

**CREATING SOCIAL CONNECTIONS IN HIGHER EDUCATION: INSIGHTS FROM
THE CAMPUS CANINES PROGRAM AT THE UNIVERSITY OF PITTSBURGH**

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The overall purpose of this study was to capture the relationships made during the Campus Canines Program, an animal-assisted activity program, at the University of Pittsburgh. Meaningful social relationships create greater educational satisfaction. These social relationships are an important piece to creating and sustaining student involvement, and therefore retention, in a college environment. Therefore, the current study is significant because Campus Canines Program may be a program that fosters these important relationships for students.

This study used a case study approach that included two mixed-method online instruments. Both surveys are comprised of close-ended quantitative questions and open-ended qualitative questions. During the 2012 Spring Academic Term, a census of the entire population was conducted. This census determined the entire student population to be 270 and volunteer population to be 20. The canine population of 22 was also determined but only for informational purposes. All 270 students were selected for this study and 69 responded to the survey with a 25.5% response rate. All 20 volunteers were selected to participate in this study and 11 responded to the survey with a 55% response rate.

Overall, the results suggest that the Campus Canines Program does create a program for student involvement and may support established relationships. The key findings include (1) the dogs may aid in communication with other participants, (2) the program specifically supports established relationships between friends and family, and (3) the Campus Canine Program may

provide stress relief. In the first key finding, the dogs act as a social stimulant. This supports the literature that states animals provide a safe environment to promote communication between people. The second key finding shows that the Campus Canines Program specifically supports established relationships between friends and family. These results support the literature which indicates that the human-animal relationship may aid in the development of social networks. Lastly, the third key finding shows that stress relief is a benefit of this program. This does support the literature that states interaction with animals produces physiological benefits.

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1.0 INTRODUCTION

In Northern Israel, in 1976, the 12,000-year-old remains of a male human skeleton were found alongside the remains of a dog or wolf puppy. The dog's remains were located under the human's hand (Morrison, 2007). In current day Baja California, archeologists uncovered large size animal images painted on the wall of Cueva Pintada. These archeological findings are some of the earliest evidence of the human-animal bond. History is filled with descriptions supporting the importance of the human-animal bond through the ages. The ancient Egyptians adorned their temples with "animal-headed gods and goddesses" (Serpell, 2000, p. 8). Medieval Christian saints, such as St. Roch, cured plague sores by allowing their dogs to lick the patients (Serpell, 2000). Noted 19th century healer, Florence Nightingale, suggested small animal companions for the chronically ill patients. Psychologist Boris Levinson wrote in 1962 on the therapeutic benefits of using his dog Jingles, with his young patients (Morrison, 2007). These are just a few examples of how people, throughout time, have taken notice of the benefits of this human-animal interaction.

Although the human-animal bond can be cited in the archeological record, the field of studying this bond, known as anthrozoology, is relatively new. *Anthrozoos* and *Society & Animals* are two major publications that distribute research studies in this field. They began publishing in 1987 and 1993 respectively (Podberscek, Paul, & Serpell, 2000). The Animals and Society Institute (n.d.) lists higher education institutions that offer degrees or certificates in

anthrozoology. They include Canisius College, located in Buffalo, NY; Carroll College, located in Helena, MT; Duquesne University, located in Pittsburgh, PA; Eastern Kentucky University, located in Richmond, KY; Michigan State University, located in East Lansing, MI; Ohio State University, located in Columbus, OH; and Colorado State University, located in Fort Collins, CO. Anthrozoology combines the disciplines of biology, psychology, anthropology, and sociology to study the human-animal bond (Serpell, 2000). The focus of this field has been human's relationship and interactions with companion animals and domestication. The relationships with companion animals are a major focus because these interactions appear to have the highest quantity. Additionally, domestication is a focus because there are only a small number of animals that have partnered with humans. The evolutions of these partnerships are an important anchor in the field of anthrozoology (Perkins, 2012).

There are some critiques of this field. Mainly, due to its borrowing from established fields such as biology and sociology, the field of anthrozoology does not have a supported theoretical framework for explaining the benefits of the human-animal bond (Krueger & Serpell, 2006). Using biological theories such as the biophilia hypothesis or sociological theories such as role theory can only explain a portion of the whole human-animal bond experience. The lack of a unified theoretical framework can also be seen as a benefit because it may allow new theories to emerge to explain the benefits of the human-animal bond.

Another critique of the field is that although there is an abundant number of anecdotal and media stories promoting the benefits of the human-animal bond, the field needs more empirical evidence to support these benefits (Herzog, 2011; Kruger & Serpell, 2006). According to Herzog (2011), the benefits of the human-animal bond remain inconclusive. He writes, "empirical studies of the effects of pets on human health and well-being have produced a

mishmash of conflicting results” (p. 237). Herzog continues by explaining that these conflicting results stem from poor methodological rigor, unpublished negative results, and researcher objectivity. Many researchers, including myself, become interested in this field because they have personal connections to a pet or animals in general. This can be problematic because these personal convictions may cause bias in the study. To prevent myself from succumbing to this bias, I had the literature review, methods, and results peer and faculty reviewed to ensure thoroughness of this study.

In my view, these critiques provided support for more studies on the human-animal bond, not less. A theme through both these critiques is that this new field of anthrozoology needs more empirical and methodologically sound studies to help explain this phenomenon. Animals have played such a large role throughout human evolution, history, and today that to ignore this relationship would negatively serve in understanding human nature.

This dissertation focuses on the relationship between humans and companion animals. Presently, humans use the benefits of human-animal interaction for human companionship (pets), service (search and rescue, police animals, hearing/eye dogs), and animal-assisted activities/therapy. Service animals are separate from therapy animals. According to Marcus (2011), service animals are trained to support humans with a specific intervention such as a seeing-eye dog or police horse. These animals are trained and certified under organizations such as Assistance Dogs International (ADI®) and are protected by federal law. Some judicial systems use service dogs in their criminal proceedings. According to Courthouse Dogs (2012), service dogs are used to assist victims with their emotional or psychological trauma during the criminal proceedings. Marcus (2011) continues by writing that therapy animals are different than service animals in that they are primarily pets that are trained to react calmly to a wide wage of

human contacts and social situations. These animals are trained and certified under organizations such as Therapy Dogs International (TDI®). Therapy animals can be seen in nursing homes, hospitals, doctor's offices, and even prisons. They assist humans in a variety of ways including physical, emotional, and social support (Allen, 2003; Baun, Bergstrom, Langston, & Thoma, 1984; Chandler, 2005; Coakley & Mahoney, 2009; Freidmann et al. 1983; Freidmann, Thomas, Cook, Tsi & Picot, 2007; Folse, Minder, Aycock, & Santana, 1994; Ham & Epping, 2006; Jenkins, 1986; Johnson & McKenny, 2010; Marcus, Bernstein, Constantin, Kunkel, Breuer, & Hanlon, 2012; Nathans-Barel, Feldman, Berger, Modai, & Silver, 2005; Odendall, 2000; Steed & Smith, 2002; Sobo, Eng & Kassity-Kritch, 2006; Vormbrock & Grossberg, 1988; Wilson, 1987).

Here are just a few other examples of how animals are used as therapy. Equine therapy is the use of horses to provide therapeutic benefits to people with physical and mental disabilities. For example, Klontz, Bivens, Leinart, and Klontz (2007) show in their study of 31 participants with psychological disorders that those who participated in equine-assisted activities, such as riding and grooming the horse, reported reductions in their psychological disorder. The reductions remained stable even after 6-months.

There are some schools that use equine therapy as a key component of an educational program. The Excelsior Youth Center, located in Colorado, is a residential treatment center for girls with emotional and behavior difficulties. The girls are taught how to ride, care for, and groom the horses. The goal of the program is that the girls develop the skills of patience and understanding. The positive student response to this program may provide evidence that this program is working. According one student, "Equine has taught me to gain control of my emotions. When dealing with horses, you can get hurt if you react the wrong way and that's true in life, too" (Excelsior Youth Center, n.d.).

Farm animals such as goats and sheep are also used in animal-assisted activities/therapy. An example of such a program is Green Chimneys, located New York. It is a residential school designed to educate students with emotional, behavioral, social, and learning disabilities. According to its web site, Green Chimneys is “recognized as the worldwide leader in animal-assisted therapy and activities” and they “strive to develop a harmonious relationship between people, animals, plants, nature and the environment through an array of educational, recreational, vocational and mental health services” (Green Chimneys, n.d.).

Although a variety of animals such as horses, goats, cats, llamas, birds, and dolphins are used in animal-assisted activities/therapy, dogs make up the majority of animals in this type of therapy (Serpell, 2000). According to Therapy Dogs International (2012), in 2011 there were 24,000 therapy dogs certified in the US and Canada. In a K-12 setting, therapy dogs are mainly used to assist as an alternative reading program (Beetz, 2010; Jalongo, 2003). There are numerous programs that offer dogs for reading assistance. Some programs include: Intermountain Therapy Animals’ Reading Education Assistance Dogs Program, Therapy Dogs International’s Tail Waggin’ Tutors Program, Animal Friend’s Reading with Rover Program, and the Society for the Prevention of Cruelty to Animals’ Puppy Dog Tales Reading Program. A 2002 pilot study, conducted at Bennion Elementary School in Utah, revealed that reading scores improved significantly with animal-assisted therapy (Jalongo, 2003). Among students exposed to a dog reading program in school, increases occurred in the level of interest in reading and remained increased through the summer vacation (Beetz, 2010).

Some examples of animal-assisted activities/therapy in colleges include the University of Pittsburgh’s Campus Canines Program. LaRoche College and John Carroll University also have similar programs. University of Richmond School of Law, Yale Law School, and Harvard Law

School provides therapy dogs to their students during finals week. The animal-assisted activity/therapy programs in colleges have limited studies on the effect of these programs. In one such study, Folse, Minder, Aycock, and Santana (1994) researched the effect of animal-assisted therapy on self-reported depressed college students. There were 44 college students identified for this study. All participants were given a pre- and post-depression survey. After receiving therapy from a team consisting of a therapist and a therapy dog, the students' self-reported depression scores decreased. Their study suggests that animal-assisted therapy may be an effective treatment for depression in college students. One other study specifically researched student's opinions on animal-therapy programs at college. Adamle, Riley, and Carlson (2009) surveyed 246 college freshmen on their relationship with pets and their interest in an animal-therapy program. Their results indicate that the students felt that they would benefit from an animal-therapy program during their first year away from home. The students also indicated that the animal-therapy program could help create new social relationships.

Although a certified therapy dog is used in both activities, a distinction should be made between animal-assisted therapy and animal-assisted activities. According to the Delta Society (2009), animal-assisted therapy

is a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process. AAT is designed to promote improvement in human physical, social, emotional, and/or cognitive functioning [cognitive functioning refers to thinking and intellectual skills]. AAT is provided in a variety of settings and may be group or individual in nature. This process is documented and evaluated.

According to the Delta Society (2009), animal-assisted activities “provide opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance quality of life. AAA are delivered in a variety of environments by specially trained professionals, paraprofessionals, and/or volunteers, in association with animals that meet specific criteria.” Unlike animal-assisted therapy, animal-assisted activities involve casual encounters between trained animals and a variety and often mixed group of humans, without establishing a specific, intended therapeutic outcome. One such animal-assisted activity program is the Campus Canine Program at the University of Pittsburgh.

1.1 CAMPUS CANINES AT THE UNIVERSITY OF PITTSBURGH

The Campus Canine Program (CCP) at the University of Pittsburgh offers a unique animal-assisted activity experience in that it provides the University of Pittsburgh's community with the opportunity to interact with therapy dogs. Therapy dogs have been trained to be obedient and well-behaved and provide comfort to strangers. The dogs participating in the CCP and their humans (called handlers) have all been tested and registered through the American Kennel Club's Canine Good Citizen program and TDI® as certified therapy dogs (see Appendix G). The dog's handlers are typically their owners.

The University of Pittsburgh's Resident Student Association co-sponsors, along with the Western Pennsylvania Humane Society, organizes and implements the CCP. The University of Pittsburgh's Resident Student Association is a student organization that represents all the students living in campus housing. The Western Pennsylvania Humane Society is a local open-door animal shelter.

Prior to starting this research, I met with each co-sponsor to educate myself on the goals of the program. According to the Resident Student Association's advisor, Melissa Warthen, "the program exists to provide students a relaxed place to play with dogs – since many of them are away from their family pets" (personal communication, 2011). Warthen's main concern about this research was that it would interfere with the students' experience while at the CCP and discourage them from coming again. The Resident Student Association does not keep records of attendance, they do not set specific goals for the program, nor do they promote the program on their main web page. Additionally, there have been name changes to the program and it was uncertain if the name of the program is titled Campus Canines or College Canines. In this study, the program will be referred to as Campus Canines.

The Western Pennsylvania Humane Society is the other co-sponsor. The CCP is led by Marsha Robins, Director of Humane Education at the Western Pennsylvania Humane Society. According to Robins, there are not any set goals for the program but she does think the main purpose of the program is for stress relief (personal communication, 2011). In a 2008 Pittsburgh Post-Gazette newspaper article about the CCP, Robins indicated that about 300 students come to the CCP every week (Fuoco, 2008). In our personal communication in 2011, she indicated that there are about 100 students every week. Attendance is not taken at the CCP therefore these attendance numbers are from Robins' observations. The Western Pennsylvania Humane Society does not advertise the program although it had been featured in the media such as the 2008 Pittsburgh Post-Gazette newspaper article. There is a Facebook community page that is administered by a University of Pittsburgh student who is an advocate for this program. This student may change due to term responsibilities or graduation. This student is unofficially advised by Robins.

Although both co-sponsors indicate that the purpose of the CCP is to provide relaxation and stress relief for the students, there are not any set specific target goals for the program. Also, the population of the program is unclear. Neither the Resident Student Association nor the Western Pennsylvania Humane Society keeps records of attendance. Additionally, this program is not officially advertised by either group.

1.1.1 Campus Canines Program Pilot Study

Although there is a supported purposed of the CCP for promoting relaxation and stress reduction, there are not sufficient data describing what occurs during the program or who attends the program. Therefore I conducted a pilot study (Camaioni, 2011) to observe and describe the interaction between the dogs and the human participants/volunteers in the CCP. The main research question was: What happens during an animal-assisted activity program at a major university?

