Daily Contact with Actor				
Daily Contact	.71	.25	.03	.00
Less Frequent Contact	.07	.39	.48	.05
COMPETING INTERESTS				
Predicted Probability Based on Type of Agency				
Economic Development	.06	.36	.52	.06
Education	.08	.41	.46	.05
Environment/Energy*	.03	.25	.61	.11
Income Security/Social Services	.12	.48	.36	.03
Predicted Probability Based on Divided Government				
Divided Govt	.17	.52	.29	.02
Unified Govt	.05	.33	.55	.07

^AChange in predicted probabilities of each outcome category for frequency of information seeking for changing values of each independent variable, while holding all other variables constant at their means.

Frequent contact (*exposure*) continues to increase the probability of frequency of *information seeking* from another member of the information environment. A state administrator that has daily contact with state interest groups is 10 times more likely to seek information from state interest groups on a frequent basis compared to administrators with less contact. The findings for this variable support the view that contact with other actors *does* translate to information sharing.

The state interest group model of information seeking is interesting in that all of the significant variables are also predictor variables in the hypothesized direction. In addition to frequent contact, the *competing interest* variables of agency type and divided government affect frequency of information seeking from state interest groups. Neither of the *capacity* indicators were significant.

Environment/Energy agency heads are most likely to never seek out information from state interest groups. This is similar to results found for agency type in various models of contact. Divided government in an administrator's state political environment indicates more frequent information seeking from interest groups just as hypothesized. Competing political principals drives a need for external, balances information, or at least the appearance of it. None of the control variables were significant in this model.

Aggregated Models of Information Seeking

The different actors within a state agency head's information environment whom he or she most frequently seek out for information have been examined individually up to this point. While different variables could have been used in the models for each information environment contact, the same control and predictor variables were used across all frequency of *information seeking* models to allow for comparability at this stage. Table 4.16 presents the full model results for all five of the actors discussed individually up to this point.

TABLE 4.16
TOP 5 MOST SOUGHT INFORMATION SOURCES

	Admin.-same Full Model		Governor Staff Full Model		Clientele Full Model		Citizens Full Model		Int. Group-state Full Model	
<i>Administrator Level</i>										
Governor appointed	-.17	(.61)	.98*	(.56)	-.77	(.63)	1.16*	(.65)	-.27	(.57)
Board/Commission appointed	-.75	(.72)	.61	(.67)	-1.19	(.74)	-1.35*	(.73)	-.41	(.63)
Years employed as head	.05	(.04)	.02	(.04)	.01	(.04)	-.07*	(.04)	-.03	(.04)
Years employed outside govt	-.01	(.03)	-.03	(.03)	-.03	(.03)	-.02	(.03)	-.02	(.03)
Liberal/Democrat affiliation	.63	(.46)	-.59	(.45)	.88*	(.51)	.49	(.49)	.58	(.46)
Female	.59	(.44)	-.45	(.43)	-.38	(.46)	.13	(.47)	-.16	(.44)
Minority	.24	(.74)	.70	(.73)	-.10	(.74)	-1.84**	(.78)	-.44	(.71)
Age	-.03	(.03)	-.03	(.03)	-.06**	(.03)	.01	(.03)	-.04	(.03)
Member of a Professional Org.	.18	(.54)	1.33***	(.50)	.33	(.54)	-.14	(.52)	-.14	(.49)
Daily Contact with actor	1.19**	(.49)	3.17***	(1.23)	1.88***	(.56)	2.40***	(.62)	3.42**	(1.39)
<i>Agency Level</i>										
Economic Development	-.04	(.65)	.53	(.65)	.52	(.68)	-.87	(.73)	-.43	(.66)
Education and Training	-.33	(.63)	.50	(.62)	-.47	(.66)	-.45	(.67)	-.05	(.60)
Environment/Energy Agency	-.55	(.67)	.20	(.63)	-.60	(.67)	-.51	(.68)	-1.28**	(.62)
Staff Size	-.21	(.24)	-.13	(.25)	-.31	(.24)	-.21	(.25)	-.26	(.23)
Budget Size	.12	(.12)	.23*	(.13)	.13	(.12)	.17	(.12)	.07	(.12)
Federal Fiscal Involvement	-.32*	(.19)	-.40**	(.19)	-.26	(.19)	-.34*	(.19)	.04	(.18)
<i>State Level</i>										
Population Size	-.01	(.05)	.11**	(.04)	.10**	(.05)	.04	(.05)	.04	(.04)
Southern State	-.45	(.59)	-.28	(.61)	-.30	(.59)	.31	(.60)	.26	(.58)
Government Ideology	.01	(.01)	.02**	(.01)	.02	(.01)	.02**	(.01)	-.00	(.01)
Legislative Professionalism	.68	(3.21)	-10.38***	(3.32)	-13.57***	(3.55)	-.89	(3.51)	-3.20	(3.12)
Divided Government	.44	(.50)	.84*	(.50)	1.06**	(.52)	-1.23**	(.55)	1.29**	(.52)
Political Culture	-.46*	(.28)	-.17	(.29)	.57*	(.30)	-.05	(.29)	.19	(.28)
Interest Group Power	.14	(.32)	-.09	(.34)	.39	(.33)	-.03	(.33)	.45	(.34)
	n=104 X ² (23)=51.85 R ² =.1661		n=104 X ² (23)=33.66 R ² =.2565		n=98 X ² (23)=51.27 R ² =.2281		n=104 X ² (23)=61.88 R ² =.2172		n=103 X ² (23)=47.05 R ² =.1419	

Numbers are ordered logit coefficients. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10:

Three general hypotheses were presented that predicted the frequency of *information seeking* behavior of state agency heads with other political actors in their information environments would be contingent on individual *exposure*, agency *capacity*, or *competing interests* in the state. Each of the sub-hypotheses within the categories were suggested to increase information seeking from any actor in the information environment. Figure 5 below lists each of the hypotheses by category and by actor and then indicates significance with the direction of the relationship to highlight the patterns across frequency of information seeking with the most recurrent actors.

FIGURE 5
SIGNIFICANT HYPOTHESIZED VARIABLES FOR FREQUENCY OF INFORMATION SEEKING

	Admin same state	Governor staff	Clientele	Citizens	State IG
EXPOSURE					
Years employed as agency head				-	
Years employed outside state gov't					
Member of a Professional Org.		+			
Daily contact with actor	+	+	+	+	+
CAPACITY					
Staff Size					
Budget Size		+			
COMPETING					
Board/Commission Appointment				-	
Environment/Energy Agency					-
Divided government		+	+	-	+
Federal Fiscal Involvement	-	-		-	
Legislative Professionalism		-	-		

The above figure shows that certain hypothesized variables are important in identifying the factors that influence frequency of *information seeking* by state agency heads from members of their information environment, but they do not have the same effect across actors. Some of the

variables achieved significance in only one of the models and some not at all. Like the models of *contact*, the change in direction while still significant indicates a need to model a particular relationship differently or explore alternative explanations.

One variable measuring *exposure* [H4], daily contact [H4d], was a consistent, positive influence on frequency of *information seeking* across all actors. Membership in a professional organization [H4c] only influenced *information seeking* towards the governor's staff. Increased years as the head of the agency had a significant but opposite effect from what was hypothesized [H4a] for information seeking from citizens. Longevity as an agency head actually decreases the likelihood of frequently seeking out information from this information environment actor. Outside experience [H4b] was not a predictor for any of the top five most frequently sought actors.

The variables measuring agency *capacity* [H5], staff size and budget, showed almost no influence across four of the top five information sources. Staff size [H5a] had no effects. Increased budgetary resources [H5b] was significant in predicting frequency of *information seeking* from the governor's staff only. Much is still to be learned about the comparative effects of different indicators of capacity within state agencies and their influences on behavior and decision making.

All of the *competing interest* [H6] variables were significant in at least one of the relationships modeled for this phase of analysis. Agency type [H6b] and board appointment [H6a] were each only significant in one of the relationships. This is interesting in that they were the two *competing interest* variables that most often showed significance for frequency of *contact*. State administrators who helm Environment/Energy agencies are less likely than their counterparts in other agencies to frequently seek out information from state interest groups but

agency type showed no other influence across the modeled interactions. This is particularly interesting because agency types have long been assumed to influence the environments and behaviors of the administrators within them. Significant agency effects found in the *contact* models supported this which suggests that information seeking may be a uniform activity rather than agency specific.

Divided government in a state [H6d] was significant for frequency of *information seeking* with four out of the five actors examined. For citizens however, divided government in the state decreases the likelihood of information seeking by state agency heads. All the other relationships were in the hypothesized direction. The increased political pressures of competing principals may result in this actor being excluded over others being included.

Federal budgetary involvement [H6c] actually had the opposite of the hypothesized effect for the three models it was significant for. The competing argument for federal involvement would suggest that it forces others out instead of facilitating interaction, and that is supported with these findings.

Legislative professionalism [H6e] also had the opposite of the hypothesized effect on the frequency of *information seeking* from both the governor's staff and clientele. A more professional legislature increased administrative contact with certain actors (citizens, state interest groups) while decreasing information seeking from others (governor's staff, clientele). Professionalism in the state legislatures in regards to their comparative capacity with the bureaucracy is an interesting avenue for further study. The combined effects of these institutions on governance and implementation may explain much of the variability seen in state politics.