This study employed a participant observation methodology. This methodology is ethnographic in nature and is used to describe a specific social situation (Spradley, 1980). Because this is the first attempt to study the CCP, this immersion observation was necessary to gain a baseline description of the social activities of the program. During five weeks of the 2011 Spring Term, 45 participants, 15 volunteers, and 10 canines were observed. The rationale for observing for five weeks was to gain a preliminary view of the CCP. The duration was specifically chosen to correspond with the two weeks before mid-term exams, mid-term exams week, and the two weeks following the exams. The observations were conducted in the Cathedral of Learning at the University of Pittsburgh for one hour each Tuesday from 7:00 to 8:00 p.m.

The pilot study – which was titled *A pilot participant observation study of the Campus Canines program at the University of Pittsburgh* – provides the following details about the CCP.

The following procedure was followed to decode qualitative responses from the participant observation discussions with volunteers and participants. The discussions were coded using an alpha-numeric format where the letters indicate if the response was from a participant (P) or volunteer (V) and the numbers indicate the participant's or volunteer's assigned numeric code to help retain anonymity. For example, P01 would indicate participant number one is being referenced.

1.1.1.1 Environment

Figure 1.1 The CCP in the Commons Room at the Cathedral of Learning



Source: Courtesy of Larissa Gula, 2011.

The program is held in the commons room of the Cathedral of Learning – a Gothic Revival style building. The volunteers arrive approximately at 7:00 p.m. and leave approximately at 8:00 p.m.

and arrange themselves along the walkway of the commons area. The dogs are made available to engage with interested participants. The participants come and go as they wish and are not required to partake in the activities.

1.1.1.2 Populations

Figure 1.2 CCP Volunteer, Marsha Robbins, and her therapy dog, Sizzle.



Source: Courtesy of Larissa Gula, 2011.

There are three distinct populations involved in this program. They are the participants, the volunteers, and the animals. The number of participants, volunteers, and animals in this program fluctuated from week to week but the population during five weeks of observation included 45 participants, 15 volunteers, and 10 canines. Participants included students, faculty, and staff from the University of Pittsburgh. Approximately three-fourths of the participants were students.

The volunteers are the dog owners/handlers who provide their time and their dogs for this program. They are both male and female and participate solo or in couples. The couples are male/female and mother/daughter. The volunteers have all successfully completed the animal

therapy course and TDI® evaluation with their dogs. All volunteers are at least 18 years old, unless a parent or guardian accompanies them. Insurance is provided through TDI. The University of Pittsburgh requires a record of all insured volunteers.

The therapy dogs are various breeds, sizes, activity levels, and ages. The dogs go through rigorous training at the Western Pennsylvania Humane Society for TDI® certification to verify the dogs are obedient, well behaved, and appropriate for therapy dog work, with annual therapy dog certification renewal required. Once dogs are TDI® certified, they are insured by TDI® against harm to humans and harm to other animals. The University of Pittsburgh requires a record of all TDI® certifications. During the term, the dogs would often be dressed in relation to the holiday calendar. For example, for St. Patrick's Day, the dogs would wear green bandannas around their necks.

1.1.1.3 Activity

Figure 1.3 CCP participants interacting with a therapy dog named Coco.



Source: Courtesy of Larissa Gula, 2011.

Figure 1.4 Interactions between CCP participants, therapy dogs, and volunteers



Source: Courtesy of Larissa Gula, 2011.

The results identified a recurring interaction pattern between the participants, volunteers, and canines. This interaction pattern begins by the canine eliciting participation by soliciting the participant to sit, pet the dog, and join the dog/volunteer team and other participants. Once the participant joins the group, the human-to-human connections occur through shared participant pet stories and shared volunteer pet stories. The mean duration of an instance of this interaction is nine minutes.

In one example of a shared story, a female participant (P03) asked a male volunteer (V01) if his dog liked the snow. The volunteer said, “Yes, he loves the snow.” The participant offered a story of her mother who also loved the snow. The participant said that her mother does not like the warm weather so she will not move from Pittsburgh. In this example, the dog served as a catalyst for the conversation (asking if the dog liked the snow), which involved a discussion of a parent and home life with the human volunteer.

In another example of a shared story, a male volunteer (V06) explained that Cody [his therapy dog] was found “dumped” at the airport at 5 weeks old and was severely malnourished.

He was going to foster Cody but decided to adopt him. He explained that he thought Cody would be a good therapy dog so he took Cody to the courses. One female participant (P15) stated, “Our dog at home was adopted and I wonder if she had the same start as Cody. We love her.” The male volunteer (V06) replied, “Many think that shelter dogs are nasty or mean. I show that Cody is not.” This story also highlights an experience between the student and volunteer that is formed through shared experiences with their dogs.

Also notable in the results was the observation of four main types of connections. They were participant-participant, participant-volunteer, participant-family, and volunteer-volunteer. The following is one example of these connections that were made through the sharing of stories and pictures of their personal pet experiences. The dog lies down once the participant starts to pet it – the dog puts its head on the participant’s lap. The female participant started taking pictures to send home to share this experience with her mom. She said that she thinks her mom will love a picture of this dog with its head on her lap. The CCP program provided this student venue for connecting with her family by sharing a positive experience with the therapy dog.

1.1.1.4 Conclusions

This pilot study supports that the CCP therapy dogs may elicit human responses. The responses allow the humans to join the group and begin discussion. Once the participants are engaged, there are a series of routines that help promote a connection between the participant and volunteer and the participant with their families through stories and pictures.

I provided this information to both co-sponsors of the program. I sent Warthen a copy of the written report of the findings. We conducted personal communications which included talking on the telephone and writing through email about the findings. Her reaction was that she

was encouraged to hear more about the program. Additionally, it provided assurance that this research would not interfere with the students' ability to engage in the program (personal communication, 2012).

I also shared these findings of this pilot study with the Western Pennsylvania Humane Society. David Janusek, Executive Director, Deanne Heller, Director of Development, and Dara Korn, Director of Humane Education and Training, were in attendance for the presentation. The reaction by all attendees was that they were enthusiastic about what was to come with future research. Initially, Executive Director Janusek minimized the significance of the findings but was encouraged that further research on this topic may strengthen these findings. In a personal communication with Executive Director Janusek (2012), he writes "I enjoyed your findings thus far and by all means would love to see the work in its entirety."

I also presented this pilot study's findings as poster presentations at two academic conferences during the summer of 2012. The first conference was held July 11-13, 2012 at the University of Cambridge, UK. The conference organizers were the International Society for Anthrozoology (ISAZ). The main aim of this organization is to promote research in the field of Anthrozoology. The second was the International Society for Applied Ethology (ISAE) conference. It was located in Vienna, Austria from July 31 to August 4, 2012. The ISAE focuses on the study of applied animal behavior. Although both poster presentations produced only modest direct feedback, I used these academic conferences to gain new perspectives of the field of anthrozoology.

Lastly, I gave an oral presentation of this study at the 24th Annual Ethnographic & Qualitative Research Conference, June 1, 2012. This conference was located in Cedarville, Ohio. The focus of this conference was qualitative research methods. The feedback from my

presentation was positive. A few remarked that they have never heard of a program like this and found it interesting. I had a small number of in-depth conversations about this topic with fellow scholars. These conversations revealed that more knowledge about these connections is needed.

The pilot study, the results, the findings, and the feedback opened new areas or ways to study the CCP. The main themes emerging from this pilot study were that the dogs are the attraction and that human-human connections are evident at the CCP. As indicated by the feedback from the Executive Director Janusek, more information was needed about these connections. Additionally important were the impact of these connections to a college student in a college environment. Although the primary goals loosely established for CCP focused on relaxation and stress reduction, additional, unexplored benefits for social connections were also identified. Therefore, for this study, I focused on theories that may help explain the human-animal bond, since dogs appear to be the attraction, and theories that may help explain the impact of relationships to a college student in a college environment.

1.2 THEORETICAL FRAMEWORK

A more in-depth look at these theories can be found in chapter 2. The following is a brief explanation of these theories and how they may relate to the CCP. The biophilia hypothesis is an over-arching theme that states humans have an evolutionary tendency or a need to interact with the non-human world (Kellert, 2005). This hypothesis may help explain why the dogs are so attractive to humans. Further, attachment theory may also explain the attractiveness of the dogs. Attachment theory, originally proposed by John Bowlby to define the parent-child bond, can be used to explain other relationship bonds (Woodward & Bauer, 2007). A secure attachment bond

may lead to a sense of well-being and a sense of security (Banks, Willoughby, & Banks, 2008). Humans with a pre-disposition or a previous experience with dogs may have had past secure attachment bond with a dog, therefore making the CCP dogs so attractive.

Social capital theory may also be used to explain the impact of the relationships created or maintained at the CCP. This theory states that participation in networks of social relations (relationships) creates returns such as economic profits, democratic participation, and increased emotional well-being (Bourdieu, 1993; Putnam, 2000; Stone, 2001). Social capital may be important in a college setting because being part of a network of relationships may “reinforce identity and recognition” (Lin, 1999, p. 31). Belonging to a group may therefore increase emotional well-being. Buettner and Debies-Carl (2012) researched the building of social capital in college students. Their specific aim discussed the effects of attending alcohol-present parties on social capital. The results indicate that although there is a negative consequence of underage drinking, these parties may be a vehicle for membership into a group and may aid in the building of social capital.

The human-animal relationship may also aid in the development of relationships (Wells, 2004; Wood, 2007). Wood (2007) suggests that pets act as “social lubricant for social contact and interaction” (p. 47). Additionally, Wells (2004) found that females, in the presence of a dog, elicited more interactions with humans than when the female was alone or with neutral stimulus, such as a potted plant. Other research has shown that a service dog significantly increases the social responses between able-bodied people and a physically disabled stranger (Mader, Hart & Bergin, 1989).

Creating relationships in college is not only important to a student’s emotional well-being, but it may also be a factor in their persistence, retention, and engagement in school. This

emphasized in the work of Chickering, Tinto, and Astin. Chickering (1969) suggests that developing relationships contributes to creating one's identity. This identity development is critical in creating a balanced person; one who is capable of handling the stress and pressure of university life. This capacity may have indirect effects on student persistence. Tinto's (1993) model of institutional departure and Astin's (1993) student involvement theory suggests that integration into college life, including peer interactions has an impact on retention. I selected these models to help explain the impact of relationships on persistence, retention, and engagement in college.

1.3 STATEMENT OF THE PROBLEM

The overall purpose of this study was to capture the relationships made during the Campus Canines Program (CCP), an animal-assisted activity program, at the University of Pittsburgh. The key questions guiding this research are (1) How can an animal-assisted activity program help foster social capital at a major university? (2) What types of relationships are fostered during the CCP at the University of Pittsburgh? and (3) What groups are more likely to benefit from the CCP at the University of Pittsburgh?

1.4 SIGNIFICANCE OF THE STUDY

Student persistence, retention, and engagement are a focus of much higher education research (Roberts & McNeese, 2010; Roberts & Styron, 2010; Tate & Schwartz, 1993; Zhao & Kuh,

2004). A major theme occurring throughout is the need for meaningful social relationships and that a sense of belonging creates greater educational satisfaction (Orsuwan & Cole, 2007). These social relationships are an important piece to creating and sustaining student involvement, and therefore retention, in a college environment (Tinto, 1975, 1993, Astin, 1999, Pascarella & Terenzini, 1991). Therefore, the current study is significant because, based on Camaioni (2011), the CCP may be a program that fosters these important relationships for students. Because there is currently a gap in the literature on animal-assisted activity programs in higher education, this study is unique in that it will provide both quantitative and qualitative measurements of an animal-assisted activity program in higher education. Further, clarifying the functions of the CCP may provide a base for other universities that may want to develop an animal-assisted activity program. It will also provide demographic information on the participants and volunteers of the CCP, which may help in understanding if there are certain groups that may benefit from this service more than others. Lastly, defining the types of relationships that are made during an animal-assisted activity program may assist in higher education's student services field.

1.5 SUMMARY

Animals have played an important role in human physical, emotional, and social development since pre-historic times. These interactions are studied under the emerging field of Anthrozoology, the study of the relationships between humans and animals. This field does face some limitations such as limited studies in the academic record and a unified theoretical framework.

Humans use animals in a variety of ways including companion animals, service animals, and therapy animals. These roles often overlap but this study will attempt to focus on therapy animals. Therapy animals are often pets that are trained to react to wide variety situations in a calm manner. Therapy animals may be used to assisted humans with physical, emotional, and social needs. Dogs are most often used as therapy animals due to their responsiveness to human behaviors.

Therapy dogs are also being used in education including K-12 environments and higher education environments. In a K-12 setting, therapy dogs are mainly used in reading programs. Reluctant readers read to the dog in the hope that it will be less stressful than reading to a teacher. In the college environment, dogs are being used as stress relievers during the finals period. Therapy dogs programs in college may also serve as a way to encourage persistence, retention, and engagement because the therapy dogs may act as social catalysts between people. Therefore, these programs may support meaningful social relationships and a sense of belonging.

One such program is the CCP at the University of Pittsburgh. This program offers a weekly session with therapy dogs. These sessions are open to the entire University of Pittsburgh community and occur in both the Fall and Sprint Terms.

Prior to beginning this study, a pilot study was conducted in an attempt to answer the following question: What happens during an animal-assisted activity program at a major university. The first key finding in this study is that dogs elicit human communication. The second key finding is that human to human communication is happening at the CCP. This communication may create and sustain relationships. Because of the importance of social relationships in retention, persistence, and engagement in higher education, the CCP may offer benefits to higher education in this capacity. This dissertation sought to build upon this pilot

study and to describe these relationships in depth. The next chapter will provide background information on the field of anthrozoology and persistence, retention, and engagement in higher education. Although these two bodies of work are from two non-connected fields, both are important in understanding the CCP.

2.0 LITERATURE REVIEW

This literature review pulls from the human-animal interaction literature and the persistence, retention, and engagement in higher education literature. Both areas of study are needed to assist in explaining the outcomes and implications of the CCP at the University of Pittsburgh. The first section, human-animal interactions, is divided into two parts: the physiological and psychological benefits and the social benefits. Next, the theories that may help explain the benefits of the human-animal bond specific to the CCP. Also included in this chapter is a literature review based on student persistence, retention, and engagement. Lastly, student persistence, retention, and engagement theories and models are discussed.

2.1 HUMAN-ANIMAL INTERACTIONS

2.1.1 Physiological and Psychological Benefits of Human-Animal Interaction

Human interaction with the non-human environment can be linked to human wellness. Ulrich (1984) suggests that in a hospital setting, a potted plant or flowers can act as a stress reliever and increase recovery rates. Specifically, gall bladder surgery patients when provided with a window where the patient could see vegetation, had significantly better recovery rates than those patients

that viewed a brick wall. These interactions can be defined as a non-pharmaceutical health care tool.

Like the potted plant, animal-assisted activity/therapy is also seen as a non-pharmaceutical health care tool. This research suggests that humans who partake in dog interactions have a decrease in blood pressure (Allen, 2003; Baun, Bergstrom, Langston, & Thoma, 1984; Freidmann et al. 1983; Freidmann, Thomas, Cook, Tsi & Picot, 2007; Jenkins, 1986; Odendall, 2000; Vormbrock & Grossberg, 1988; Wilson, 1987), a decrease in stress, anxiety, and depression (Coakley & Mahoney, 2009; Folse, Minder, Aycock, & Santana, 1994; Steed & Smith, 2002), a decrease in pain (Marcus, D. A., Bernstein, C. D., Constantin, J. M., Kunkel, F. A., Breuer, P. & Hanlon, R. B., 2012; Sobo, Eng & Kassity-Kritch, 2006) an improvement in human fitness (Ham & Epping, 2006; Johnson & McKenny, 2010), and an improvement in counseling and rehabilitation treatment (Chandler, 2005; Nathans-Barel, Feldman, Berger, Modai, & Silver, 2005). For example, Walsh, Mertin, Verlander and Pollard (1995) conducted a study with chronic psychiatric ward-bound dementia patients. Over a 12-week period, a therapy dog was presented in the environment. The patients' blood pressure and heart rate were measured and compared to a non-therapy dog control group. Their results indicate that there were significant changes in heart rate and a drop in blood pressure with the patients in the therapy dog group.

In another study, Allen, Shykoff, and Izzo, (2001) suggest pet ownership may lower blood pressure and reduce stress. In their study, 48 hypertensive individuals were randomly selected to utilize pet ownership in addition to their pharmaceutical treatment of lisinopril. The control group only used lisinopril. The results indicate that lisinopril did reduce resting blood

pressure, but the participants that were part of the pet ownership group experienced lower blood pressure when responding to stress.

Humans with a variety of psychiatric disorders, show reduced levels of anxiety after positive dog interactions (Baker & Dawson, 1998). Children with pervasive developmental disorders (delay in the development of socialization and communication) communicated more often in the presence of a therapy dog than without one (Martin & Farnum, 2002).

Other research shows that animal therapy may also improve stress and anxiety symptoms with patients in a hospital or nursing home setting (Stasi et al., 2004). For example, Coakley and Mahoney (2009) suggest that an animal therapy program, in a hospital setting, may reduce stress for the patients. Their qualitative results indicate that the 61 patients who participated in the animal therapy program experienced a decrease in anxiety and increase in mood.

Research by Kawamura, Niiyama and Niiyama (2009) and others (Richeson, 2003) demonstrated that animal therapy prescribed to dementia patients resulted in decreases in agitated behaviors and increases in social interactions. The research also suggests that the interaction with the dogs allowed for more “confidence in oneself, interaction with other residents, and communication with volunteers” (Kawamura, Niiyama, & Niiyama, 2009, p. 44). Fritz, Farver, Kass, and Hart (1995) demonstrated that Alzheimer’s patients living in a nursing home saw a decrease in agitation and aggression when exposed to a therapy dog.

Sobo, Eng, and Kassity-Kritch (2006) propose that animal therapy may also be useful in pain management. They studied 25 children (ages 5-18), who underwent surgery and described post-surgery pain, who participated in a dog therapy program at the hospital. The children were interviewed post dog therapy intervention and the results suggest that the dog may reduce pain

because the dog may “possibly activate comforting thoughts regarding companionship or home” (p. 53).

Animals may also increase fitness levels of humans (Cutt, Kruiman & Giles-Corti, 2008; Ham & Epping, 2006). Johnson and McKenny (2010) researched a community dog-walking program where people spent one hour a week walking shelter dogs. The results indicated that participants went from doing moderate exercise less than 5 times per week to doing 30 minutes a day of moderate exercise 5 or more times per week.

Human-animal interaction is also shown to be effective in counseling and rehabilitation (Chandler, 2005). Using animal therapy in drug abuse counseling showed that animal therapy does positively influence building a relationship with the counselor. Groups with animal therapy showed more attachment to the counseling process and exhibited less stress during the counseling process (Minatrea & Wesley, 2008). Continuing, Minatrea and Wesley (2008) suggest that therapy recipients “appear more attached to the counseling process, place a higher value on the experience, and exhibits less stress during the process” (p. 72). In another study, Schneider and Harly (2006) show that people respond more positively to the pairing of a therapist and dog instead of just a therapist. Specifically, patients/clients were more likely to provide personal information with a dog present. Animal therapy may work because the animals are seen as a safe ally, therefore allowing a safe environment for the individuals to express their feelings (Mallon, 1994).

Nathans-Barel (2005) and others (Kovacs, Bulucz, Kis & Simon, 2006) provide other examples of the use of animal therapy in schizophrenic patient rehabilitation. Nathans-Barel, Feldman, Berger, Modai and Silver (2005) hypothesized that animal therapy may assist chronic schizophrenia patients with the improved ability to experience pleasure. After a 10-week therapy

session, the patients with the animal therapy treatment showed significant improvement in the ability to experience pleasure over the control group without animal therapy.

2.1.2 Social Benefits of Human-Animal Interaction

Studies also suggest that animal therapy is effective in social and emotional support programs and in the development of social networks (Terpin, 2004; Wells, 2004). For example, prison officials that seek socialization skills for the prisoners are turning to dog training programs for the prisoners (Furst, 2006). Although the learning of this skill is beneficial, the act of being with and teaching a dog is therapeutic in itself (Strimble, 2003). In a pilot study in a woman's prison that participated in training service dogs for the elderly and people with disabilities, the prisoners showed a decrease in depression and an increase in self-esteem (Walsh & Metin, 1994). Dog training programs for incarcerated youth facilities also provided positive changes in social interaction (Merriam-Arduini, 2000). The community also benefits from these programs in that dogs that may have been euthanized in a shelter are now serving people with disabilities (Strimble, 2003).

Additionally, animal therapy provides a method to increase self-esteem and increase socialization with children and teens with emotional problems (Terpin, 2004). When special education children are allowed to interact with animals and nature, their pathological and disruptive behavior decreased, their social skills improved, and symptoms of aggression and hyperactivity decreased (Katcher & Teumer, 2006). In a case study of two emotionally disturbed boys (11 and 12 years old), there was a decrease in negative comments, a decrease in distractibility, and an increased amount of eye contact with people during a 12-week Animal Assisted Therapy program (Kogan, Granger, Fitchett, Helmer, & Young, 1999).

Kotrshchal and Orbauer (2003) provide that dogs will act as social catalysts for socially withdrawn children. In their study, when a dog is in the classroom, the students are less aggressive. Instead of gaining attention through negative behaviors, children found attention from the dog. In another example, Esteves and Stokes (2008) studied the social interactions between three 5-9 year old students with developmental disabilities and their teachers at an elementary school. Their study involved direct observation between the student and the teacher with and without the presence of an obedience-trained dog. Their results indicate that, with a dog present, there was an increase in positive verbal and non-verbal behaviors between the teacher and student.

Children can also learn social skills, such as empathy, by associating with animals. Children that participate in humane education programs have increased empathy towards humans compared with those children who did not participate (Beck & Katcher, 2003). Animals can assist people to learn appropriate social exchanges because of the animal's ability to provide a quick response to behaviors. Animals have an explicit response to both positive and negative conditions making their feedback immediate (Kruger & Serpell, 2006).

2.1.3 Human Animal Interaction Theories

Because the field of Anthrozoology does not subscribe to a specific theory to explain the benefits from these interactions (Kruger & Serpell, 2006), I discuss a few theories and models that may help explain the benefits of human-animal interactions. Included are evolutionary theories (biophilia hypothesis), psychological theories (attachment theory), and social theories (social capital theory).

2.1.3.1 Biophilia Hypothesis

The biophilia hypothesis claims that humans have genetic descriptors that create a need to interact with nature (Kahn, 1997). Humans are genetically programmed to connect to other living organisms (Kruger & Serpell, 2006). For example, researchers at the California Institute of Technology and University of California, Los Angeles recorded the brain responses of 41 epilepsy patients when shown images of people, animals, and objects. The brain responded “preferentially to images of animals” which means that there was the most brain activity when shown pictures of animals, over people or objects (California Institute of Technology, 2011).

Further, this theory is aligned with an evolutionary model that these descriptors were developed for survival. For example, it was necessary for humans to be able to locate animals and vegetation for food to survive. The biophilia hypothesis suggests that our brains are hardwired with the need to pay attention to the environment for survival (Beck & Katcher, 2003). Therefore, humans increase their chance for survival by acknowledging important environmental signals (Kruger & Serpell, 2006).

If the human brain is coded to notice environmental cues, animal-assisted activities/therapy may be a tool that can both reduce anxiety and produce arousal (Kruger & Serpell, 2006). Studies suggest that even a minimal link with nature, such as looking at a tree outside the window, allows for increased productivity, increased healing of patients, and reduced sickness in prisons (Kahn, 1997).

According to Stephen Kellert (2005), in *Building for Life: Designing and Understanding the Human-Nature Connection*, people have three ways to connect to the non-human environment. They are direct, indirect, and symbolic. A direct relationship occurs when people hike in the woods or hunt caribou. An indirect relationship requires continuous human input.

Examples of this are a companion animal, such as a cat or dog, fish in an aquarium, a house plant, or a vegetable garden. Lastly, a symbolic relation is expressed through images such as a painted landscape, cave drawings, buildings imitating natural forms, or floral clothing patterns. Although humans may have a connection to the non-human environment in one or more of these ways on a daily basis, it is the quality of these interactions that have significance on human's physical and mental productivity and satisfaction.

Kaplan, Kaplan, and Ryan (1998), in *With People in Mind: Design and Management of Everyday Nature*, help explain the psychological and mental benefits of human interaction with the non-human world. These benefits are coherence, complexity, mystery, and legibility. Coherence enhances a human's ability to recognize and organize patterns. Complexity allows humans to identify diversity. Mystery and legibility examine complexities of the non-human environment and make sense of them. This can develop analytical thinking and creativity in humans.

2.1.3.2 Attachment Theory

Attachment theory provides a psychological and biological frame to explain the relationship between humans and animals. This theory, developed by John Bowlby, indicates that humans will maintain and obtain proximity to an attachment figure, especially in time of stress. A secure attachment relationship allows the person to have a secure base, which acts as a springboard for learning and exploration. Stress activates attachment; if a secure attachment figure is unavailable in a stressful situation, a person will have a fight/flight response. This response includes avoidance, ambivalence, and/or anger (Bertherton, 1995).

Dogs may act as this secure attachment figure (Palmer & Custance, 2008; Sable, 1995). Beck and Madresh (2008) provide that standard attachment measures can be used to investigate people's relationships with their pets and that pets are source of attachment for people. In

addition, Charnaud (2000) writes that many drug abuse patients have a difficult time forming attachments to humans. Instead, they may use a therapy dog as an object of attachment, due to the dog's non-verbal and non-judgmental traits. Julius, Beetz, and Niebergall (2010) suggest that relationships with dogs may have a significant impact on children that display insecure attachment. Their study indicates that these children were able to develop a secure attachment to a therapy dog, therefore allowing a secure attachment transition to the therapist.

2.1.3.3 Social Capital Theory

Putman (2000) defines social capital as “connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them” (p. 19). Reciprocity and trust allow for citizens to form groups and to accept diversity. This may enhance or create civic engagement. These social networks are important for a few reasons. According to Lin (1999), these social networks “facilitate the flow of information” (p. 31). This means that an individual will have access to more information while part of a social network than outside of one. Social networks may also reinforce a person's identity and worthiness. Associating with a certain social network that has the same interests and beliefs allows a person to gain confidence in their own ideas and beliefs.

Dudwick, Kuehnast, Jones, and Woolcock (2006) suggest that there are six dimensions to social capital. They are “groups and networks, trust and solidarity, collective action and cooperation, information and communication, social cohesion and inclusion, and empowerment and political action” (p. 11). They continue to write that groups and networks allow for collaboration with others concerning resources and goals. Trust and solidarity include an ability to rely on others. Collective action and cooperation and social cohesion and inclusion build on trust and solidarity but include working with others toward a specific goal (e.g., disaster relief).

Lastly, empowerment and political action is the “measure of control over the institutions and processes that directly affect their well-being” (p. 25).

In relation to education, Meier (1999) suggests that social capital affects educational attainment due to the quality of social relationships with students' family. Meier writes that family income (financial capital) and parental education (human capital) is used to determine a child's path. She recommends that there is a third area of capital – social capital – that may influence a child's path. In this study, she refers to social capital as the quality of the relationships between a student and their family.

Social capital theory may provide the explanation for the social benefits of human-animal interaction. The animals act as socializing agents. The animals provide a way to form relationships, or a social network, with other humans, thus, in turn, reducing loneliness, anxiety, and depression.

2.2 STUDENT PERSISTENCE, RETENTION, AND ENGAGEMENT IN HIGHER EDUCATION

Student success in higher education may be defined as the completion of the program of study (Yorke, 2004). Yorke suggests a few reasons why a student would depart from their program: financial problems, academic troubles, and “poor quality of the student experience, and unhappiness with the social environment” (p. 20). This section will focus on these last two reasons. Social support may be one way to create a positive student experience and inclusion in the social environment (Wilcox, Winn, & Fyvie-Gauld, 1985). Giddan (1988) defines social support as “giving and receiving aid, finding recognition and esteem from others, and those

manifold advantages that go with membership in a group such as a family, club, or associated in the workplace” (p. 6). Giddan continues that membership in a social support system provides benefits, such as obtaining information, solving programs, creating positive feelings of adequacy and self-esteem, and developing coping skills.

Further, developing supportive relationships with family and friends while in college contributes to the student’s academic and interpersonal success (Upcraft, Gardner, & Barefoot, 2005). Paul and Brier (2001) suggest that “friendsickness” causes anxiety for college students. “Friendsickness” may result in an unhealthy self-image and loneliness. Nicpon et al. (2006) indicate that a social support has a positive influence on persistence and that a social support may also reduce loneness. “Mattering” in college is also connected with student persistence (Rayle & Chung, 2007). Rayle and Chung (2007) define “mattering” as “the experience of others depending on us, being interested in us, and being concerned with our fate” (p. 22).

There are two hypotheses that suggest there is a link between social support and well-being. First is the “direct effect” hypothesis, which suggests that a person may find reprieve from stressful situations if they belonged to a social network (Wilcox, Winn, & Fyvie-Gauld, 2005). The second, “buffering” hypothesis, suggests that social support may act as a buffer between the person and the stressful situation (Cohen & Willis, 1985; Wilcox, Winn, & Fyvie-Gauld, 2005). For example, when a student enters college, they may feel stress about their new environment. Family and friends from home may act as a “buffer” for this student until they begin to develop new connections (Wilcox, Winn, & Fyvie-Gauld, 2005). These hypotheses provide reasons why social support might be linked to persistence. The social connection might limit or block stress, which is a factor in persistence.