In modeling *information seeking* from particular political actors, the one constant (at least across the five actors examined here) is that each relationship is affected by different factors

relating to *capacity*, *exposure*, or the presence of *competing interests*. Many hypothesized relationships did not meet statistical significance, and several control variables predict *information seeking* that do not seem readily intuitive based on current literature. Examining the other political actors for relevant indicators will be a step for further research. The different effects of the same variables on frequency of *contact* and *information seeking* will be an informative avenue for comparing and categorizing the actors in the information environment. For this study, the next step is to consider how the predictor variables and frequency of *information seeking* by state agency heads can be modeled aggregately to further understand the utilization of the information environment.

Inclusivity of Information Sources

The final stage of this research focuses on what factors could potentially lead a state administrator towards being more or less *inclusive* in seeking information. Time is a valuable commodity to the people who run state agencies. If they choose to seek out information themselves, are they seeking it from one source or from many? This concept of *inclusiveness* can be defined as the number of frequent information sources outside of the agency that a state administrator utilizes for program or policy specific information. What happens within this process of information seeking is important because the act of gathering information leads to knowledge or confirmation of beliefs. State administrators then use this information in decision making.

State agency heads who seek information from many different sources could be said to be more “inclusive” towards their information environment. Frequent information from various sources could lead to a more democratic, pluralist understanding of state bureaucracies. However, traditional ideas of a professional bureaucracy isolated from political pressure would be compromised. In reality however, interest groups are known to selectively lobby state agency heads (Sorge 2015), governors and legislatures institute a variety of mechanisms to control and oversee bureaucracies (Lewis, Schneider, and Jacoby 2015; Ringquist, Worsham, and Eisner 2003), and citizens and clientele have more interaction with agency employees than any other outlet of government. Forming a rational, realistic view of the *inclusiveness* of state administrators is a valuable addition to understanding bureaucratic behavior and decision making.

Describing Inclusiveness

To create the variable of “inclusiveness,” the number of actors that an administrator seeks information from on a frequent basis were added together. This result ranged from 0 to 10, and simple frequency counts are presented in Table 4.17. Over one-third of the administrators in the sample do not frequently seek out information from any outside source.

TABLE 4.17
INCLUSIVE VARIABLE

Number of Actors Frequently Sought for Information	Frequency	Percent
0	39	37
1	24	23
2	14	13
3	7	7
4	6	6
5	3	3
6	4	4
7	5	5
8	2	2
9	0	0
10	1	1
	n=105	100%

Explaining Inclusiveness

While it is valuable to know who state administrators have contact with and seek out for information, the number of different sources that are consulted is a completely different concept that elucidates the patterns and connections within a policy network or information environment. Building on the previous discussions about *contact* frequency and *information seeking*, this final research question asks:

RQ3 *Inclusiveness*: Do state agency heads vary in their levels of inclusiveness in regards to their information environments and information-seeking behaviors across policy and program areas throughout the states? How does this vary based on individual, agency, or state variations?

Consistent with prior analyses, three hypotheses are proposed for inclusiveness that deal with *exposure* [H7] to external information sources, the *capacity* [H8] of the individual's agency, and the *competing interests* [H9] within the state. For *exposure* it is hypothesized that:

H7a: Increased years within the agency will increase inclusiveness.

H7b: Experience outside of state government will increase inclusiveness.

Capacity suggests that:

H8a: Larger staffs will increase inclusiveness.

H8b: Greater budgetary resources will increase inclusiveness.

And finally, the variables hypothesized to increase *inclusiveness* through the presence of *competing interests* within the state are:

H9a: Being appointed by a board/commission will increase inclusiveness.

H9b: Inclusiveness will vary based on agency type.

H9c: Budgets comprised of greater percentages of federal funds will increase the inclusiveness of the agency heads.

H9d: The presence of divided government in a state will increase inclusiveness by state agency heads within that state.

H9e: The absence of term limits will increase inclusiveness.

Results

The summary statistics show that the data for *inclusiveness* is overdispersed at zero. Using COUNTFIT in Stata, a negative binomial regression was shown to be the preferred count model. The negative binomial regression allows for overdispersion at zero. The small sample size and cross-classification of the data do not allow for a multi-level statistical model so the parameters were ran for different levels of measurements. They were then ran together as the full model to observe changes in significant influences on *inclusiveness*. Table 4.18 presents the results of models at the individual, agency, and state level as well as a partial model (individual and agency) and the full model with all three levels of variables.

TABLE 4.18
INCLUSIVITY OF INFORMATION SOURCES
 NEGATIVE BINOMIAL REGRESSION RESULTS

	Model 1 Individual Level	Model 2 Agency Level	Model 3 State Level	Model 4 Ind. and Agency	Model 5 FULL MODEL
<i>Administrator Level</i>					
Governor appointed	.48** (.25)			.47* (.26)	.21 (.27)
Years employed in current agency	-.01 (.01)			.01 (.02)	.01 (.02)
Experience outside current state government	.63 (.43)			.61 (.43)	.77* (.42)
Liberal/Democrat affiliation	.58** (.27)			.55** (.26)	.33 (.26)
Age	-.03 (.02)			-.03* (.02)	-.02 (.01)
Constant	.84 (.82)				
<i>Agency Level</i>					
Environment/Energy Agency		-.55* (.34)		-.60* (.35)	-.41 (.34)
Income Security/Social Services		.16 (.28)		.06 (.28)	.18 (.27)
Staff Size		-.17 (.13)		-.15 (.13)	-.19 (.13)
Budget Size		.12** (.06)		.09 (.06)	.13** (.06)
Federal Fiscal Involvement		-.11 (.38)		-.09 (.09)	-.06 (.10)
Constant		.86** (.38)		1.19 (.96)	
<i>State Level</i>					
Population Size			.02 (.02)		.01 (.02)
Government Ideology			-.01 (.01)		-.00 (.00)
Term Limits			-.54* (.28)		-.54** (.30)
Divided Government			.84*** (.31)		.72** (.30)
Constant			.45* (.27)		.55 (.93)
	n=105 LR X ² (5)=12.63 Prob>X ² = .03	n=105 LR X ² (5)=9.56 Prob>X ² = .08	n=105 LR X ² (4)=12.91 Prob>X ² = .03	n=105 LR X ² (10)=19.86 Prob>X ² = .03	n=105 LR X ² (14)=29.46 Prob>X ² = .01

Notes: Numbers are coefficients from Negative Binomial Regression. Standard errors in parenthesis.

*** p < .01; ** p < .05; * p < .10

In examining individual, agency, or state variables in isolation, several variables appear to exert an impact on the number of frequent information sources of a state agency head. At the individual level, appointment by the governor and personal liberal ideology both increase the level of inclusiveness. At the agency level, type of agency (Environment/Energy) and budget size also positively influenced inclusiveness. At the state level, term limits and divided government have the hypothesized effects. Because none of these models take into account a full measure of the environment of a state administrator, the full model and its results are preferred for analysis of the preceding hypotheses about *exposure*, *capacity*, and *competing interests*.

For *exposure*, having experience outside of the state agency [H7b] in which an administrator currently works more than doubles the number of frequent information sources of a state agency head. Experience outside of government could provide more connections, knowledge about more actors, and indicators about the information they may be available to provide. This supports the idea that exposure to members of the information environment, through work outside of state government bureaucracy, increases an administrator's desire to seek sources outside of the agency. Increased experience inside an agency [H7a] was not a significant predictor variable.

Agency *capacity* as measured by staff size [H8a] does not have an effect on inclusiveness but budget size [H8b] does. Greater monetary resources within the agency increases inclusiveness of information sources. A one level increase in the budget categories translates to 13% more information sources for a state administrator. This is interesting in light of the negative effect of budget on *contact* and the absence of an effect on most of the *information seeking* models.

The final hypotheses for *inclusiveness* measures the presence of *competing interests* within a state administrator's information environment. Of the five measurements, divided government and term limits had significant effects in the hypothesized directions. An administrator in a state with separate parties controlling the state house and the governor's house has twice as many information sources as administrators in unified states. Unified party control in a state government provides clear priorities and policy objectives. An administrator within such a state has less need to include information sources because the major players, ideally, all have the same prerogatives.

Legislative restraint as measured through the presence of term limits was significant and negative. The hypothesis that a lack of term limits will increase competing interests, through a potentially more career legislature, is supported. Working in a state with legislative term limits decreases information sources by 42% for administrators within that state. Term limited legislators have a finite amount of time to push their agendas and develop expertise. Established networks are continually changing and break down as important political players move out of the state house. In a comparative capacity, the expertise and influence of state agencies will be greater in a term limited state. This would lessen the need to seek out information sources in an effort to appease competing political forces.

Discussion

From a normative perspective, arguments both for and against the inclusiveness of a state agency head with external sources from the information environment have validity. While these are beyond the scope of consideration in this paper, this data can explore some of the actions of state administrators and the factors that potentially motivate or spur information behaviors.

Predicted probabilities based on the full model are presented below in Table 4.19. This takes the high and low end of three predictor variables and estimates the likelihood of an administrator with those characteristics having each potential number of information sources.