Learning communities, one example of social support group, may promote engagement (Zhao & Kuh, 2004). Laufgraben (2005) writes, “Learning communities strengthen and enrich students’ connections to each other, their teachers, and the subject matter they are studying” (p. 371). Lenning and Ebbers (1999) further explain that learning communities can form around the themes of curricular, classroom, residential, and student-type and that students may belong to one or all of these groups. Laufgraben (2005) writes that learning communities may be beneficial to students because they “have a positive impact on student learning, satisfaction, persistence, and graduation rates” (p. 371). Also, the shared knowledge and resources may assist in building social capital, which in turn builds identity, social trust, and shared values (Kilpatrick, Barrett, & Jones, 2003). Kilpatrick, Barrett and Jones (2003) also suggest that belonging to a learning community may build respect for diversity because interacting with a variety of people with different ideas, thoughts, and beliefs enhances a student’s building of trust and fosters risk-taking. A feeling of being connected to a larger community creates a sense of belonging. This may be linked to positive self-reflections on social and academic situations (Pittman & Richmond, 2008). Student engagement in a learning community has a positive influence on grades, and first to second year persistence (Kuh, Cruce, Shoup, & Kinzie, 2008). Learning communities also assist in becoming a member of the school community. This helps fill the psychological need to belong (Kilpatrick, Barrett, & Jones, 2003). Learning communities assist in identity building, allowing students to define who they are and who they are not (Calderwood, 2000).

Students might find social connections in the various groups and organizations offered on campus. Fraternal organizations such as Greek sororities and fraternities assist in developing connections. There is a positive influence between joining Greek life and persistence (Astin,

1993). Joining these organizations may also present a way to connect with families if a family member had also joined the same Greek organization. The honors program, another avenue of joining, might assist in developing self-esteem and persistence (Astin, 1999). Joining this group may be problematic due to the grade prerequisite to join. Joining various ethnic groups also provides opportunities for students to connect with each other although there are some mixed results concerning joining an ethnic group. Sidanius, Levin, Van Laar, and Sinclair (2004) show that involvement created an “increased sense of ethnic victimization and a decreased sense of common identity and social inclusiveness” (p. 106).

2.2.1 Student Persistence, Retention, and Engagement Theories and Models

This section discusses the various theories and models associated with student persistence, retention, and engagement. These theories and models are concerned with the influences that help make a student successful in higher education. They are described here because they support the concept that communication and relationships are important components of success in higher education.

2.2.1.1 Identity Development

It is a human condition that young adults are burdened with the task of developing their identity during the years spent in higher education. If a young adult chooses to attend a higher education institution, the social relationships established during this time may aid and impact their identity development. Chickering (1969) developed a vector model to help explain identity development in higher education. These vectors build on each other but can also be reexamined by the student. These vectors include developing competence (mastering intellectual skills, physical skills, and

interpersonal skills), managing emotions (learning appropriate responses for fear, anxiety, and depression), moving through autonomy towards interdependence (function independently), developing mature interpersonal relationships (accepting differences and learning intimacy), establishing identity (comfort with self and self-acceptance), developing purpose (ability to be intentional and make goals), and developing integrity (developing core values and beliefs) (Chickering & Reisser, 1993). Chickering proposes that forming friendships and joining student communities may help the student develop across all seven vectors in his identity development theory. To have an effect, the friendships and groups should meet regularly and have opportunities for collaboration (Evans, Forney, & Guido-DiBrito, 1998).

2.2.1.2 Model of Institutional Departure

Vincent Tinto (1993) developed a model of institutional departure. The main idea of this model is that the more a student is integrated into the social and academic life of an institution, the greater the chance of retention. Tinto (1975) describes that students enter college with prior experiences, such as family background, individual attributes, and pre-college schooling. These experiences, having both direct and indirect influence, assist in developing the student's academic and institutional commitment. Once these commitments are made, integration into these realms has the most impact on retention. Integration involves student participation in academic activities, extra-curricular activities, faculty interactions, and peer interactions. Tinto provides that most departures are due to the student's lack of involvement or belonging in the school community (Ishler & Upcraft, 2005). According to Tinto (1975), "social integration should increase the likelihood that the person will remain in college" (p. 107).

Tinto (1993) suggests that an institution may develop student integration by filling the knowledge gap with transition services (assisting in the change from high school to college), provide monitoring services, and provide social and academic advising.

2.2.1.3 Student Involvement Theory

Alexander Astin's (1999) student involvement theory proposes that it "is the amount of physical and psychological energy that the student devotes to the academic experience. A highly involved student...devotes considerable energy to studying, spends much time on campus, participates actively in student organizations, and interacts frequently with faculty members and other students" (p. 518). Basically, this theory proposes that if the student is involved; this involvement may lead to a greater chance at retention. Astin suggests that the factors that achieve retention (living in residence halls, joining social groups, and participating in sports) all require deep involvement and commitment. It is then, in fact, this involvement and commitment that allows for retention.

2.2.1.4 Input-Environment-Outcome Model

Astin's (1993) input-environment-outcome model suggests that students enter college with a set of pre-existing characteristics (race, sex, age) then change/discard these characteristics or develop new characteristics based on their college environment experience. The outcome is the effect these characteristics have on variables such as retention or employment that may help in explaining the variables that can cause positive or negative outcomes in student persistence, retention, and graduation rates while in college (Isler & Upcraft, 2005). Astin's environmental variables are the variables that influence students while attending the college. According to Astin

(1993), the environmental interpersonal relationships established during college are a major variable for student persistence.

2.3 SUMMARY

The literature indicates there is a bond between human and animals. Additionally, this bond may serve to enhance a human's mental, physical, emotional, and social health. The human brain may be hardwired to respond to animals (Beck & Katcher, 2003, California Institute of Technology, 2011; Kahn, 1997; Kruger & Serpell, 2006). Because of this predisposition to recognizing animals, humans may prefer to use animals as attachment objects (as suggested in attachment theory) and or socialization agents (as suggested in social capital theory).

Each idea presented in the student persistence, retention, and engagement theories and models shows that the social relationship or community formation is a core determinate of positive student outcomes. Creating meaningful relationships help in creating a student identity. Belonging to a community assists in identity formation because the student is able to gain assurance of their values and viewpoints. Identity formation in young adults has a lasting effect on their ability to cope and process stress.

Student involvement in the social aspect of the educational institution appears also to be vital in student persistence and retention. Tinto and Astin explain student communities as a link to persistence and retention. Social capital theory suggests that social relationships create reciprocity and trust. Although this does not have a direct connection to student persistence, it does enforce the need for social relationships within society. The emphasis on social ties is prevalent in Chickering's, Tinto's, and Astin's research.

3.0 METHODS

Before this study was conducted, sponsors of this program were contacted: Marsha Robbins, Director of Humane Education at the Western Pennsylvania Humane Society, and Melissa Warthen, Advisor to the Resident Student Association. Both gave permission to conduct this study. The CCP is co-sponsored by the Western Pennsylvania Humane Society and the University of Pittsburgh's Resident Student Association (see Appendices E and F). This study met approval requirements of the University of Pittsburgh Institutional Review Board (see Appendix H).

This chapter focuses on the research methods used to answer the research questions and collect data necessary for analysis of the data. It provides a rationale for the case study approach and the procedures of data collection and analysis.

3.1 CASE STUDY METHOD

This study used a case study approach. The case study approach may be used when the “phenomenon under study is not readily distinguishable from its context” (Yin, 1993, p. 3). Merriam (1988) further explains that the case study approach may be appropriate when examining a specific program. The case is usually a bounded system that may represent an instance of a phenomenon (Merriam, 1998; Yin, 1993, 1994). In this study, a single case was

explored of the CCP at the University of Pittsburgh. It represents an instance of animal-assisted therapy in higher education. The case study approach is appropriate because this program is operated within and by the University of Pittsburgh and must be studied in the context of the program and the University.

Yin (1994) suggests, “a major strength of the case study design collection is the opportunity to use many different sources of evidence” (p. 91). Using multiple data sources of evidence is significant because it permits for data triangulation, which strengthens the findings of the case study. Data triangulation is the use of multiple data sources of evidence, such as surveys, observations, and archival records, to measure the same phenomenon (Yin, 1994). This study includes two mixed-method online instruments administered to the two participating groups. Both surveys are comprised of close-ended quantitative questions and open-ended qualitative questions. Close-ended quantitative questions were used because they may be the most effective tools to collect data for describing the demographics and attitudes of a population (Babbie, 2007). To corroborate this data and to provide further details, open-ended qualitative questions were also asked. Open-ended questions are used to gain “insight, discovery, and interpretation” (Merriam, 1998, p. 10). Specifically, open-ended qualitative questions allow people to answer on their own terms but still stay in the boundary of a structured questionnaire. The main aims here are clarification and elaboration (May, 2001).

3.2 DATA COLLECTION

3.2.1 Procedures

This study attempted to collect census information on the CCP along with responses to the survey instrument. The census population was taken during the 2012 Spring Academic Term (January 9, 2012 – April 24, 2012). The CCP met for a total of 13 weeks during the 2012 Spring Term. The CCP did not take place March 6, 2012 due to the university's spring recess.

Additionally during this term, the University of Pittsburgh was alarmed by a series of bomb threats from a few individuals during the latter part of this study period (Curry, 2012). According the University of Pittsburgh police commander Shawn Ellies, these bomb threats began the first week of March 2012 (Telephone Communication, May 1, 2012). Starting in April 2012, these threats resulted in the closing of academic buildings to anyone outside of the university. Therefore, the CCP was held outdoors on the Cathedral of Learning lawn on April 17, 2012. The CCP was cancelled on April 10, 2012 and April 24, 2012 due to inclement weather. Because the CCP was canceled April 24, 2012, the last day of the CCP of the 2012 Spring Term was April 17, 2012. The survey instruments were sent electronically using SurveyMonkey on April 22, 2012 to all volunteers and participants. A follow-up invitation to complete the survey was sent May 6, 2012.

3.2.2 Instruments

Two instruments were used in this study, one for the CCP participants (Appendix A) and one for the volunteer leaders of the CCP (Appendix B). Two instruments were used, one for each group;

some questions were not relevant to both groups. The participant questionnaire contained 13 closed-ended questions and 10 open-ended questions. The volunteer questionnaire contained 12 closed-ended questions and 10 open-ended questions.

Question 13 for participants (question 12 on the volunteer questionnaire), “How often have the following bothered you over the last 2 weeks?” included a 4-item Patient Health Questionnaire (PHQ-4). The PHQ-4 is a standard, validated, mood disorder-screening tool (Lowe, et. al., 2010; Kroenke, Spitzer, Williams, Lowe, 2009). It was included to gain participant demographic information.

In Table 3.1, the survey questions are mapped to the guiding research questions and the conceptual framework of this study. This provides a rationale for question development. The questions developed to create a program description were focused on the students’ and volunteers’ own experience at the CCP and frequency of visits at the CCP. The aim was to obtain an emic perspective of the CCP.

The first research question, how can animal-assisted activity programs help foster social capital at a major university?, is anchored by social capital theory (i.e., groups and network dimension), Tino’s model of institutional departure, and Astin’s students involvement theory. These theories were used in the development of this research question because they are based on the development of relationships and involvement in the community. In summary, these theories and models suggest meaningful relationships and student involvement aid in the persistence, retention, and engagement of the student. The relationships developed at the CCP are addressed in the second question. Therefore the survey questions created to assist in answering the first question ask about current involvement and increased involvement on campus. Additionally, the volunteers were asked about their involvement in other dog therapy program other than CCP.

Table 3.1. Conceptual Framework of the Research Questions

Research Question	Conceptual Framework	Questions
Program Description	Not applicable	<ul style="list-style-type: none"> • How often do you participate in the Campus Canines program? • Could you please describe a typical evening at the Campus Canines program? • How has this experience made you feel different? • Why do you come to the Campus Canines program?
1. How can an animal- assisted activity program help foster social capital at a major university?	<ul style="list-style-type: none"> • Social Capital Theory • Tinto's Model of Institutional Departure • Astin's Student Involvement Theory 	<ul style="list-style-type: none"> • How many extra-curricular activities are you involved in? • Could you please describe any increased involvement at the University of Pittsburgh due to the Campus Canines? • (Volunteer questionnaire) Could you please describe your participation in other volunteer dog therapy programs?
2. What types of relationships are fostered during the Campus Canines Program at the University of Pittsburgh?	<ul style="list-style-type: none"> • Attachment Theory • Chickering's Identity Development • Astin's Input-Environment-Outcome Model 	<ul style="list-style-type: none"> • Do you come alone? • I find it easier to communicate with others in the presence of a dog • Do you talk to friends about the Campus Canines program? • Do you talk to family about the Campus Canines program? • Could you please describe how this program allows you to remain connected to your family? • Could you please describe any continued communication with the people you have met in this program? • If you regularly attended with another friend, could you please describe how this program has affected your relationship? • If have you photographed the therapy dogs, did you share these photos with friends or family?
3. What groups are more likely to benefit from the Campus Canines Program at the University of Pittsburgh?	Not applicable	<ul style="list-style-type: none"> • Age • Gender • Do you live within 60 miles of campus? • Are you a student, faculty member, or staff member ? • If you are a student, do you consider yourself an undergraduate student? • If yes, do you consider yourself a freshman, sophomore, junior, or senior? • How often have the following bothered you over the last 2 weeks: • Could you please describe your current or previous experiences with dogs?

The second question asks: what types of relationships are fostered during the Campus Canines Program? The models of Chickering's identity development and Astin's input-environment-outcome model are the foundation of this question. These models are used because they suggest forming relationships will aid in identity development and that interpersonal relationships are a major factor in student persistence. All questions focus on current or new relationships fostered at the CCP.

Attachment theory proposes that people are able to learn and explore once they have a secure base. Although in most instances, a secure base refers to another human, in this case, a secure base may refer to the therapy dog. The therapy dog acts as a secure base allowing the students to learn and explore (i.e., meet new people). The question asking if students and volunteers find it easier to communicate with others in the presence of a dog is in direct response to this theory.

The last question, what groups are more likely to benefit from the Campus Canines Program, focus on census and demographic information. These questions were developed to gain a profile of the students and volunteers participating in the CCP. Additionally, this information is used to see if there are certain groups that may benefit from the CCP.