TABLE 4.19
PREDICTED PROBABILITIES FOR LEVEL OF INCLUSIVENESS

Typical Administrator with: 1) Experience outside state gov't 2) Agency budget at \$150 million 3) In a state with divided government	Likelihood of the Number of Frequent Sources an Administrator Seeks Out	Typical Administrator with: 1) No outside experience 2) Agency budget at \$5 million 3) In a state with unified government
.18	0	.72
.19	1	.21
.16	2	.05
.13	3	.01
.10	4	.00
.07	5	.00
.05	6	.00
.04	7	.00
.03	8	.00
.02	9	.00

The numbers in the left and right columns of Table 4.19 provide the predicted probability of having each given number of information sources given the characteristics listed at the top of the chart. Knowing the answers to three questions about the administrator, the agency, and the state does not provide perfectly predicted information, but does elucidate the general inclusiveness of a state agency head towards frequent information sources. The positive predictor variables have considerable variation while the negative variable is highly illustrative about the likelihood of no frequent information sources.

Having no outside experience, a small budget, and operating in a state with unified government predicts that an administrator has a 72% likelihood of having zero frequent

information sources. This does not mean that they never seek out information. If and when they do, it is occasionally or rarely. An administrator in this type of position could be considered very neutral or exclusive and does not personally seek information from outside his or her agency. No experience outside of state government may limit knowledge of potential information sources. In a unified government, little party competition occurs to spur information seeking. The probability of having more than two frequent information sources is less than one percent.

Having personal experience outside government, a larger agency budget, and divided government in the state results in an 18% probability of an agency head having no frequent information sources. It is much more likely that he or she will have two or more information sources. Experience provides contacts and networking relationships that someone without that exposure would not know about. Small budgets could reduce capacity which reduces the resource of time for an administrator to pursue outside knowledge. Divided government creates pressure to serve two political principals with typically divergent views on policy and program priorities. Although the individual effects of the significant variables is small, taken together they can highlight a significant difference on the likelihood of inclusiveness within an information environment.

Figure 6 arranges the significant variables from Table 4.18 to highlight the directional effect and significance of the predictor variables. While the models of *contact* and *information seeking* found variables significant but in the opposite of the hypothesized direction, *exposure*, *capacity*, and *competing interests* all increased the level of inclusiveness of a state administrator as hypothesized. None of the measures had a negative impact.

FIGURE 6
SIGNIFICANT HYPOTHESIZED VARIABLES FOR
INCLUSIVENESS

EXPOSURE	
Years employed in current agency	
Experience outside current state govt	+
CAPACITY	
Staff Size	
Budget Size	+
COMPETING INTERESTS	
Board/Commission Appointment	
Environment/Energy Agency	
Income Security/Social Services Agency	
Divided Government	+
Federal Fiscal Involvement	
No Term Limits	+

Figure 6 highlights the direction and significance of each of the predictor variables on increasing the inclusiveness of outside information sources. Outside experience, budget size, divided government, and the absence of term limits all positively influence the number of frequent outside information sources that a state agency head has. Tenure within an agency, staff size, and appointment type were not significant. Agency type and federal funding, two variables that were important for models of *contact* and *information seeking* were also insignificant for predicting *inclusiveness*. While the three levels of analysis seem similar, the results show that different variables influence the interactions and behaviors in different ways.

Conclusion

This chapter has provided the results from several models to examine the behaviors of state agency heads within their information environments. Concepts related to individual *exposure* to actors, agency *capacity* and resources, and the presence of *competing interests* in the state and the agency environment were examined individually and collectively to provide

understanding regarding the factors that influence administrative behavior. Although the results of the analysis confirmed several hypotheses, there is still considerable room for future research specifically in relation to those variables which showed to decrease information seeking and contact on the part of the state agency head or those that switched directional effects. Chapter 5 will provide a summary of the overall research as well as a discussion of possible implications and future research.

CHAPTER FIVE: CONCLUSION

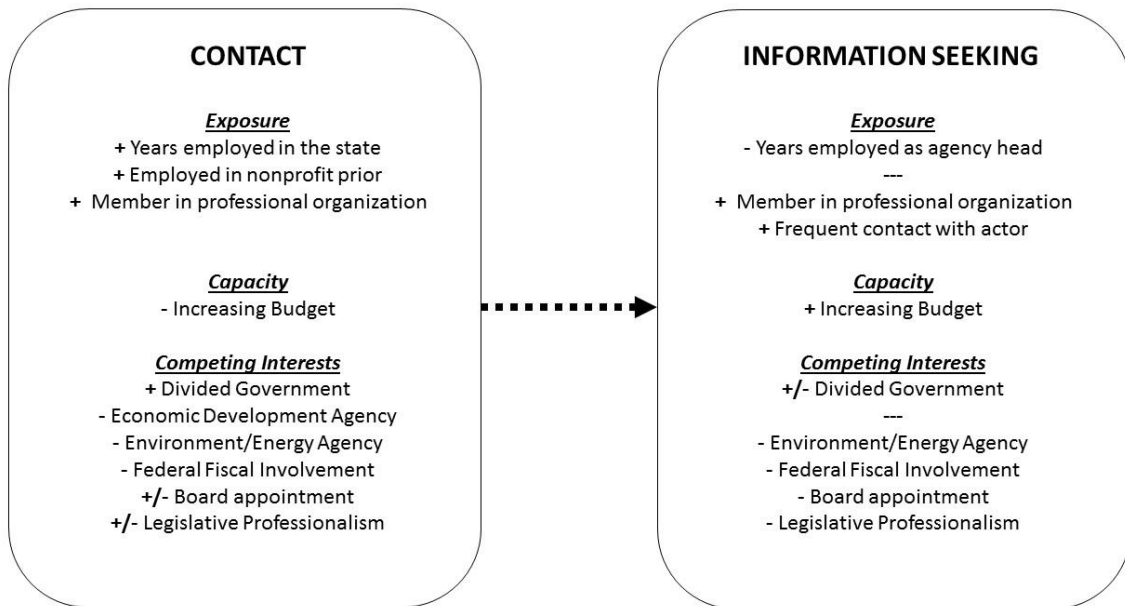
Agency and state environments have significant impacts on the political and policy processes that are carried out at the federal and state level. The job of a state administrator is so varied and vast that understanding influences, important political actors, contact with other individuals and institutions, and information transference is a complicated task. The concept of an information environment aids in awareness of all of the potential sources that a state administrator (and other political actors) have at their disposal when making decisions about information, preferences, or behaviors. This study was a first step in elucidating the interactions and choices that state agency heads make within their role at the nexus between the practical and the political aspects of government. This chapter summarizes the results of the research findings, presents opportunities for further inquiry, and discusses contributions to existing literature.

Influences on Contact, Information Seeking, and Inclusiveness

Questions of contact, information seeking, and inclusiveness are important in understanding the landscape of administration at the state agency level. This research explores relationships between state administrators and other actors in their information environments by focusing on two basic types of interaction. Taken together, the results for *contact*, *information seeking*, and *inclusiveness* show similarities across the three measures that support assumptions about bureaucratic influences. Differences and contradicting directions suggest areas for future exploration. Figure 7 shows the significant variables measuring *exposure*, *capacity*, and *competing interests* for any of the modeled relationships of *contact* and *information seeking*.

Because frequent contact was shown to be a predictor of frequent information seeking, the dashed arrow suggests a relationship between the two activities.

FIGURE 7
SIGNIFICANT VARIABLES AFFECTING MODELS OF CONTACT AND INFORMATION SEEKING



Variables related to *exposure* are significant in some of the models of both *contact* and *information seeking*. All of these measures increased frequency except agency head tenure. The longer an administrator serves as an agency head, the less likely he or she is to seek out information from citizens. This is the only hypothesized *exposure* variable to be significant but negative. More experience as an agency head may decrease the desire or need of an administrator to seek out information from citizens. This relationship may need to be modeled differently from all the others and explored further to understand how different types of experiences provide exposure to actors in the information environment.

The positive findings for employment in state government, experience in the nonprofit sector, membership in professional organizations, and frequent contact support the main hypothesis that *exposure* to members of the information environment increases *contact* and *information seeking*. This reinforces research into the benefits of networking and linking organizations.

Budget was the only agency *capacity* variable that achieved significance. Increased budgets were hypothesized to increase *contact* and *information seeking* frequency because slack resources can provide more resources in another area, such as time. Administrators with more discretionary time may use it to seek out contacts and information on their own instead of through agency resources. With reference to *contact*, larger budgets (when significant) actually reduced frequency of contact with several actors. This supports the competing idea that an increased budget increases demands on the administrator, disallowing discretion in the amount of contact one has with other actors. In models for *information seeking*, however, budget size did positively influence the frequency of the interactions with the governor's staff. This indicates a possible increase in power or influence with one political principal because of monetary resources.

As a measureable concept, *capacity* can be difficult. Different types of capacity measure anything relating to fiscal, human, information, or time resources. The competing signs for budgetary resources suggest that the way these measures influence each other, or relative capacity, is important for further study.

The presence of *competing interests* within a state political environment were suggested to increase the frequency of interactions with outside sources as bureaucrats attempt to navigate opposing ideologies and preferences. For *contact* frequency, only divided government had the

hypothesized positive effect for one actor, and in the models of *information seeking* it was significant and positive for three relationships with citizens being in a negative direction. This measure of competition then may influence information seeking in a different way for that source.

Board appointment and legislative professionalism had significant but competing directional influences on *contact* frequency with the modeled actors. When significant for *information seeking* however, they were both negative. While *contact* could be increased by competing interests, information seeking is actually decreased. This speaks to the idea that administrators insulate themselves from perceived political pressures to appear neutral and bipartisan.

The anticipated agency effect for *competing interests* was displayed through the negative relationship between two types of agencies, Economic Development and Environment/Energy, and *contact* frequency with outside actors. The contacts within the information environments of these types of agencies thus differ significantly from the other agencies in the sample. However, *information seeking* behavior was only influenced by one type of agency (Environment/Energy) in one of the five models (state interest groups) leading to the conclusion that while contact may be influenced by agency environment, administrators' choices to seek information within their environment are not.

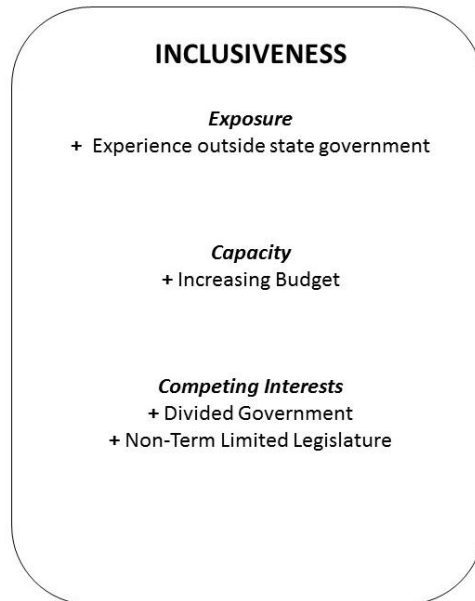
Federal fiscal involvement had a significant but negative influence on both types of outcomes. This suggests that the federal government, through providing monetary assistance, actually pushes other actors out of the information environment instead of facilitating more interaction through an additional competing interest.

The concept of *inclusiveness* aggregates the number of frequent sources that an administrator contacts for information relevant to the policy area. Theoretical arguments exist both for and against a state agency head's inclusiveness towards other actors. On one hand, bureaucrats are supposed to be neutral implementers of government programs and policies. The inclusion of industry executives in his frequent contacts was the problem for EPA administrator Scott Pruitt in the anecdote at the beginning of this study. Would there have been an interesting story if he had no contacts or evenly distributed contacts with various interested parties?

The opposing viewpoint is one couched in ideas of representative bureaucracy and the power of administrators within a democratic society. Instead of being removed from competing interests, administrators can be proponents for the interests of themselves or issues and ideas that they care about. In this vein, administrators are another important point of access for the general public or any interested party. Inclusiveness was examined for factors that would increase the number of frequent information sources that an administrator seeks out. Figure 8 displays the significant variables for that portion of analysis.

Across all measures of *exposure*, *capacity*, and *competing* interests, the significant variables had the hypothesized positive effects. Experience outside of state government increased the likelihood of having more frequent information sources from the information environment. Larger budgets result in more inclusiveness by agency heads despite negative influences on *contact* and *information seeking* from specific actors. While a larger budget increases the capacity of an agency and its agency head in some respects, it hampers it in others. Further research into agency capacity and its potential mechanisms for influences is warranted.

FIGURE 8
SIGNIFICANT VARIABLES AFFECTING INCLUSIVENESS



Divided government and the absence of term limits as measures of *competing interests* in the environment of an agency administrator increased inclusiveness. While this was not seen for the first two phases of analysis, modeling the other relationships between administrators and the other 16 actors may show different effects. The lack of an agency effect in both the *information seeking* and *inclusiveness* models suggests that these activities by state administrators may be more uniform across the agencies and across the states than other behaviors that have been examined in prior research.

This research was largely exploratory in nature and one of the first of its kind to attempt to create a generalizable model for understanding bureaucratic behavior outside of particular programs, policies, or diffusion. The purpose of this study was to identify the actors with the most contact with state agency heads and the actors that those administrators seek out for information. Influences of different state, agency, and individual level variables on those

relationships were examined. The three guiding hypotheses of *exposure*, *capacity*, and *competing interests* were informative across the models of frequency of *contact*, frequency of *information seeking*, and *inclusiveness*. The resulting direction of the significant effects were varied, however. This suggests that while these interactions and behaviors seem similar, different circumstances influence an administrator's utilization of members of the information environment.

Future Avenues of Inquiry

This study was an important first step in understanding how individual traits, agency characteristics, and state environments influence *contact*, *information seeking*, and *inclusiveness* with actors in the information environment. In addition to the explanatory variables used here to measure *exposure*, *capacity*, and *competing interests*, future research will seek to identify other variables that may impact the actions of administrators as well as possible interaction terms. Discussions of agency capacity typically examine the availability of resources such as time, money, staff, or information. These results suggest that contact and information seeking are influenced in some way by this but better measurements and definitions are needed. The competing directions of the effects of age and experience also warrant future study to understand what is happening and the location of the “tipping point” when age begins to negatively influence the positive effects of experience on the variables in question.

Why does the “agency effect” that is so often confirmed in other areas of research absent for information seeking behaviors and inclusiveness? An initial thought was that it could be a product of the sample acquired in this study. However, the measure of contact *did* show a

significant agency effect similar to previous research about this same question with similar samples of state agency heads.

Additionally, is inclusiveness a characteristic we should value? Would this be a way to measure democratic representation in bureaucracy? Or should agencies and their administrators be insulated from the potential of political pressure that come from outside information sources? Policy networks and networked governance are becoming entrenched in the way that government is administered in the United States. Understanding what is and should be valued for bureaucratic behavior is an important consideration.

The next avenue for research includes modeling all 21 *contact* and *information seeking* relationships to identify those variables which effect each relationship. A model based on type of actor could be beneficial to further classify the rings that form the information environment. The variability of contacts and information sources suggest a group of “usual suspects” supplemented by occasional information actors. Additionally, a variable for “exclusiveness” would be informative in contrast to the one of *inclusiveness* considered for this research. Are the characteristics that make a state administrator more likely to include information sources the same as those that make them “never” seek out certain members of the information environment? Fewer actors, an exclusive environment, could indicate adherence to the status quo, strict control of information and resources, and less interest in innovation or change. An inclusive information environment could suggest receptivity to new ideas, increased participation in governance, and perhaps adaptability. Although outside the scope of this study, this information could then be used to address questions of political participation, governance, and outcomes across the states in various policy areas. This could also provide information pertinent to diffusion studies and the adoption or non-adoption of administrative reforms.

One challenge in studying bureaucratic decision making and interactions is the ability to generalize across types of agencies and states. One way to tease out these effects would be an increased sample size that allows for multi-level modeling. The cross-classification of administrators within several types of agencies across 50 states requires a significant number of observations within each category to accurately measure agency and state effects. Collecting information from more agency heads or from only particular states will allow for a sufficient sample to use more advanced statistical modeling.

This study was limited to examining the relationships between agency heads and the top five most frequent actors. One way to further this research is to examine actors individually and explore those factors related to different levels (frequent, occasional, never) of contact or information seeking. Another informative avenue would be to classify the entities within the information environment to see how explanatory variables may differ. A categorization of this nature may explain the difference directional impact of the predictor variables used here for models of governor's staff and citizens. Modeling each relationship individually would provide a basis for this type of classification and future research.

Contact frequency is a measure of interaction with other actors in the information environment. Information seeking specifies one form that these interactions can take. Table 5.1 displays the percentage of the sample that indicated frequent contact versus frequent information seeking for each of the relationships. The column on the right of Table 5.1 shows the difference between these two numbers, or the amount of contact that is potentially something other than information seeking on the part of the state agency head.

TABLE 5.1
COMPARISON OF FREQUENT CONTACT AND FREQUENT INFORMATION SEEKING BY ACTOR
 Percentage of Sample Administrators Indicating Frequent Category

	Percentage Indicating Frequent Contact with...	Percentage Indicating Frequent Information Seeking from...	Percentage Difference
Administrator-same state	78	33	45
Clientele	66	22	44
Citizens	59	19	40
Governor's Staff	48	25	23
Interest Group-state	36	13	23
Legislator	35	3	32
Legislator's Staff	32	8	24
Nonprofit-state	27	6	21
Professional Association	26	11	15
Policy Advocate-state	23	12	11
Nonprofit-local	22	10	12
Local Official	18	7	11
Administrator-different state	17	4	13
Administrator-national	13	7	6
National Official	7	3	4
Governor	7	3	4
Interest Group-national	5	1	4
Academic	4	5	+1
Nonprofit-national	4	1	3
Policy Advocate-national	2	0	2
Think Tank	2	0	2

What kind of interactions are happening during these other contacts? For some of the actor interactions, information seeking is the majority of activities but for others it is not. This is one area of future research to be examined. In addition to seeking information from actors in the information environment, what is the impetus for other forms of frequent contact? And, are these variations different based on either type of agency or type of actor? One way to continue to study the flow of information specifically within these information environments will be to examine the frequency with which state agency heads are *providing* information to these other actors as a percentage of contacts. Then, outside of information flow, what else is occurring?