3.2.3 Participants

3.2.3.1 Population

Table 3.2 Dates of Attendance of Students and Volunteer CCP Participants

Dates of Attendance	Number of Students		Number of 1st Time Students		Number of Volunteers	
	Students	Percent	Students	Percent	Volunteers	Percent
January 10, 2012	38	14.1	23	11.5	6	30.0
January 17, 2012	44	16.3	31	15.5	7	35.0
January 24, 2012	41	15.2	21	10.5	11	55.0
January 31, 2012	51	18.9	31	15.5	9	45.0
February 7, 2012	31	11.5	16	8.0	9	45.0
February 14, 2012	23	8.5	0	0.0	5	25.0
February 21, 2012	23	8.5	0	0.0	5	25.0
February 28, 2012	43	15.9	20	10.0	6	30.0
March 13, 2012	26	9.6	8	4.0	5	25.0
March 20, 2012	29	10.7	11	5.5	10	50.0
March 27, 2012	38	14.1	16	8.0	10	50.0
April 3, 2012	28	10.4	8	4.0	14	70.0
April 17, 2012	27	10.0	15	7.5	11	55.0

Table 3.3 Descriptive Statistics of Student and Volunteer CCP Participants

Description	Number of CCP Participants	
	Participants	Percent
Student Participants' Gender		
Female	167	61.9
Male	103	38.1
Student Attendance		
1 Time	200	74.1
2-4 Times	57	21.1
5 or More Times	13	4.8
Volunteer Participants' Gender		
Female	17	85.0
Male	3	15.0
Volunteer Attendance		
1 Time	5	25.0
2-4 Times	5	25.0
5 or More Times	10	50.0

Table 3.4 University Affiliation of Student Group Participants

Type of Student Participants	Number of CCP Participants	Percent	Number of Study Participants	Percent
Undergraduate Students	251	93.0	63	91.3
Freshmen	86	31.9	14	20.3
Sophomores	89	33.0	27	39.1
Juniors	46	17.0	14	20.3
Seniors	30	11.1	8	11.6
Graduate Students	11	4.1	3	4.3
Staff Members	5	1.9	3	4.3
Community Members	3	1.0	0	0.0
Total Students	270	100.0	69	100.0

The prior observations of this program (Camaioni, 2011) indicated that there are two groups in the CCP: volunteers and participants. Although these observations provided some initial insights into the overall population of the CCP, a more detailed account of the two groups was needed to determine the total population size. Therefore during the 2012 Spring Academic Term, a census of the entire population was conducted. In terms of this study, the participant population is identified as all non-volunteer persons involved in the CCP at the University of Pittsburgh during the 2012 Spring Academic Term. From this point forward, the participant group will be defined as the student group. This was done because 97% of this group was students. It was also done to provide a more descriptive name to this group.

The census information was collected during the operating hours of the CCP. All students were asked to provide their name, email address, and their status (i.e.freshman, sophomore, junior, senior, graduate, staff member, faculty member, or community member) on a sign-in sheet. All volunteers were asked to provide their name, email address, and therapy dog(s) names(s) on a sign-in sheet. At the initial sign in, all participants were provided a postcard (Appendix D) explaining the study and requesting their participation on the CCP's Facebook page. Students and volunteers were asked to continue to sign in each week, even if they signed in during prior weeks. The sign-in sheet data was entered into Microsoft Excel. This population

information was shared with the Western Pennsylvania Humane Society and the University of Pittsburgh's Resident Student Association. CCP students and volunteers were identified by their voluntary participation in the CCP and by the CCP sign-in sheet. Students and volunteers that participated in the study were entered into a drawing for three \$10 Panera Bread gift cards. The winners were chosen randomly to receive the gift cards. Recruitment scripts are found in Appendices C and D.

The total number of students who participated in the CCP during the course of this study was 270; the total number of volunteers was 20 during the same time frame. The total number of canines involved in the CCP was 22. Table 3.2 shows the number of individuals who participated each week of this study. The number of students peaked on January 31, 2012 with 51 students attending the CCP. In contrast, the largest number of volunteers to participate was towards the end of the term on April 3, 2012 with 14 volunteers participating in the CCP. Table 3.2 also displays the date of participation for the one-time students. The CCP saw the highest number of first time students at the beginning of the term, a drop off during the weeks of February 14, 2012 and February 21, 2012, then an increase again starting the week of February 28, 2012.

Table 3.3 displays both groups by gender. The majority of both populations were female (167 students [61.9%] students and 17 volunteers [85%]). Table 3.3 also displays attendance where 200 (74.1%) of the students signed in only attended once. In contrast, 10 (50%) of the volunteers attended 5 or more times.

There were 251 students that labeled themselves as undergraduates. The majority of students were freshman (31.9%) and sophomores (33%) totaling 64.9% of the student group (please see Table 3.4). According to the University of Pittsburgh's Factbook 2012, there were

25,242 undergraduates during the 2011 Fall Term. Therefore, 1% of the undergraduate population attended the CCP.

3.2.3.2 Respondents

Table 3.5 Descriptive Statistics of Student and Volunteer Study Participants

Description	Number of Study Participants	Percent
Student Participants' Gender		
Female	51	74.0
Male	18	26.0
Student Ages		
18 Years Old	9	13.0
19 Years Old	15	22.0
20 Years Old	23	33.0
21 Years Old	14	20.0
22 Years or Older	8	12.0
Distance Students Live from Campus		
Within 60 miles of campus	42	61.0
Beyond 60 miles from campus	27	39.0
Participation in the CCP		
1st Time at the CCP	4	5.8
Once a Term	5	7.2
Once a Month	37	54.0
Every Week	23	33.0
Involvement in Extracurricular Activities		
1-2 activities	48	70.0
3-4 activities	18	26.0
4-5 activities	3	4.0
Volunteer Participants' Gender		
Female	10	91.0
Male	1	9.0
Volunteer Ages		
25-40 Years Old	2	18.0
41-55 Years Old	6	55.0
56 Years or Older	3	27.0
Distance Volunteers Live from Campus		
Within 60 miles of campus	11	100.0
Beyond 60 miles from campus	0	0.0
Participation in the CCP		
1st Time at the CCP	1	9.0
Once a Term	1	9.0
Once a Month	1	9.0
Every Week	8	73.0

All 270 CCP students were selected for this study and 69 responded to the survey with a 25.5% response rate. All 20 CCP volunteers were asked to participate in this study and 11 responded to the survey with a 55.0% response rate. While there are numerous reasons that may explain the reason for the respective response rates – such as survey length and interest in topic and compensation (Sheehan, 2001) – the response rates may be best explained in terms of when the survey was sent. Because the survey was sent at the end of the term, most students were finishing finals or may have already left campus for the term. In addition, the bomb threats forced many students to leave even before the end of the term. During the summer months, it may be unlikely that they students check their school account emails. I was aware that at the beginning of the study that the timing may be an issue and this might influence the response rate but it was important to send the survey at the end of the term for a few reasons. First, the entire population needed to be counted for the term to obtain an accurate number, especially of the repeating students. Also, capturing the students and volunteer responses for the entire 2012 Spring Term was important in terms of the case study method, which looked at the CCP over the course of the 2012 Spring Term.

The descriptive statistics of the student and volunteer study participants are presented in Table 3.5. The majority of students and volunteers were female (51 students [74%] students and 10 volunteers [91%]). About one-third of the student are age 20 and about half of the volunteer are between 41 to 55 years old. Most students and volunteers live within 60 miles of campus (42 students [61%] students and 11 volunteers [100%]). About half of the students came once a month whereas about three-fourths of the volunteers came once a week. Lastly, a majority of students are involved in one to two extracurricular activities (70%).

3.3 DATA ANALYSIS

The survey instrument was sent to the entire population electronically using SurveyMonkey, a web-based survey administration tool. This tool was used because it allows for mass transportation of the survey instrument to the population. Also, a web-based survey permits the respondents to complete the survey at their convenience.

Some questions in this dissertation will be analyzed quantitatively and some qualitatively. All open-ended survey questions were entered into NVivo qualitative analysis software, which was used to compile, code, and analyze each of the survey questions. The close-ended survey questions were initially entered into Microsoft Excel then imported in NVivo to explore the relationships and themes with the qualitative data.

The following procedure was followed to decode qualitative responses from the Student and Volunteer Surveys. The survey responses were coded using an alpha-numeric format (SXX-XX and VXX-XX). The letters indicates if the response was from a student (S) or volunteer (V). The first set of numbers indicates the participant's or volunteer's assigned numeric code to retain anonymity. The second set of numbers indicates the question number. For example, S01-01 would indicate student number one's response to question number 1.

3.3.1 Domain Analysis

The data were then coded and classified using James Spradley's (1980) domain analysis approach. Domain analysis is creating categories of meaning. These categories are developed using cover terms (Y), included terms (X), and the relationship between the cover term and included term (Parke & Griffiths, 2008). Spradley (1980) suggests a few types of relationships

between the cover term and the included term. They are strict inclusion (X is a kind of Y), spatial (X is a part of Y), cause-effect (X is a result/cause of Y), location for action (X is a place for doing Y), and means-end (X is a way to do Y). For example, water is a *kind of* drink or ice cubes are a *part of* a drink. This approach was used for this dissertation because it provides a method to identify the social components of the CCP (Parke & Griffiths, 2008). Also, Spradley's approach allows for the detection of major domains (Spradley, 1980). These domains are needed as a starting point for any further research on this program.

The first step in my analysis was to conduct an open coding of the data. This involved going through the data to label or code the cover terms and included terms (Neuman, 1997). For example, I formulated the cover term of participant then any included term such as female, freshmen, or volunteer. I continued to explore all domains types such as actors, spaces, feelings, events, and objects (Parke & Griffiths, 2008).

The next step taken was axial coding, which allowed me to identify the types of relationships that emerged between the cover term and included term. I charted the common semantic relationships to detect the domains. Neuman (1997) suggests that a semantic relationship explains how the terms are categorized together. This step also provided an opportunity to organize and reexamine the domains (Neuman, 1997). During this step, I was able to add denotation and meaning to the domains. For example, I determined that there was a strict inclusion relationship between female and participant (female is a kind of participant).

3.4 STUDY VALIDITY AND RELIABILITY

3.4.1 Case Study

Validity measures the accuracy of the measurement instrument (Babbie, 2007). Reliability is the repeated use of a measurement instrument that obtains the same results (Babbie, 2007). In terms of this qualitative study, Yin (1994) suggests that the case study data collection procedures (protocol, instrument, and participant selection) can be a basis for validity and reliability. Following these procedures with each participant provides a level of rigor which allows for validity and reliability (Flyvbjerg, 2004). In this study, the same recruitment and data collection procedures were used with each participant. All students were asked to provide their demographic information on a sign-in sheet (there was a sign posted in the middle of the room where the CCP occurred each week, which indicated the location of the sign-in sheet). All students who signed in were given a postcard giving an overview of the study. All volunteers were also asked to provide their demographic information on the sign-in sheet each week. Additionally, all students and volunteers who participated in the CCP were selected to participate in this study to limit selection bias. The data was collected from all participants through Survey Monkey.

Kohn (1997) suggests that obtaining feedback and consulting other researchers may increase the validity and reliability of the study. This study has been reviewed multiple times by members of the dissertation committee.

Another suggested technique is to use multiple sources of evidence to ensure validity (Riege, 2003; Yin, 1994). Examples of this triangulation technique include the use of surveys, observations, and interviews. This study only used one data collection technique—administration

of a survey—primarily due to my limitation on time and financial resources. For future research on this topic, it would be beneficial to conduct interviews in conjunction with a survey.

3.4.2 Survey Instrument

One way a survey instrument is tested for reliability is through the test-retest procedure (Litwin, 1950). This procedure calls for the respondents to complete the survey at two different points of time to see if the same results are yielded. For example, asking a respondent's gender should yield the same results from the two time points. Therefore, the question can be considered reliable. This is also referred to as temporal reliability (Payne & Payne, 2004). The survey included questions such as asking participants to indicate their gender. Although the survey was administered only once, participants were asked to provide similar demographic information about themselves each time they participated in the CCP through filling out their information on the sign-in sheet. When matched together, responses from the surveys and the sign-in sheets were in agreement.

The content validity of the instrument was strengthened by having the instrument reviewed by others that were familiar with the research topic or research methods (Litwin, 1995). The survey for this study was reviewed multiple times by Dawn Marcus and W. James Jacob. Additionally, Warthen and Robins, both CCP experts, were provided copies of the survey for their review and comments.

3.5 SUMMARY

This chapter details the rationale of the methods of this research study. The case study approach best suits this phenomenon because of the CCP at the University of Pittsburgh represents one case of an animal-assisted activity program at a major university. The census creation intervention was a necessary step in the research process. Not only did it provide need information for this study, but it also provided necessary information to the Western PA Humane Society and the University of Pittsburgh's Resident Student Association. The both populations was selected because of its small size. The quantitative and qualitative questions were developed in an attempt to answer the three research questions and also provide further details of the program and a demographic profile of the people participating in the program. These questions were aligned with the larger research questions and mapped to the conceptual framework in Table 3.1. Finally, the respondent's answers were complied, coded, analyzed using NVivo software.

4.0 FINDINGS

This research study attempted to provide a program description and provide responses to my guiding research questions (please see Table 3.1). In this chapter, I discuss the findings of each of these questions and make inferences to the literature and conceptual frameworks discussed in Chapter 2. Qualitative responses ranged from one to two sentences in length. The chapter is divided into two main sections. First, responses answering the guiding research questions are discussed and analyzed. Second, responses of participants are grouped into three overarching themes: (1) dogs are the attraction to the CCP, (2) human interactions are happening at the CCP, and (3) the CCP may provide stress relief and relaxation to students.

The findings and discussions represent the respondents of the survey (69 students and 11 volunteers) and may not represent all participants of the CCP. Please see Table A.1 for the response rate for each survey question.

4.1 RESPONSES TO THE GUIDING RESEARCH QUESTIONS

4.1.1 Program Description

The majority of the student and volunteer responses describe the program in relation to their interactions with the dogs, volunteers, and students in their description of a typical evening at the

CCP. Additionally, a significant amount of both student and volunteer responses referenced feeling “relaxed” after the CCP.

Forty of the students described interacting with the dog during a typical evening. The interactions included petting and visiting with the dog. Two examples of these descriptions are from two female students. They noted, “[I] go around to each of the dogs and pet them” (S18-14) and “(I) visit with all of the dogs for a few minutes apiece first and then go sit with my favorites” (S41-14).