Because the policy environment is saturated with information, the ability to winnow and evaluate actual information as well as information sources becomes an important skill (Baumgartner and Jones 2009). A supplementary question in the survey administered to the sample asked how important they viewed the information they solicited from the various actors. This variable could be insightful about why some sources are frequently utilized and others not. Comparing importance and frequency will be a valuable component to the next phase of this research.

Information Environments in Theoretical and Practical Contexts

Information environments are an important concept. There are a myriad of sources available to state agency heads for information in their areas of expertise. Who they choose to seek out as well as who they interact with has potential consequences for individuals, groups, politicians, and progress in their respective states. Bureaucrats, as experts on both their state environments and their policy areas, are an important link in the discussion of where knowledge about a new or innovative policy or program originates. Whereas network and diffusion research examine those who are involved in an area or activity, information environments consider all the possible sources or actors. Those who are excluded are an important piece of process as well.

Individual behaviors and decisions are influenced by the context of the states and agencies that administrators operate within. Personal characteristics play a large role in the views, attitudes, beliefs, and actions of administrators. While most research on the state bureaucracy is at the institutional level, it is imperative that individual characteristics are taken into account when considering learning and decision making processes. By thinking about information environments as a starting point for administrative choices, the variables that

influence their decisions can be modeled across different states and agencies without consideration of highly particularized program or policy innovations or diffusions.

Adding to the Literature

Networks are an important component of understanding the interconnected, intergovernmental arrangement of governance and implementation in the United States today. This study adds to the network literature by examining contact and information flow outside the boundaries of a network analysis or diffusion study. An information environment is constant and unchanging. What changes is the administrator's use of different actors within his or her information environment. This highlights the important choices that bureaucrats make in who to include or exclude in the everyday running of state programs.

Research shows that networking behaviors (like information seeking and inclusiveness here) can improve agency performance, for example with school performance (Meier and O'Toole 2001), arrest rates (Nicholson-Crotty and O'Toole 2004), in nonprofits (Johansen and LeRoux 2013), and in other organizations (Klijn, Steijn, and Edelenbos 2010). Other studies have found negative or insignificant effects of increased networking based on measurements of success (Walker, Berry, and Avellaneda 2015).

The application of principal-agent models to bureaucracy, specifically at the federal level, can provide understanding about the relative influence and power of multiple principals in government. This is difficult to systematically study at the state and local level. The research presented here highlights the importance of information, a key source of power for bureaucratic agents, and examines where it may come from. The effects of legislative professionalism and divided government throughout the models suggest that competing principals in the states do

have an effect on the behaviors of the state agency heads running state agencies. State interest groups as a top five contact and information source indicate their significant yet understudied influence. The variations in contact with elected principals, or their proxies, suggest that other avenues of influence or control may need to be examined at the state level to understand how these formal models of principal-agent interactions are playing out across the states.

The impetus for the research questions addressed in this study was a quest to understand the role that state bureaucrats can play in policy diffusion. Diffusion research focuses on specific policies and the effects of individual, agency, or state characteristics on adoption, non-adoption, or changes. Bureaucratic influence has been identified as a contributing factor in some of these studies (Balla 2001; Mintrom and Vergari 1998; Nicholson-Crotty 2005; Parinandi 2013; Teodoro 2009). State agency heads are a consistent actor within issue networks outside of the diffusion or innovation of policies, however. This research adds to the diffusion and policy process literature by describing and modeling interactions that happen in the real world setting of administration. These linkages may provide initial information for decisions (and non-decisions) about potential changes or innovations as well as focusing the policy agendas within the states.

Adding to Theories of Government

What does it mean that citizens and clientele frequently interact with state agency heads? What about their roles within the top five information sources for administrators? The state executives sampled here are actively engaged with the people they serve. This research shows that the bureaucracy is a point of access for the public. Pluralist conceptions of democracy are bolstered by the findings here. Outlets for influence and interaction outside of the traditional voting and political behaviors exist, and some actors are taking advantage of them. These need to

be acknowledged and considered within studies on bureaucracy, federalism, and the policy process.

Active participation with the bureaucracy by citizens, clientele, and interest groups support pluralist views of democracy. Bureaucrats, here at the state level, are playing an important function in democracy through responsiveness and consideration to different groups. The presence of these actors from the information environment at the top of the lists for both contact and information seeking signals a level of importance to their interaction and information by state administrators, more than the other actors that are often assumed to be important (for example, the governor or federal administrators).

The lack of frequent contact and information seeking with federal officials and national policy actors is a very different conceptualization than that of picket fence federalism and top-down diffusion. The pivotal role that federal actors play in these theories does not come through in the data presented here. This suggests that their role is regulated to rare events and not an active part of the ongoing policy process at the state level. Diffusion studies and research on innovation consistently find influential federal actors. This difference between the business-as-usual environment that most bureaucrats function in and the specialized environments and interactions that occur during diffusion or innovation is one of the central guiding concepts for this study and future research about bureaucratic information environments.

Concluding Thoughts

State agency heads are key actors at a uniquely central point in the policy and administrative processes. They are making choices about granting access and seeking out information on a daily basis. They choose to seek out information on their own and choose to

illicit it from some actors and exclude others. As Administrator Pruitt learned early in his time at the Environmental Protection Agency, administrators and their decisions are judged by their contacts and the information they possibly receive during them.

Mainstream media, citizens, and scholars alike all assume that access equals some level of importance when it comes to influence within the political and administrative schemes of American government. State agency heads make decisions every day about how to process information and what to do with it in regards to the programs and policies they oversee. Understanding the choices they make and the factors that may be affecting their decisions is important in understanding what is happening at the state level, an oftentimes overlooked level of administration.

References

- Agranoff, Robert. 2006. Inside Collaborative Networks: Ten Lessons for Public Managers. *Public Administration Review* 66(1):56-65.
- Alexander, Damon, Jenny M. Lewis, and Mark Considine. 2011. How Politicians and Bureaucrats Network: A Comparison across Governments. *Public Administration* 89(4): 1274-1292.
- Allen, Mahalley D. 2005. Laying Down the Law? Interest Group Influence on State Adoption of Animal Cruelty Felony Laws. *The Policy Studies Journal* 33(3): 443-457.
- Balla, Steven J. 2001. Interstate Professional Associations and the Diffusion of Policy Innovations. *American Politics Research* 29(3):221-245.
- Baumgartner, Frank R. and Bryan D. Jones. 2009. *Agendas and Instability in American Politics*. 2nd ed. Chicago: University of Chicago Press.
- Bennett, Colin J. and Michael Howlett. 1992. The Lessons of Learning: Reconciling Theories of Policy Learning and Policy Change. *Policy Sciences* 25:275-294.
- Berry, Frances Stokes. 1994. Innovation in Public Management: The Adoption of Strategic Planning. *Public Administration Review* 54(4): 322-30.
- Berry, Francis Stokes, and William D. Berry. 1999. Innovation and diffusion models in policy research. In *Theories of the Policy Process*, ed. Paul A. Sabatier, 169-200. Boulder, CO: Westview Press.
- Berry, William D., Evan J. Ringquist, Richard C. Fording, and Russell L. Hanson. 1998. Measuring Citizen and Government Ideology in the American States, 1960-93*. *American Journal of Political Science* 42(1) 327-348.
- Berry, William D., Richard C. Fording, Evan J. Ringquist, Russell L. Hanson, and Carl E. Klarner. 2010. Measuring Citizen and Government Ideology in the U.S. States: A Re-appraisal. *State Politics and Policy Quarterly* 10(2): 117-135.
- Bingham, Lisa Blomgren and Rosemary O'Leary. 2008. *Big Ideas in Collaborative Public Management*. Armonk, New York: M. E. Sharpe.
- Boehmke, Frederick J. 2009. Approaches to Modeling the Adoption and Diffusion of Policies with Multiple Components. *State Politics and Policy Quarterly* 9(2): 229-252.
- Boehmke, Frederick J. and Richard Witmer. 2004. Disentangling Diffusion: The Effects of Social Learning and Economic Competition on State Policy Innovation and Expansion. *Political Research Quarterly* 57(1): 39-51.

- Borgatti, Stephen P. and Rob Cross. 2003. A Relational View of Information Seeking and Learning in Social Networks. *Management Science* 49(4): 432-445.
- Bouche, Vanessa and Craig Volden. 2011. Privatization and the Diffusion of Innovations. *The Journal of Politics* 73(2):428-442.
- Boushey, Graeme. 2012. Punctuated Equilibrium Theory and the Diffusion of Innovations. *Policy Studies Journal* 40(1):127-146.
- Boushey, Graeme T. and Robert J. McGrath. 2017. Experts, Amateurs, and Bureaucratic Influence in the American States. *Journal of Public Administration Research and Theory* 27(1):85-103.
- Bowling, Cynthia J. and Deil S. Wright. 1998. Change and Continuity in State Administration: Administrative Leadership across Four Decade. *Public Administration Review* 58(5):429-444.
- Brudney, Jeffrey, Cynthia J. Bowling and Deil S. Wright. 2010. Continuity and Change in Public Administration Across the Fifty States: Linking Practice, Theory, and Research Through The American State Administrators Project, 1964-2008. *Public Administration Review* (online version) 70(1):1-35.
- Brudney, Jeffrey L. and F. Ted Hebert. 1987. State Agencies and Their Environments: Examining the Influence of Important External Actors. *The Journal of Politics* 49(1): 186-206.
- Brudney, Jeffrey L., F. Ted Hebert, and Deil S. Wright. 2000. From Organizational Values to Organizational Roles: Examining Representative Bureaucracy in State Administration. *Journal of Public Administration Research and Theory* 10(3): 491-512.
- Butz, Adam M., Michael P. Fix, and Joshua L. Mitchell. 2015. Policy Learning and the Diffusion of Stand Your Ground Laws. *Politics and Policy* 43 (3): 347-377.
- Clinton, Joshua D., David E. Lewis, and Jennifer L. Selin. 2014. Influencing the Bureaucracy: The Irony of Congressional Oversight. *American Journal of Political Science* 58(2):387-401.
- Council of State Governments. 2016a. *The Book of the States*. <http://knowledgecenter.csg.org/kc/category/content-type/bos-2016> Lexington, KY: The Council of State Governments.
- Council of State Governments. 2016b. *State Directory: Directory III-Administrative Officials 2016*. Lexington, KY: The Council of State Governments.
- Daviter, Falk. 2015. The Political Use of Knowledge in the Policy Process. *Policy Sciences* 48(4): 491-505.
- Desmaris, Bruce A., Jeffrey J. Harden, and Frederick J. Boehmke. 2015. Persistent Policy Pathways: Inferring Diffusion Networks in the American States. *American Political Science Review* 109(2): 392-406.

- Dolowitz, David. 2008. Learning by Observing: Surveying the International Arena. *Policy and Politics* 37(3) 317-334.
- Dometrius, Nelson C., Cynthia Bowling, Margaret R. Ferguson, and Deil S. Wright. 2013. State-Level Measures of Institutional Budgetary Influence from the American State Administrators Project: 1964-98. *State Politics and Policy Quarterly* 13(1):107-20.
- Dometrius, Nelson C., Brendan F. Burke, and Deil S. Wright. 2008. Strategies for Measuring Influence over State Agencies. *State Politics and Policy Quarterly* 8(1):88-100.
- Dometrius, Nelson C. and Deil S. Wright. 2010. Governors, Legislatures, and State Budgets across Time. *Political Research Quarterly* 63(4):783-95.
- Dunlop, Claire A. and Claudio M. Radaelli. 2013. Systematising Policy Learning: From Monolith to Dimensions. *Political Studies* 61: 599-619.
- Easterly, Bianca. 2015. Playing Politics with Sex Offender Laws: An Event History Analysis of the Initial Community Notification Laws across American States. *Policy Studies Journal* 43(3): 355-378.
- Elazar, Daniel. 1984. *American Federalism: A View from the States* 4th ed. New York: Harper and Row.
- Garrett, Kristin N. and Joshua M. Jansa. 2015. Interest Group Influence in Policy Diffusion Networks. *State Politics and Policy Quarterly* 15(3): 387-417.
- Gerber, Elisabeth R. and Daniel J. Hopkins 2011. When Mayors Matter: Estimating the Impact of Mayoral Partisanship on City Policy. *American Journal of Political Science* 55(2): 326-339.
- Granovetter, Mark S. 1973. The Strength of Weak Tie. *American Journal of Sociology*. 78(6):1360-1380.
- Gray, Virginia. 1973. Innovation in the American States: A Diffusion Study. *American Political Science Review* 67(4):1174-1185.
- Gray, Virginia. 2013. The Socioeconomic and Political Context of the States. In *Politics in the American States* 10th Ed. Virginia Gray, Russell L. Hanson and Thad Kousser, eds. 1-29. Thousand Oaks, CA: CQPress.
- Gray, Virginia, Russell L. Hanson and Thad Kousser, eds. 2013. *Politics in the American States* 10th Ed. Thousand Oaks, CA: CQPress.
- Green, Miranda and Aaron Kessler. Oct 6 2017. Less than 1% of EPA Administrator's meetings are with Environmental Groups. CNN.

Grossback, Lawrence J., Sean Nicholson-Crotty and David A.M. Peterson. 2004. Ideology and Learning in Policy Diffusion. *American Politics Research* 32(5):521-545.

Hale, Kathleen. 2010. *How Information Matters: Networks and Public Policy Innovation*. Washington, D.C.: Georgetown University Press.

Hardwick, Kisha. 2014. The Interaction of State Administrators and Other Political Actors: Variations in Frequency of Contact by Agency Environment. Paper for Poster Presentation at the 2016 Midwest Political Science Association Conference: Chicago, IL.

Hebert, F. Ted, Jeff L. Brudney, and Deil S. Wright. 1983. Gubernatorial Influence and State Bureaucracy. *American Politics Research* 11(2):243-264.

Heclo, Hugh. 1978. Issue Networks and the Executive Establishment in *The New American System*. Ed. Anthony King. Washington, D.C.: American Enterprise Institute 87-124.

Hicklin, Alisa and Erik Godwin. 2009. Agents of Change: The Role of Public Managers in Public Policy. *Policy Studies Journal* 37(1): 13-20.

Huber, John D. and Charles R. Shipan. 2002. *Deliberate Discretion?* New York: Cambridge University Press.

Jacobson, Willow S., Christine Kelleher Palus, and Cynthia J. Bowling. 2009. A Woman's Touch? Gendered Management and Performance in State Administration. *Journal of Public Administration Research and Theory* 20:477-504.

Jennings, Edward T. and Jeremy Hall. 2011. Evidence-Based Practice and the Use of Information in State Agency Decision-making. *Journal of Public Administration Research and Theory* 22(2):245-266.

Jiminez, Benedict S. 2017. When Ties Bind: Public Managers' Networking Behavior and Municipal Fiscal Health after the Great Recession. *Journal of Public Administration Research and Theory* 27(3):450-467.

Johansen, Morgen, and Kelly LeRoux. 2013. Managerial Networking in Nonprofit Organizations: The Impact of Networking on Organizational and Advocacy Effectiveness. *Public Administration Review*. 73(2):355-363.

Jones, Bryan D. and Frank R. Baumgartner. 2005. *The Politics of Attention: How Government Prioritizes Problems*. Chicago: University of Chicago Press.

Kaufman, Herbert. 2006. *The Forest Ranger: A Study in Administrative Behavior*. Washington DC: Resources for the Future.

Kelleher, Christine A. and Susan Webb Yackee. 2008. A Political Consequence of Contracting: Organized Interests and State Agency Decision Making. *Journal of Public Administration Research and Theory* 19: 579-602.

Kingdon, John W. 1984. *Agendas, Alternatives, and Public Policy*. Boston, MA: Little, Brown, & Co.

Klijn, E.-H. 1997. Policy Networks: An Overview in *Managing Complex Networks: Strategies for the Public Sector* Eds. Walter J.M. Kickert, Erik-Hans Klijn, and Joop F.M. Koppenjan. 15-34. London: SAGE Publications Ltd.

Klijn, Erik-Hans, Bram Steijn, and Jurian Edelenbos. 2010. The Impact of Network Management on Outcomes in Governance Networks. *Public Administration*. 88(4): 1063-1082

Krause, George A. and Neal D. Woods. 2017. Policy Delegation, Comparative Institutional Capacity, and Administrative Politics in the American States. In *Oxford Handbook of State and Local Government* ed. Donald P. Haider-Markel.

Lecy, Jesse D., Ines A. Mergel, and Hans Peter Schmitz. 2014. Networks in Public Administration: Current Scholarship in Review. *Public Management Review* 16(5):643-663.

Lewis, Daniel C., Sandra K. Schneider, and William G. Jacoby. 2015. Institutional Characteristics and State Policy Priorities: The Impact of Legislators and Governors. *State Politics and Policy Quarterly* 15(4): 447-475.

Lipton, Eric and Lisa Friedman. Oct 3 2017. E.P.A. Chief's Calendar: A Stream of Industry Meetings and Trips Home. *The New York Times*.

Liu, Xinsheng, James Stouthenborough, and Arnold Vedlitz. 2017. Bureaucratic Expertise, Overconfidence, and Policy Choice. *Governance* 30:705-725.

Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage Publications.

Long, J. Scott and Jeremy Freese. 2006. *Regression Models for Categorical Dependent Variables Using Stata* 2nd ed. College Station, TX: Stata Press Publication.

Lundin, Martin and Perola Oberg. 2014. Expert Knowledge Use and Deliberation in Local Policy Making. *Policy Sciences* 47(1): 25-49.

Lundin, Martin, Perola Oberg, and Cecilia Josefsson. 2015. Learning from Success: Are Successful Governments Role Models? *Public Administration* 93(3): 733-752.

Maroulis, Spiro. 2017. The Role of Social Network Structure in Street-Level Innovation. *American Review of Public Administration* 47(4) 419-430.