The students also described a typical evening by their interactions with the volunteers and other students. One-third described interacting with the volunteers and 10 students described interacting with other students. An example is one female student who noted, “Everyone ... talks to the owners and other students about (the dogs)” (S04-14). Seven of the volunteer respondents also mentioned interacting with the students. One female volunteer wrote of a typical CCP evening as “spending the next hour talking to and engaging with students, faculty, staff – whoever comes through the Cathedral!” (V11-13).

Additionally, the students described feeling “relaxed.” Ten of the responses mentioned feeling relaxed after leaving. One female student responded, “I tend to come in really tense from the stresses of life, and an evening with the campus canine program provides me a noticeable sense of relief and relaxation” (S61-14). The volunteer respondents also noted that they feel relaxed after an evening at CCP. One female volunteer wrote, “(It is) relaxing–talking to students about my dog–Bruna” (V09-13).

When asked how this experience has made them feel different, 49 of the students wrote that the CCP makes them happy, feel better, and relieves stress. One example is where one female student indicated, “It definitely reduces my stress and makes me feel better when I visit.

There are days, especially this past term, that were so difficult that I'd have been crying, and then I came to see the dogs and hugged them and got kisses and talked to their parents and suddenly the world didn't seem so bleak. It just really improves my mood and quality of life" (S41-18).

Additionally, four of the student responses indicate that they feel the CCP creates a sense of community. A male student wrote, "It definitely helped create a greater sense of community and friendship between myself and the people I see at the events" (S16-18).

Ten volunteers responded that the CCP makes them feel helpful and happy for the service that they provide. One example is where a female volunteer wrote, "I always come away from this therapy visit feeling good about myself and what we do. The students are so very appreciative [of] us volunteering our time and our dogs. It is food for the soul" (V07-16). Three volunteers also wrote that they feel proud of their dog. One female volunteer wrote, "[I am] proud of the level of training my dog" (V02-16).

Students listed several reasons for attending the CCP. The majority of students answered that they come to the CCP for a stress reliever (28) and to interact with the dogs (38). One female student wrote, "It's really relaxing visiting with all the dogs, really helps to relieve stress from school" (S51-19). Six students mentioned that they come to the CCP because they had a class around the time of the CCP. Other students mentioned that they come because it reminds them of home (6). Lastly, 6 students wrote that they come to meet new friends and to talk to the volunteers.

Eight of the volunteers answered that they come to the CCP for their own enjoyment or for their dog's enjoyment. For example, a female volunteer wrote, "I enjoy it, as does my dog" (V06-17). Five volunteers also discuss visiting with the participants. A female volunteer wrote, "We love to visit with the kids" (V01-17).

4.1.1.1 Program Description Results

The results from the participant program description reveal that the students and volunteers describe the program as their interaction with the dogs and other volunteers and students. This may indicate that the key components of this program are the dogs, the volunteers, and the students. This also may indicate that social interactions are occurring at the CCP. Comments from a minority of students support an important social aspect of the CCP for enhancing relationships within the University community. Although this description does not provide the depth of these interaction, the literature (Astin, 1993; Astin, 1999; Chickering, 1969; Lin, 1999; Putman, 2000; Tinto, 1973, Tinto, 1993) suggests that social interactions may be the building blocks to increased personal and social benefits such as building one's identity (Chickering, 1969), increased social capital (Lin, 1999; Putman, 2000), and increased retention rates (Astin, 1999; Tinto, 1993).

These descriptions also show that the dogs are what attract the students to the CCP. This may support the biophilia hypothesis that humans are genetically programmed with the need to interact with nature (Kahn, 1997). Another explanation is that these students already have an affinity to dogs due to their background or personality. When students were asked about their experience with dogs, they responded that they love them, own one, or has owned one. This reveals that the type of student coming to this program already has an attraction to dogs and experience with dogs. The CCP capitalizes on this affinity toward dogs by using dogs as a conduit to facilitate social interaction with dogs and participating humans.

Both groups also described the program as a way to obtain positive emotions such as feeling happy and feeling better. Additionally, the students and volunteers mentioned that this program is a stress reliever. These results support the literature that human-animal interactions

provide benefits for emotional health (Coakley & Mahoney, 2009; Folse, Minder, Aycock, & Santana, 1994). Also, the students may experience stress relief because the dogs act as a secure attachment figure as described in attachment theory (Bertherton, 1995; Palmer & Custance, 2008; Sable, 1995). The emotional benefits may also be due to the student's and volunteer's predisposed attraction to dogs. For example, the volunteers described that they feel proud of their dogs, which makes them happy. Additionally, the act of volunteering may provide its own personal benefits.

4.1.2 Animal-Assisted Activity Programs and Social Capital

The first question this study attempted to answer was how an animal-assisted activity program can help foster social capital at a major university. The participants were asked about their increased involvement at the university. Forty-one students indicated that the CCP did not increase their involvement. It is notable that nine of the students mentioned meeting new friends at the CCP. For example a female student wrote, "I have made new friends that got me involved in new activities after we met at the Campus Canines program; it also gets me down to campus in the evening" (S41-17). Additionally, seven of the students answered that the CCP is a reason to leave their apartment/dorm room for the evening. For example a female student wrote, "I'm more likely to leave the house on a Tuesday night" (S19-17).

There were not any volunteers that felt the CCP increased their involvement at the University of Pittsburgh. Additionally, three of the volunteers also stated that they were not involved in any other dog therapy programs. One volunteer stated they were involved in one other program, four stated they were involved in two other programs, and two stated they were involved in three other programs.

4.1.2.1 Animal-Assisted Activity Programs and Social Capital Results

The results indicate that the CCP does not increase involvement in other programs at the University of Pittsburgh. Forty-one of the students wrote that the CCP did not increase their involvement at the University of Pittsburgh. This does not corroborate social capital theory's tenet of increased community participation (Lin, 1999; Putman, 2000). The CCP may not have increased student involvement because the students were already involved in other activities at the university. Forty-eight students noted that they are already involved in one to two extra-curricular activities (please see Table 3.5).

Although the CCP does not increase involvement at the university, participating in the CCP is a type of community involvement. Chickering (1969) suggests that for these communities to have an effect, the groups should meet regularly and have the opportunity of collaboration. It is unknown if the CCP provides opportunity for collaboration, but the findings do indicate that the CCP does meet regularly and provides the opportunity to interact with other students and volunteers. Additionally, Tinto's model of institutional departure and Astin's student involvement theory both suggest that the more a student is involved, or integrated, into the social life of an institution, the greater the chance of retention. The CCP may be a program that allows for involvement in the university.

4.1.3 Relationships at the Campus Canines Program

Table 4.1. Student and Volunteer Responses Concerning Communication in the Presence of a Dog

Group	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Students	0 (0%)	1 (1%)	19 (28%)	34 (49%)	15 (22%)
Volunteers	1 (9%)	0 (0%)	7 (64%)	2 (18%)	1 (9%)

Table 4.2 Student and Volunteer Responses Concerning Relationships and the CCP

Question	Group	Always	Often	Sometimes	Never
Do you come alone to Campus Canines?	Students	8 (12%)	10 (14%)	32 (46%)	19 (28%)
	Volunteers	5 (46%)	0 (0%)	3 (27%)	3 (27%)
Do you talk to friends about the Campus Canines program?	Students	12 (17%)	31 (45%)	24 (35%)	2 (3%)
	Volunteers	6 (55%)	4 (36%)	1 (9%)	0 (0%)
Do you talk to family about the Campus Canines program?	Students	7 (10%)	26 (38%)	31 (45%)	5 (7%)
	Volunteers	6 (55%)	3 (27%)	1 (9%)	1 (9%)
Have you photographed the therapy dogs?	Students	2 (3%)	3 (4%)	24 (35%)	40 (58%)
	Volunteers	1 (9%)	1 (9%)	3 (27%)	6 (55%)

The second question sought to describe the types of relationships that are fostered during the CCP. In terms of a social stimulant to encourage communication between people, the majority of students agreed or strongly agreed that is easier to communicate in the presence of a dog (please see Table 4.1). The majority of volunteers were moderate in their answers with the majority indicating they neither disagreed nor agreed (please see Table 4.1).

Table 4.2 shows the results of questions concerning the participants' current relationships and the CCP. For the students that regularly attended with a friend, they were asked how the CCP has affected their relationship. Twenty-seven of the students indicated that the CCP had brought them closer to the friend that attended with them. Specially, it allowed them to bond. For example a female student wrote, "It became a tradition and strengthened our friendship quite a bit" (S06-21). Another example is where a male students wrote, "Sharing this time together has strengthened our relationship and has given us a platform to discuss our relationships with our pets" (S17-21). Other responses indicate that they did not attend with a friend.

Three volunteers indicated that they attended with a friend. One female volunteer noted, "I come with my husband and we both look forward to the canine college each week—we talk about other dogs and handlers and what happened from week to week. And, as always, Bruna's antics!" (V09-19). Another female volunteer wrote, "Our team of canines handlers have become fast friends" (V11-19). Other responses indicate that they did not attend with a friend.

The students were also asked if they remained in contact with the people they met at the CCP. Forty-six of the students responded that they did not have any continued communication with people they met at the CCP. There was a small number, 7, that mentioned they used the CCP as a way to reconnect with their friends. One example is where a female student noted, “Puppy night has worked really well for me as actually a place to reconnect with friends. If I see someone I haven't spoken to in a while, we make plans to meet at puppy night and are able to talk again while doing something else, so nothing is awkward” (S09-20). Also, 4 students answered that they continue communication through the CCP’s Facebook page.

Half of the volunteers felt that they did not continue any communication. Some, 3 volunteers, explained they continue their communication with fellow volunteers. A female volunteer wrote, “[I continue communication by] meeting fellow therapy dog people and finding out different things that they do and we may try in the future” (V09-20). Also, 2 of the volunteers mention talking to the same students every term.

In terms of talking to friends and family, about half of the students indicated that they often talk to their friends about the CCP and about half indicated that they sometimes talk to their family about the CCP (please see Table 4.2). Additionally, when asked if the CCP was a factor in remaining connected to their families, 20 of the students felt it helped them communicate with their family and 21 of the students felt connected because they have a dog at home. One female student wrote, “My mother loves dogs much more than I do and the program allows me to talk to her about them when I usually can't relate” (S33-16). Also notable is that 16 of the students felt the CCP was not a factor in remaining connected with their families.

Lastly, participants were asked if they photographed the therapy dog. This was noted in Camaioni (2011) that students used shared photographs of the dogs to promote connections with

friends and family. The responses, shown in Table 4.2, indicate that the majority of the students and volunteers sometimes or never photograph the therapy dogs. For those participants that did note that they photographed the therapy dogs, one-third of the students wrote that they take photographs and show them to their family because, as one female student wrote, “the dogs are so cute!” (S01-22). Also interesting is that 3 students wrote that they use the photos to post on Facebook and Twitter. One example is where a male student wrote, “I put the photos on Facebook each with the appropriate name. I believe I have 37 dogs on Facebook” (S43-22). Other responses indicate that they did not photograph the dogs.

Two volunteers indicated that they photographed the therapy dogs. One female volunteer wrote, “Yes because I wanted to show them the other dogs I talk about and to see Bruna in action with the students” (V09-20). In addition, another volunteer noted, “I share the photos that the students post because they are adorable” (V11-20).

4.1.3.1 Relationships at the Campus Canines Program Results

The results indicate that there are two main types of relationships fostered during the CCP. They are family relationships and friend relationships. The majority of the students often or sometimes talk to their friends and family about the CCP. Interestingly, when asked how this program allows you to remain connected to your family, 20 students answered that it helped with communication and 21 wrote that it helped connect with their family because they have a dog at home. These results do support that the family relationship is fostered during the CCP. Additionally, for those students that attended with another friend, 27 students indicated that the CCP has helped bring them closer to their friend. This supports that established relationships are fostered during the CCP.

These relationships may be a basis for social support. The literature indicates that supportive relationships with family and friends while in college contribute to the student's academic and interpersonal success (Upcraft, Gardner, & Barefoot, 2005). Additionally, Chickering's identity development and Astin's input-environment-outcome model suggest that forming relationships will aid in identity development and in interpersonal relationships. These are collectively major factors in student persistence. Therefore the relationships fostered at the CCP may aid in student persistence at the University of Pittsburgh.

Attachment theory proposes that people are able to learn and explore once they have a secure base. In this study, the therapy dog acts as the secure base. Specifically, when asked if students find it easier to communicate with others in the presence of a dog, 49 (71%) students responded that they agree or strongly agree that they do find it easier to communicate with others in the presence of a dog. Therefore, the students may see the therapy dog as a secure base that then allows them to explore and meet new people. To support this, new social interactions do seem to be present at the CCP, but it does not appear that these interactions result in lasting bonds. The results indicate that 46 of the students do not have any continued communication with anyone they met. The results may suggest that students are gaining enough additional social support in that one hour every Tuesday and it is not necessary to continue outside of CCP.