- Marsden, G., K.T. Frick, A.D. May, and E. Deakin. 2011. How Do Cities Approach Policy Innovation and Policy Learning? A Study of 30 Policies in Northern Europe and North American. *Transport Policy* 18:501-512.
- May, Peter J., Chris Koski, and Nicholas Stramp. 2016. Issue Expertise in Policymaking. *Journal of Public Policy* 36(2) 195-218.
- McCubbins, Mathew D. and Thomas Schwartz. 1984. Congressional Oversight Overlooked: Police Patrols versus Fire Alarms. *American Journal of Political Science* 28:165-179.
- McNeal, Ramona S., Caroline Tolbert, Karen Mossberger, and Lisa J. Dotterweich. 2003. Innovating in Digital Government in the American States. *Social Science Quarterly* 84(1) 52-70.
- Meagher, Erin Asher, and Ryan J. Vander Wielen. 2012. The Effects of Party and Agenda Control: Assessing the Ideological Orientation of Legislation Directing Bureaucratic Behavior. *Political Research Quarterly* 65(3):669-84.
- Meier, Kenneth J. and Laurence J. O'Toole Jr. 2001. Managerial Strategies and Behavior in Networks: A Model with Evidence from U.S. Public Education. *Journal of Public Administration Research and Theory* 11(3): 271-294.
- Meier, Kenneth J. and Laurence J. O'Toole Jr. 2006. Political Control versus Bureaucratic Values: Reframing the Debate. *Public Administration Review* 66(2): 177-192.
- Meseguer, Covadonga. 2005 Rational Learning and Bounded Learning in the Diffusion of Policy Innovations. Kellogg Institute Working Paper #316: The Helen Kellogg Institute for International Studies.
- Miller, Gary J. 1992. *Managerial Dilemmas*. New York: Cambridge University Press.
- Miller, Gary J. 2005. The Political Evolution of Principal-Agent Models. *Annual Review of Political Science* 8:203-225.
- Mintrom, Michael. 1997. Policy Entrepreneurs and the Diffusion of Innovation. *American Journal of Political Science* 41(3): 738-770.
- Mintrom, Michael and Phillipa Norman. 2009. Policy Entrepreneurship and Policy Change. *The Policy Studies Journal* 37(4):649-667.
- Mintrom, Michael and Sandra Vergari. 1998. Policy Networks and Innovation Diffusion: The Case of State Education Reforms. *Journal of Politics* 60(1): 126-148.
- Moe, Terry. 2006. Political Control and the Power of the Agent. *Journal of Law, Economics, and Organization* 22(Spring):1-29.

- Moe, Terry M. 2012. Delegation, Control, and the Study of Public Bureaucracy. *The Forum* 10(2): 1-45.
- Montjoy, Robert S. and Douglas J. Watson. 1995. A Case for Reinterpreted Dichotomy of Politics and Administration as a Professional Standard in Council-Manager Government. *Public Administration Review* 55(3): 231-239.
- Mossberger, Karen. 2000. *The Politics of Ideas and the Spread of Enterprise Zones*. Washington D.C.: Georgetown University Press
- Mossberger, Karen and Kathleen Hale 2002. Polydiffusion in Intergovernmental Programs: Information Diffusion in the School-to-Work Network. *American Review of Public Administration* 32(4): 398-422.
- Moynihan, Donald P. and Noel Landuyt. 2009. How Do Public Organizations Learn? Bridging Cultural and Structural Perspectives. *Public Administration Review* 69(6) 1097-1105.
- Moynihan, Donald P. and Sanjay K. Pandey. 2004. Testing How Management Matters in an Era of Government by Performance Management. *Journal of Public Administration Research and Theory* 15(3): 421-439.
- Mufson, Steven and Juliet Ellperin. Sept 23, 2017. EPA Chief Pruitt met with many corporate execs. Then He Made Decisions in Their Favor. *The Washington Post*.
- Nicholson-Crotty, Sean. 2004. Goal Conflict and Fund Diversion in Federal Grants to the States. *American Journal of Political Science* 48(1): 110-122.
- Nicholson-Crotty, Sean. 2005. Bureaucratic Competition in the Policy Process. *The Policy Studies Journal* 33(3) 341-361.
- Nicholson-Crotty, Sean, and Laurence J. O'Toole Jr. 2004. Public Management and Organizational Performance: The Case of Law Enforcement Agencies. *Journal of Public Administration Research and Theory* 14(1):1-18.
- Nownes, Anthony, Clive S. Thomas, and Ronald J. Hrebendar. 2007. Interest Groups in the States. In *Politics in the American States: A Comparative Analysis* 9th ed. Virginia Gray and Russell L. Hanson, eds. 98-126. Washington DC: CQ Press.
- Pacheco, Julianna. 2012. The Social Contagion Model: Exploring the Role of Public Opinion on the Diffusion of Antismoking Legislation across the American States. *Journal of Politics* 74(1):187-202.
- Parinandi, Srinivas. 2013. Conditional Bureaucratic Discretion and State Welfare Diffusion under AFDC. *State Politics and Policy Quarterly* 3(2): 244-61.

- Peterson, Mark A. 1993. Political Influence in the 1990's: From Iron Triangles to Policy Networks. *Journal of Health Politics, Policy and Law* 18(2):395-438.
- Privitera, Gregory J. 2012. *Statistics for the Behavioral Sciences*. Thousand Oaks CA: Sage Publications.
- Ringquist, Evan J., Jeff Worsham, and Marc Allen Eisner. 2003. Saliency, Complexity, and the Legislative Direction of Regulatory Bureaucracies. *Journal of Public Administration Research and Theory* 13(2):141-164.
- Rose, Richard. 1991. What is Lesson-drawing? *Journal of Public Policy* 11(1): 3-30.
- Sabatier, Paul. 1988 An Advocacy Coalition Framework of Policy Change and the Role of Policy-Oriented Learning: Exploring an Advocacy Coalition Framework. *Policy Sciences* 21:123-278.
- Sabatier, Paul A. and Hank C. Jenkins-Smith. 1988. Symposium Editors' Introduction. *Policy Sciences* 21:123-127.
- Schneider, Sandra K. and William G. Jacoby. 1996. Influences on Bureaucratic Policy Initiatives in the American States. *Journal of Public Administration Research and Theory* 6(4):495-522.
- Shipan, Charles R. and Craig Volden. 2006. Bottom-Up Federalism: The Diffusion of Antismoking Policies from U.S. Cities to States. *American Journal of Political Science* 50(4): 825-43.
- Shipan, Charles R. and Craig Volden. 2008. The Mechanisms of Policy Diffusion. *American Journal of Political Science* 52(4):840-857.
- Shipman, Charles R., and Craig Volden. 2012. Policy Diffusion: Seven Lessons for Scholars and Practitioners. *Public Administration Review* 72(6): 788-796.
- Shock, David R. 2013. The Significance of Opposition Entrepreneurs on Local Sales Tax Referendum Outcomes. *Politics and Policy* 41(4): 588-614.
- Siciliano, Michael D. 2017. Ignoring the Experts: Networks and Organizational Learning in the Public Sector. *Journal of Public Administration Research and Theory* 27(1):104-119.
- Simon, Herbert. 1997. *Administrative Behavior* 4th ed. New York: The Free Press.
- Sorge, Marco M. 2015. Lobbying (Strategically Appointed) Bureaucrats. *Constitutional Political Economy* 26:171-189.

- Sowa, Jessica E. and Sally Coleman Selden. 2003. Administrative Discretion and Active Representation: An Expansion of the Theory of Representative Bureaucracy. *Public Administration Review* 63(6) 700-710.
- Squire, Percival 2007 Measuring State Legislative Professionalism: The Squire Index Revisited. *State Politics and Policy Quarterly* 7(2):211-227.
- Teodoro, Manuel P. 2009. Bureaucratic Job Mobility and the Diffusion of Innovations. *American Journal of Political Science* 53(1):175-189.
- Terman, Jessica. 2015a. A State-Level Examination of Bureaucratic Policymaking: The Internal Organization of Attention. *American Review of Public Administration* 45(6): 708-727.
- Terman, Jessica N. 2015b. Performance Goal Achievement in Fiscal Federalism: The Influence of State Partisan Environments and Regulatory Regimes. *Policy Studies Journal* 43(3): 333-354.
- Volden, Craig. 2006. States as Policy Laboratories: Emulating Success in the Children's Health Insurance Program. *American Journal of Political Science* 50(2): 294-312.
- Volden, Craig. 2016. Failures: Diffusion, Learning, and Policy Abandonment. *State Politics and Policy Quarterly* 16(1) 44-77.
- Walker, Jack. 1969. The Diffusion of Innovations among the American States. *American Political Science Review* 63(3): 880-899.
- Walker, Richard M., Frances S. Berry, and Claudia N. Avellaneda. 2015. Limits on Innovativeness in Local Government: Examining Capacity, Complexity, and Dynamism in Organizational Task Environments. *Public Administration* 93(3):663-683.
- Weible, Christopher M. 2008. Expert-Based Information and Policy Subsystems: A Review and Synthesis. *The Policy Studies Journal* 36(4) 615-635.
- Weible, Christopher M and Paul A. Sabatier eds. 2018. *Theories of the Policy Process* 4th ed Boulder, CO: Westview Press.
- Weingast, Barry. R. 1984. The Congressional-Bureaucratic System: A Principal-Agent Perspective. *Public Choice* 44:147-192.
- Wilson, James Q. 1989. *What Government Agencies Do and Why They Do It*. New York: Bantam Books.
- Wilson, T.D. 1999. Models in Information Behaviour Research. *Journal of Documentation* 55(3):249-270.
- Wilson, T.D. 1997. Information Behaviour: An Interdisciplinary Perspective. *Information Processing and Management* 33(4):551-572.

Wilson, Woodrow. 1887. The Study of Administration. *Political Science Quarterly* 2(2) 197-222.