4.1.4 Groups at the Campus Canines Program

Table 4.3. Student Responses for PHQ-4

Question	Not at All	Several Days	More than Half the Days	Nearly Every Day
a. Feeling nervous, anxious, or on edge	6 (9%)	36 (52%)	18 (26%)	9 (13%)
b. Not being able to stop or control worrying	17 (24%)	33 (48%)	13 (19%)	6 (9%)
c. Feeling down, depressed, or hopeless	29 (42%)	32 (46%)	7 (10%)	1(2%)
d. Having little interest or pleasure in doing things	41 (59%)	24 (35%)	3 (4%)	1(2%)

Table 4.4 Groups' Responses to if It is Easier to Communicate with Others in the Presence of a Dog

Group	Strongly Disagree	Disagree	Neither agree nor agree	Agree	Strongly Agree
Male	0 (0%)	0 (0%)	3 (17%)	12 (67%)	3 (17%)
Female	0 (0%)	1 (2%)	16 (31%)	22 (43%)	12 (24%)
Within 60 miles of campus	0 (0%)	0 (0%)	11 (26%)	18 (43%)	13 (31%)
Beyond 60 miles of campus	0 (0%)	1 (4%)	9 (33%)	15 (56%)	2 (7%)
Freshman/Sophomore	0 (0%)	1 (2%)	12 (29%)	20 (49%)	8 (20%)
Junior/Senior	0 (0%)	0% (0%)	6 (27%)	10 (46%)	6 (27%)
Normal/Mild PQH-4	0 (0%)	1 (2%)	14 (25%)	28 (50%)	13 (23%)
Moderate/Severe PQH-4	0 (0%)	0 (0%)	5 (38%)	6 (46%)	2 (15%)
Frequency – attended for the first time	0 (0%)	0 (0%)	1 (25%)	2 (50%)	1 (25%)
Frequency – attended every week	0 (0%)	0 (0%)	8 (35%)	9 (39%)	6 (26%)

Table 4.5 Groups' Responses to if They Talk to Friends about the CCP

Group	Always	Often	Sometimes	Never
Male	6 (34%)	8 (44%)	4 (22%)	0 (0%)
Female	6 (12%)	23 (45%)	20 (39%)	2 (4%)
Within 60 miles of campus	8 (19%)	19 (45%)	14 (33%)	1 (2%)
Beyond 60 miles of campus	4 (15%)	12 (44%)	10 (37%)	1 (4%)
Freshman/Sophomore	5 (12%)	22 (54%)	13 (32%)	1 (2%)
Junior/Senior	5 (23%)	8 (36%)	8 (36%)	1 (5%)
Normal/Mild PQH-4	10 (18%)	25 (45%)	19 (34%)	2 (4%)
Moderate/Severe PQH-4	2 (15%)	6 (46%)	5 (38%)	0 (0%)
Frequency – attended for the first time	0 (0%)	0 (0%)	3 (75%)	1 (25%)
Frequency – attended every week	6 (26%)	12 (52%)	5 (22%)	0 (0%)

Table 4.6 Groups' Responses to if They Talk to Family about the CCP

Group	Always	Often	Sometimes	Never
Male	3 (17%)	8 (44%)	6 (33%)	1 (6%)
Female	4 (8%)	18 (35%)	25 (49%)	4 (8%)
Within 60 miles of campus	6 (14%)	16 (38%)	17 (40%)	3 (7%)
Beyond 60 miles of campus	1 (4%)	10 (37%)	14 (52%)	2 (7%)
Freshman/Sophomore	5 (12%)	20 (49%)	15 (37%)	1 (2%)
Junior/Senior	1 (5%)	8 (36%)	9 (41%)	4 (18%)
Normal/Mild PQH-4	6 (11%)	23 (41%)	22 (39%)	5 (9%)
Moderate/Severe PQH-4	1 (8%)	3 (23%)	9 (69%)	0 (0%)
Frequency – attended for the first time	0 (0%)	0 (0%)	2 (50%)	2 (50%)
Frequency – attended every week	6 (26%)	14 (61%)	3 (13%)	0 (0%)

Question 3 sought to uncover which groups are more likely to benefit from the CCP. For the purposes of this question, the students were grouped by gender, distance of their home from Pittsburgh, school affiliation, and degree of depression and anxiety. These groups were used to see if gender was a factor, if the distance from the student's family was a factor, if the level of experience at the university was a factor, and if mental health was a factor.

The first three groups have already been established in Chapter 2. To group the students' according to their degree of depression and anxiety, the students were asked a series of mental health questions using a standardized and validated questionnaire (PHQ-4) that screens for depression and anxiety. This allows for a basic image of the students' mental health in terms of depression and anxiety. The PHQ-4 is scored by assigning not at all=0, several days =1, more than half the days=2, and nearly every day=3. Table 4.3 shows the results of the student responses for the PHQ-4.

The respondents' answers were added together to determine their PHQ-4 score. The scores are rated as normal (0-2), mild depression and anxiety (3-5), moderate depression and anxiety (6-8), and severe depression and anxiety (9-12). The student responses show that 22 of the students scored in the normal range, 34 students scored in the mild range, 11 students scored in the moderate range, and two scored in the severe range.

The three survey items used to indicate if certain groups benefit from the CCP are (1) I find it easier to communicate with others in the presence of a dog, (2) Do you talk to friends about the Campus Canines Program?, and (3) Do you talk to family about the Campus Canines program? These three items were chosen because they provide a quantitative indication of the level of social interactions and social relationships provided by the CCP.

Table 4.4 displays the four groups' responses to the survey item describing if it is easier to communicate with others in the presence of a dog. It is notable that there are a larger percentage of males who agree that it is easier to communicate with others in the presence of a dog with a 24% difference between the males and females. Also notable in Table 4.4 is that there is a larger percentage of students that live within 60 miles of Pittsburgh that strongly agree that it is easier to communicate with others in the presence of a dog with a 24% difference between those who live within 60 miles and those who do not. There is no notable difference between students divided by school affiliation (under- vs. upperclassmen). When divided between normal/mild and moderate/severe distress using the PHQ-4 rating, there are a larger percentage of students categorized as moderate/severe that neither disagree nor agree with a 13% difference between moderate/severe and normal/mild.

The next survey item reviewed is do you talk to friends about the CPP. Table 4.5 displays the groups' responses to this question. It is notable that there are a larger percentage of males who answered that they always talk to their friends about the CCP with a 22% difference between the males and females. Also notable is there are a larger percentage of females that answered they sometimes talk to their friends about the CCP with a 17% difference between females and males. There is no notable difference between students who live within 60 miles and those that do not live within 60 miles. A larger percentage of freshman/sophomores answered

that they often talk to their friends about the CCP and a larger percentage of junior/senior answered that they always talk to their friends about the CCP. There is an 18% difference between freshman/sophomores and junior/seniors who often talk to their friends and an 11% difference between freshman/sophomores and junior/senior who always talk to their friends. There is no notable difference between students categorized using the PHQ-4.

The last survey item is do you talk to family about the Campus Canines program and Table 4.6 exhibits these results. There is a larger percentage of females who sometimes talk to their family about the CCP with a 16% difference between females and males. Additionally, there is a larger percentage of males who often and always talk to their family about the CCP with a 9% difference between males and females who often talk to their family and a 9% difference between males and females who always talk to their family about the CCP. There is a larger number of students that live within 60 miles of Pittsburgh who always talk to their family about the CCP with a 10% difference between those who live within 60 miles and those who do not. Most notable are the larger percentage of freshman/sophomores who always talk to their family about the CCP and the larger percentage of junior/senior who never talk to their family about the CCP. There is a 7% difference between the freshman/sophomore and junior/senior who always talk to their family about the CCP. Additionally, there is a 16% difference between junior/senior and freshman/sophomore who never talk to their family about the CCP. When looking at Table 4.6, there is a larger percentage of students categorized as moderate/severe who sometimes talk to their family about the CCP with a 30% difference between moderate/severe and normal/mild. Also, there is a larger percentage of normal/mild students who often talk to their family about the CCP with an 18% difference between the normal/mild students and the moderate/severe students.

4.1.4.1 Groups at the Campus Canines Program Results

Gender Effects

In terms of using dogs to enable easier communication between people, the males who participated are more likely to find a dog useful for communication. Also, more males than females always or often talk to their friends and family about the CCP. Although the group of males was small with 18 respondents, it may be that the CCP attracts males who find dogs useful in communicating with other people.

In this sample, a minority of males (n=3) reported not finding it easier to communicate in the presence of a dog. Looking at these males specifically, 2 of them indicated that they sometime talk to their friends and family about the CCP while 1 indicated that he always talks to his friends and family about the CCP. These results may show that these males may not need the dog to act as a social lubricant during the CCP activity; however, the program did appear to provide a vehicle for broader social engagement.

A similar analysis of the 16 females who also did not find it easier to communicate in the presence of a dog likewise found evidence for enhanced social connections outside of the CCP activity. Out of those females, half often talked to their friends about the CCP and half sometimes talked to their friends about the CCP. Additionally, 2 always talked to their family about the CCP, while 7 often and 7 sometimes talked to their family about the CCP.

For both genders, the program still provided opportunities to improve their connections with friends and family, even among students who did not find it easier to communicate in the presence of a dog. This finding highlights the importance of investigating a range of potential social connections rather than a single connection outcome to better understand the potential effects of CCP.

Distance from Home

The distance from family factor reveals that there was a 24% difference between those that live within 60 miles and those that do not in the strongly agree category of it is easier to communicate in the presence of a dog. This may indicate that schools that have a large population of local students may benefit from this program as much as schools that have a large population from out of town students. While there is no notable difference when talking to friends about the CCP, there is a difference when talking to family about the CCP. Those that live within 60 miles of Pittsburgh seem to talk to their family more about the CCP. This may be because they see or interact with their family more often due to proximity of the family.

Year of Education

Year in college (i.e., freshman, sophomore, junior, or senior) does not appear to influence the ease of communication. This may indicate that lowerclassmen benefit from interacting with the dogs as much as upperclassmen. While slightly more underclassmen talk to their friends about the CCP, there are significantly more underclassmen, 20%, that always or often talk to their family about the CCP. This may be because underclassmen speak to their family more often because they are adjusting to a new environment.

Mood Disturbance

There are not any prominent differences between the normal/mild mood disturbance group and the moderate/severe group in relation to the ease of communication in the presence of a dog. Overall, the normal/mild group seems to communicate more with their family about the CCP than the moderate/severe group. Although the moderate/severe group is a small portion of the respondents with 13 students in this group, these results may suggest that the students identified

as moderate/severe may need additional resources for aid in communication with peers and family.

For further analysis, the two students categorized as in the severe mood disturbance group were separately evaluated. Neither found it easier to communicate in the presence of a dog; however, both students noted that they always or sometimes talk to their friend and family about the CCP. This may indicate that the program may still benefit the severe group even if the dog is not the social facilitator during the CCP activity.

Participation Frequency

The students were also divided by the frequency of their visit (please see Tables 4.4, 4.5. and 4.6) A comparison was made between those students visiting CCP for the first time before completing the survey (n=4) and those reporting they attended weekly (n=23). Three-fourths of those students visiting the CCP for the first time found it easier to communicate in the presence of a dog while all indicated that they sometimes or never talk to their friends or family about the CCP. Over half of the students coming to the CCP every week found it easier to communicate in the presence of a dog while over three-fourths of these students indicated that they always or often talk to their friends and family about the CCP. Although both groups appear to find it easier to communicate in the presence of a dog, there is a sharp difference in the amount of communication between family and friends. One possible reason is that the students who attended only once may not have much to discuss on the subject since this was their first attendance. These differences may indicate that the more frequency of visits will enhance increased communication with friends and family. Therefore, social connections outside of the program with family & friends are substantially enhanced for those students who attend regularly.

Student and Volunteer Experiences

Also included in this chapter are the students' and volunteers' experience with dogs. Thirty-six students indicated that they grew up with a dog or have a dog at home. One example is where a female student noted, "I've had dogs as pets all my life" (S63-15). Also significant is that 13 students wrote that their experience with dogs is that they love them. One female student wrote, "I love dogs and love to spend time with them" (S02-15). Six students currently own a dog. Lastly, two students indicated that they volunteer at local animal shelters. For example, a female student noted, "[I] volunteered at a local animal shelter" (S46-15).

Nine of the volunteers mention that they currently own a dog. Additionally, 6 discuss owning dogs in the past. Interestingly, 3 indicate that they train abused and shelter dogs. One example is where a female volunteer indicated, "I've assisted with dog training for many years" (V08-14).

Lastly, students and volunteers were given the opportunity to provide any responses that were not covered in the survey in a free response option. The students who answered this question all provided their praise of the program. A female student noted, "I loved having the therapy dogs there and wish I would have taken advantage of it earlier in my college career. The program is highly organized and run very well, from what I could tell. Great job!" (S01-23). Another example is where a male student wrote, "I absolutely love love love LOVE this program! Definitely my most visited event at Pitt and I think that these feelings are shared amongst my peers. Keep up the good work, I appreciate what you guys do!!" (S08-23).

A few of the volunteer responses include their advice on starting an animal-assisted activity at another university. One example is where a female volunteer noted, "I would like this program to be copied at other universities throughout the country b/c I feel that this is a valuable

program for the students” (V06-22). Another female volunteer wrote, “Canine College is a valuable program. The students all give us positive feedback about the dogs and look forward to us coming. I wish other colleges would also have this program” (V11-22),

4.2 THEMES

The first theme is that the dogs may aid in communication with other participants. Seventy-one percent of the students noted that they agree or strongly agree that it is easier to communicate in the presence of a dog. This supports the literature that asserts animals provide a safe environment to promote communication between people (Mallon, 1994; Merriam-Arduini, 2000; Wood, 2007). These results also support Wood (2007), who suggests that these human-human interactions occur because dogs may act as a “social lubricant for social contact and interaction” (p. 47).

Additionally, dogs are the attraction to the program.. When asked why they come to the CCP, 38 (55%) students wrote that they come to interact with the dogs. Throughout the open-ended questions, some students suggested that these interactions included petting the dogs (30 students), loving the dogs (19 students), and playing with the dogs (8 students). Three examples of these interactions are from two female students and one male student, respectively. They noted, “I just really like watching them, their reactions to things, and of course petting them” (S25-15); “I love dogs” (S43-19); and “Everyone goes and plays with the dogs and talks to the owners and other students about them...very relaxing” (S05-14). Although this attraction to the CCP may be explained by the biophilia hypothesis, it is most likely due to previous experience with dogs. There were 36 students who said they have a dog at home or grew up with dogs. This

means about half of the students were predisposed to dogs. Out of those 36 students, half of them noted that they love dogs. An example of this is where one female student wrote, “I have a dog at home and I love dogs!” (S38-15).

The second theme is that the CCP specifically supports established relationships between friends and family. An example of this is where one female student noted, “My mother loves dogs much more than I do and the program allows me to talk to her about them when I usually can’t relate” (S34-16). Overall, there were 54 different responses that mentioned family (e.g., parents, mom, mother, dad, father, sister, siblings) in the open-ended responses. For example, a female student wrote, “I think that the dogs bring everyone in the cathedral together, and also it is a nice thing to be able to share with my family that they like about [P]itt” (S38-16). Additionally, there were 62 different responses that mentioned friends and the CCP. An example of this is where one male student mentioned, “I have seen friends that happened to come to the same puppy event as me, it was nice to talk to them in such a comfortable atmosphere” (S09-20).

Social capital theory states that participation in networks of social relations (relationships) creates returns such as increased emotional well-being (Bourdieu, 1993; Putnam, 2000; Stone, 2001). Using this assessment, the family and friends connections fostered by the CCP does create social capital. Although new social interactions at the CCP do not seem to turn into established relationships (over 67% of the students stating that they do not have any continued communication with anyone they met), the new social interactions may still be a model for a social network. It is unclear the depth of the relationship needed to increase social capital. Therefore, it may be that the student’s involvement during the time period of the CCP is enough to gain the needed social stimulation for increased well-being.

These results also support the literature which indicates that the human-animal relationship may aid in the development of social networks (Wells, 2004; Wood, 2007). These social interactions may also support identity development (Chickering, 1969). Chickering suggests that joining a group and forming relationships may aid in identity development. Additionally, these social interactions and involvement in the CCP may aid in student retention in the same higher education institution and persistence in completing their higher education degrees (Astin, 1993, 1999; Tinto, 1975). For example, Astin (1993) states that interpersonal relationships are a major variable for student persistence in completing their degrees.