Wood, B. Dan. And Richard W. Waterman. 1993. The Dynamics of Political-Bureaucratic Adaptation. *American Journal of Political Science* 37(2):497-528.

Workman, Samuel, Bryan D. Jones, and Ashley E. Jochim. 2009. Information Processing and Policy Dynamics. *Policy Studies Journal* 37(1): 75-92

Appendix A

State Agency Head Solicitation and Survey

E-MAIL INVITATION FOR ON-LINE SURVEY

SUBJECT: Research study to examine state administrators' information environments.

Dear State Administrator:

You are invited to participate in a research study about your interactions and information sharing with other political or policy actors. This study is being conducted by Kisha Hardwick, PhD candidate, under the direction of Dr. Cynthia Bowling, Professor, in the Auburn University Department of Political Science. You are invited to participate because you are the chief administrator of an agency or department within your state. This is an ancillary project associated with the American State Administrators Project (1964-2008) which you may have participated in before.

Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete an anonymous electronic survey hosted at Qualtrics.com. Your total time commitment will be approximately 5-10 minutes.

Other than the time taken to complete the survey, there are no physical or psychological risks associated with this research. The information collected through the survey will remain completely anonymous. No identifiers will be used to link your responses to your identity.

If you change your mind about participating, you can withdraw at any time during the survey by closing the browser. If you have any questions, please contact Kisha Hardwick at kak0027@auburn.edu or (334) 750-6946.

The survey will be open until December 31, 2016.

Follow this link to the survey:

<https://auburn.qualtrics.com...>

Or copy and paste the URL below into your internet browser:

<https://auburn.qualtrics.com...>

Thank you,

Kisha A. Hardwick, MPA, PhD Candidate
Department of Political Science, College of Liberal Arts, Auburn University
7080 Haley Center
Auburn University, AL
kak0027@auburn.edu

Add this approval information in sentence form to your electronic information letter!

The Auburn University Institutional Review Board has approved this Document for use from 08/31/2016 to 08/30/2019
Protocol # 16-276 EX 1608

DEPARTMENT OF
POLITICAL SCIENCE



AUBURN UNIVERSITY
COLLEGE OF LIBERAL ARTS

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

INFORMATION LETTER

For a Research Study entitled

“State Administrators’ Information Environments”

You are invited to participate in a research study to examine the interaction and information flow between state agency heads and other political/policy actors. The study is being conducted by Kisha Hardwick, PhD candidate, under the direction of Dr. Cynthia Bowling, Professor, in the Auburn University Department of Political Science. You are invited to participate because you are the chief administrator of an Education, Economic Development, Income Security/Social Services, or Transportation agency within your state and are age 18 or older.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete an anonymous online survey hosted at Qualtrics.com. Your total time commitment will be approximately 10 minutes.

Are there any risks or discomforts? There are no risks associated with participating in this study. While data is collected anonymously, identification may be possible by combining pieces of information due to the select nature of your profession.

Are there any benefits to yourself or others? There are no personal benefits associated with your participation in this study. Benefits to others may result from the subsequent research findings about the information environments of state administrators.

Will you receive compensation for participating? There will be no compensation for participation in this study.

Are there any costs? If you decide to participate, there will be no cost to you beyond the minimal time taken to complete the online survey.

If you change your mind about participating, you can withdraw at any time by closing your browser window. If you choose to withdraw, your data will be withdrawn as long as it is identifiable. Once you’ve submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University or the Department of Political Science.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide. No identifiers will be used to link your responses to your identity. Information collected through your participation may be used to complete dissertation research, published in a professional journal or book, and/or presented at a professional meeting.

If you have questions about this study, please contact Kisha Hardwick at kak0027@auburn.edu or 334-750-6946.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or email at IRBAdmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE LINK BELOW. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Kisha A. Hardwick 7/1/2016

Investigator

The Auburn University Institutional Review Board has approved this document for use from _____ to _____. Protocol # _____

Add this approval information in sentence form to your electronic information letter!

The Auburn University Institutional Review Board has approved this Document for use from 08/31/2016 to 08/30/2019
Protocol # 16-276 EX 1608

SURVEY QUESTIONS

(A) Administrator Identifiers

1. What state do you work for? (Choose from list)

(B) Your Agency

1. How large is the agency you head?
 - a. Total number of employees? #
 - b. Size of current annual budget? # (in millions of dollars)
2. What proportion of your agency's budget comes from federal funds?
 - a. 0
 - b. Under 25%
 - c. 25-49%
 - d. 50-74%
 - e. 75% or more
3. Please indicate the approximate number of non-profits, interest groups, or intergovernmental organizations that interact with yourself or your agency staff on a regular basis? #
4. Is your agency operating under any court orders or consent decrees? y/n (please describe)

(C) Career and Professional Experience

1. Please indicate the number of years you have been employed
 - a. In state government in this state?
 - b. In this agency?
 - c. In your current position?
2. Have you ever held a position in state government in some other state? y/n years
3. Have you ever held a position in the private (for profit) sector? y/n years
4. Have you ever held a position in the Non-profit sector? y/n years
5. Are you a member of a professional association? y/n
 - a. How many?
 - b. Please list...
6. Please indicate the nature of the appointment process by which you came to your present post.
 - a. Governor (with or without legislative consent)
 - b. Board/Commission
 - c. Department head
 - d. Popular election
 - e. Civil service process
 - f. Other (please indicate...)

(D) Contacts and Program Relationships

1. On average, how often do you personally have phone, face-to-face, or direct email contact with the following persons during the course of carrying out your official duties? (Indicate frequency of contact)

Daily / Weekly / Monthly / Less than Monthly / Never

- a. Governor
- b. Governor's staff
- c. Legislators
- d. Legislative staff
- e. Other state agency personnel
- f. Clientele groups
- g. Citizens (public at large)
- h. Peer administrator in another state
- i. Local officials
- j. National officials
- k. State level interest groups
- l. National interest groups
- m. State level non-profits
- n. National non-profits
- o. Policy advocate in your state
- p. National policy advocate
- q. Federal agency administrators
- r. Information organizations (think tanks, academics, etc)
- s. Professional Associations
- t. Is there any one you have frequent contact with that is not covered under one of these descriptions?

2. How often *do you seek out* any of the following individuals or organizations for information or ideas particular to your program or policy area?

Daily / Weekly / Monthly / Less than Monthly / Never

- a. Governor
- b. Governor's staff
- c. Legislators
- d. Legislative staff
- e. Other state agency personnel
- f. Clientele groups
- g. Citizens (public at large)
- h. Peer administrator in another state
- i. Local officials
- j. National officials
- k. State level interest groups
- l. National interest groups
- m. State level non-profits
- n. National non-profits
- o. Policy advocate in your state
- p. National policy advocate
- q. Federal agency administrators
- r. Information organizations (think tanks, academics, etc)
- s. Professional Associations
- t. Is there any one you seek information from that is not covered under one of these descriptions?

3. How would you rate the importance of the information you receive from each of these sources?

Degree of Importance: 1-10

- a. Governor
- b. Governor's staff
- c. Legislators
- d. Legislative staff
- e. Other state agency personnel
- f. Clientele groups
- g. Citizens (public at large)
- h. Peer administrator in another state
- i. Local officials
- j. National officials
- k. State level interest groups
- l. National interest groups
- m. State level non-profits
- n. National non-profits
- o. Policy advocate in your state
- p. National policy advocate
- q. Federal agency administrators
- r. Information organizations (think tanks, academics, etc)
- s. Professional Associations
- t. Is there any one you have frequent contact with that is not covered under one of these descriptions?

4. How often *do you pass on* information or ideas particular to your program or policy area to any of the following individuals or organizations?

Daily / Weekly / Monthly / Less than Monthly / Never

- a. Governor
- b. Governor's staff
- c. Legislators
- d. Legislative staff
- e. Other state agency personnel
- f. Clientele groups
- g. Citizens (public at large)
- h. Peer administrator in another state
- i. Local officials
- j. National officials
- k. State level interest groups
- l. National interest groups
- m. State level non-profits
- n. National non-profits
- o. Policy advocate in your state
- p. National policy advocate
- q. Federal agency administrators
- r. Information organizations (think tanks, academics, etc)
- s. Professional Associations
- t. Is there any one you have frequent contact with that is not covered under one of these descriptions?

5. How would you rate the importance of the information you transmit to each of these sources?

Degree of Importance: 1-10

- a. Governor
- b. Governor's staff
- c. Legislators
- d. Legislative staff
- e. Other state agency personnel
- f. Clientele groups
- g. Citizens (public at large)
- h. Peer administrator in another state
- i. Local officials
- j. National officials
- k. State level interest groups
- l. National interest groups
- m. State level non-profits
- n. National non-profits
- o. Policy advocate in your state
- p. National policy advocate
- q. Federal agency administrators
- r. Information organizations (think tanks, academics, etc)
- s. Professional Associations
- t. Is there any one you have frequent contact with that is not covered under one of these descriptions?

(E) Background Information

1. When were you born? Year
2. What is your gender m/f
3. What is your race (or ethnic group)?
 - a. African American
 - b. Asian
 - c. Caucasian
 - d. Hispanic
 - e. Native American
 - f. Other (including multi-racial)
4. Generally speaking, do you consider yourself a
 - a. Democrat
 - b. Republican
 - c. Independent