The last theme that emerged from the data was that the CCP may provide stress relief and relaxation to student participants. Stress relief and relaxation are often used interchangeably and for the purpose of this dissertation I group the two terms under the term *physiological benefits*. Fifty-eight students (84%) mentioned when they responded to the open-ended questions in the survey that the CCP provided physiological benefits. Twenty-three students (40%)—out of the 58 that mentioned they gained physiological benefits from the CCP—wrote that the dogs were the source of the physiological benefits. An example of this is where one female student noted, “I feel relaxed and calm when I get to interact with the dogs. It decreases my anxiety” (S66-18). Another example of this is where one female student wrote, “The dogs are a wonderful stress release! They are cute and huggable and make all the stresses of the day fade away” (S47-18).

This supports the literature that states interaction with animals produces physiological benefits (Coakley & Mahoney, 2009; Stadi et al., 2004). Although it appears that the dogs are the catalyst for these physiological benefits, is unclear what the factor is in these benefits. For example, is it the biological/chemical reaction of petting a dog that may provide these benefits, the social act of being around people who enjoy the same interest (i.e., dogs), or is it the

psychological act of removing oneself from a stressful environment/action (i.e., homework)?
Future research on this program may want to uncover the source of these physiological benefits.

4.3 SUMMARY

This chapter identified the results of the three research questions and also offered a discussion on those findings. The findings include that the dogs are the attraction to the program and they may act as a stimulant for communication. Also, human interactions are happening during the CCP. It appears this program has the greatest effect on established relationships. It does not appear that this program promotes new relationships. Lastly, the CCP provides emotional benefits such as stress relief.

In the next chapter, I provide sections on the limitations of this study, recommendations for the CCP and for those interested in establishing animal-assisted programs at another higher education institution, and future areas of research on animal assisted activities in higher education.

5.0 CONCLUSIONS

This chapter discusses the limitations of my dissertation, recommendations for the CCP and other college-level animal-assisted activity programs, and future areas of research on animal-assisted activities in higher education.

5.1 LIMITATIONS

The first limitation may be the time frame of the data collection. Obtaining data only over a single term limited the number of students who may have joined the program at another time of the year. Data was collected during the spring term. It is possible that students may have a greater need to help fostering social connections at the start of the school year during the fall term. Additionally, sending the survey at the end of the spring term may account for the low response rate. Perceptions of those responding may not reflect the views of the entire population. In the future, a year-long population census with surveys sent at the end of each term may provide a wider range of participant views. The surveys may also be sent out several times during the year to capture the changes or non-changes to the participants of the CCP.

Another limitation is the reliability of the participants and volunteers to sign in each week. Although all participants and volunteers were encouraged by me to sign in each week, there were some who opted not to sign in for various reasons. There was not a way to control this

factor because the CCP is a volunteer program and the design of this research was sensitive to participants' needs to minimize intrusion that might discourage student participation. Participants did not have to sign in each time they joined the CCP. Additionally, the CCP environment may have permitted participants to walk through the Cathedral of Learning, interact with a dog, and leave unnoticed. In an attempt to limit this data collection obstacle, a sign was constructed promoting participants to sign in sheet and to promote awareness of the research study.

A final limitation was the initial lack of enthusiasm concerning research conducted on the CCP by Warthen, advisor to the Resident Student Association. As mentioned in chapter 1, her main concern about this research was that it would be disruptive to the students involved in the CCP. I overcame this hesitation by meeting with her face to face and by being transparent about all research methods and findings. This transparency empowered Warthen to guide me in ways that were suitable to the CCP and the University of Pittsburgh. I also included Warthen in the design process to ensure the Student Association would be comfortable with allowing students to participate in this study. This was especially important because ultimately, the study is to provide support for the CCP at the University of Pittsburgh.

5.1.1 Impact of the Bomb Threats

As noted in chapter 3, the University of Pittsburgh suffered through a series of bomb threats that ultimately limited access to university buildings for all non-university people. This impacted the CCP because the volunteers could not enter the Cathedral of Learning for the last three weeks of the program (i.e., April 10, 2012, April 17, 2012, and April 24, 2012). Instead, the sessions were held outside on the Cathedral of Learning lawn. The sessions scheduled for April 10, 2012 and April 24, 2012 were cancelled due to inclement weather.

Figure 5.1 The CCP on the Cathedral of Learning Lawn



Source: Courtesy of Larissa Gula, April 17, 2012.

Although the CCP was cancelled for two weeks towards the end of the term, the bomb threats did not appear to have a significant impact on the amount of students participating in the CCP. There were 27 students who participated in the CCP during the week of April 17, 2012. These numbers are in alignment with the same amount of students coming in earlier weeks (please see Table 3.2). There were seven dates, including April 17, 2012, that recorded a student population between 23 and 31. Additionally, the bomb threats did not bring a significant amount of new students to the program. There were 15 first time students on April 17, 2012 (please see Table 3.2). These amounts are also in alignment with the first time students from previous weeks. Other than requiring a change of venue, the bomb threats appeared to have an unexpectedly limited impact on this program.

5.2 RECOMMENDATIONS

5.2.1 Recommendations for the CCP

My first recommendation for the CCP is to foster the partnership between the Resident Student Association and the Western Pennsylvania Humane Society. This may be done by allowing a student representative from the Resident Student Association to coordinate communication between both organizations. This cooperation will allow for increased knowledge concerning the CCP. Additionally, there are certain items that should be developed jointly, such as the name of the program and advertisement of the program. For example, currently, both organizations label the CCP by different names. The Western Pennsylvania Humane Society labels it College Canines whereas the Resident Student Association labels it Campus Canines. To decide on a common name, they may want to heighten student interest by having a student contest to select the name of the program. This will serve both as an advertisement of the program and give student participants empowerment that will lead toward greater ownership in the CCP.

Although a University of Pittsburgh student does administer an unofficial Facebook page on the CCP, it may be best if this was officially administered by a representative from the Resident Student Association or the Western Pennsylvania Humane Society. This will allow for formal data collection or official announcements concerning the program. The Facebook page may also be expanded to include photos and biographies of the dogs. This list could be supplied by the Western Pennsylvania Humane Society. The Facebook page is important because allows students to “continue the conversation” about the CCP with friends and family members.

Facebook, and other social media, may also be a vehicle to entice the students to return to the program on a consistent basis. The results indicate that communication with family and

friends is substantially enhanced for those students who attend the CCP regularly. This study attempted to publicize the Facebook page when students were provided a postcard explaining the study and requesting their participation on the CCP's Facebook page. In further studies, it may be useful to obtain the number of students who joined the Facebook page due to an advertisement.

Finally, the Facebook page may be used to promote other programs that may interest students who are attracted to dogs or other animals. For example, the Western Pennsylvania Humane Society may promote new volunteer and job opportunities at their animal shelter. Additionally, Duquesne University, a nearby university that offers a post-baccalaureate certificate in Humane Leadership, may also want to promote their program on this page. It can serve as a resource for students who may be interested in the human-animal bond beyond Tuesday nights.

Having a representative from the Resident Student Association take part in the program is another recommendation. This will allow for an emic view of the program. This view may be important for decision-making and student representation purposes. Additionally, this is another way to create a partnership with the Western Pennsylvania Humane Society. The representative may make themselves known and may become a resource to the students by encouraging their return in the future.

A final recommendation for the Resident Student Association and the Western Pennsylvania Humane Society is to gather and keep demographic information on the participants. Although this may seem like an intrusion into a stress-free evening, knowing how many students are coming to the program over the course of a term or year may be needed if the program expands or if the program's usefulness comes into question. Since the layout of the

Commons Room at the Cathedral of Learning is not the most conducive location for collecting student information, students may be asked to sign an online sign-in sheet. This method may not include every participant but it may provide a representative sample of the population.

5.2.2 Recommendations for New Animal-Assisted Activity Programs at Higher Education Institutions

Table 5.1 Recommendation Checklist for New Animal-Assisted Activity Programs

Organizer	Responsibilities
Higher Education Institution	<p>Environment</p> <ul style="list-style-type: none"> Provide an area where the dogs can relieve themselves before and after the program Provide a source of water for the dogs (e.g., water dish) Provide an open and safe area for students and volunteers to sit <p>Provide all TDI® certifications to the university legal department</p> <p>Communicate with the animal-assisted activity organizations concerning procedures and goals of the program (e.g., stress relief, social interaction, increased campus involvement)</p> <ul style="list-style-type: none"> Conduct bi-annual meetings with the animal-assisted activity organization <p>Provide promotion of the program (e.g., social media, posters)</p> <p>Monitor the attendance of the program</p> <p>Provide encouragement for the participants to return each session (e.g., Facebook announcements, email reminders)</p>
Animal-Assisted Activity Organization	<p>Supervision of the dog certification</p> <ul style="list-style-type: none"> Record the yearly renewal of all TDI® certificates Record the TDI® certificate insurance Record the TDI® certificate veterinarian and vaccination records <p>Communicate with the higher education institution concerning procedures and goals of the program (e.g., stress relief, social interaction, increased campus involvement)</p> <ul style="list-style-type: none"> Conduct bi-annual meetings with the higher education institution <p>Provide promotion of the program (e.g., social media, posters)</p> <p>Provide encouragement for the participants to return each session (e.g., volunteer encouragement, WPHS Facebook announcement)</p>

Organizer	Responsibilities
Dog Handlers	Train the dog for TDI® certification Train the dog for the yearly renewal of the TDI® certification Record the TDI® certificate insurance Provide veterinarian and vaccination services for the dog Provide grooming for the dog before each therapy visit Cancel the therapy dog visit if the dog or handler is ill

5.2.2.1 First Step – Contacting Organizations

Table 5.1 outlines the responsibilities of each party in an animal-assisted activity program. To begin a new animal-assisted activity program at a university, two groups must be coordinated. First, an organization that supervises therapy dogs and their handlers is needed. This organization should be accredited by TDI® or a similar, nationally-recognized therapy dog certification organization (e.g., Pet Partner/Delta Society, Therapy Dogs, Inc., etc.) and have legal paperwork that indicates the dog’s TDI® certificate, insurance, and canine vaccines are valid and up to date. The university will need this paperwork in case of incident reports for those participating in the program. This organization must also be willing and able to add another volunteer location to their schedule. Therefore, a large animal rescue organization may be the best option because they may have the resources to add another location.

Next, the university community should be contacted and interest surveyed concerning an animal-assisted activity program. It may be best to approach student organizations that may support animals in their philanthropic mission. A contact person should be acquired from both organizations.

5.2.2.2 Second Step – Communication and Goal Setting

The humane and university organizations should set scheduled meetings to plan and discuss the program. Some preliminary decisions may be location of the program, time of the program, and name of the program. I recommended the location to be in a central location, such as the university's student union or equivalent building. Adequate space should be available to accommodate the number of dogs anticipated for participation. Additionally, if the program is held at night, the location should be safe for students to walk to and from their residences or cars. Due to some food and health code laws, it would be best if the program was not held in or near a dining area.

After the preliminary details are decided, establishing specific goals for the program is essential. It may just be one goal or several goals. These goals will be based on the needs of the university and the supply of therapy dogs and handlers. These goals can include stress relief, humane education, and student inclusion programs. Additionally, strategies for achieving these goals should also be established. For example, if the goal is humane education, the humane and university organization will conduct the program with handlers that are educated in humane education and provide specific programs that teach and support the value of all living creatures.

5.2.2.3 Third Step – Promotion and Reevaluation

I recommended the main vehicle for promotion of the program to be social media sources such as Facebook. It is a low-cost way to promote and it also allows for continued communication with participants. The Facebook page should be administered by either organization and have official university affiliation. Posters, advertising the program and Facebook page, displayed in public places such as dining halls or dormitories may also be favorable.

Once the program is promoted properly, the organizations may want to review their goals and see if they were achieved. The reevaluation of the goals and struggles to achieve those goals may occur.

5.3 FUTURE RESEARCH

The results of this study indicate that this program provides physiological benefits (i.e., stress relief and relaxation). It is unknown if the source of these benefits is biological, psychological, or social. One interesting avenue for future research could be the biological approach. The explanation for the physiological benefits could be that the participant's oxytocin levels increase when interacting with the dogs. Oxytocin is a hormone found in mammals that has been linked to pair bonding, mother-child bonding, social trust, reducing anxiety, and stress relief (Uvnas-Moberg, 2003). A simple action, such as a dog's gaze, can increase oxytocin levels in its owner (Nagasawa, Kikusui, Onaka, & Ohta, 2009). Miller and her colleagues (2010) studied oxytocin levels of men and women during their interactions with their personal pet. This study recorded oxytocin levels of the men and women after work, a common form of stress, and then after their interaction with their personal pet. Although there were not significant oxytocin level increases in the men, the women did show significant increases in their oxytocin levels. For future research, oxytocin levels of select participants may be measured before the CCP and after the CCP. Because of the desire not to disrupt the participants during the CCP, a select group of students (or a stratified control group) may want to participant in the study. These students should be pre-selected, based on their indication that they are stressed, before the study begins. Another area for future research is to focus on the social aspects of the program, namely, through

social capital theory. This study attempted to address this and other theoretical perspectives but future studies may want to focus only on this theory. As indicated in chapter 2, Dudwick, Kuehnast, Jones, and Woolcock (2006) suggest that there are six dimensions to social capital which are “groups and networks, trust and solidarity, collective action and cooperation, information and communication, social cohesion and inclusion, and empowerment and political action” (p. 11). Future studies may want to focus on all or a few of these dimensions. For example, future research may focus on social cohesion and inclusion. To measure this, a standard measurement that has been used in other studies to measure social capital (such as the Buckner Neighborhood Cohesion Index [NCI]) may be used (Buckner, 1988). This qualitative index includes questions based on a Likert-response scale, such as overall I am attracted to living in this neighborhood and I visit my friends in their homes (Fone, Farewall, & Dunstan, 2006). These questions would need to be adapted to each CCP environment.

5.4 SUMMARY

Dogs have partnered with humans from prehistoric time to the present. They have been a source of support from guarding our airports from bomb attacks to licking our face on stressful days. The field of anthrozoology focuses on this bond between humans and dogs. This is a new field that draws from the established fields of biology, psychology, and sociology.

This study focused on a specific human-dog partnership, the University of Pittsburgh CCP. This program allows university students the opportunity to interact with registered therapy dogs once a week during the Fall and Spring Terms. This dissertation attempted to capture the relationships made during this program. Capturing these relationships was important because

they may be a factor in student persistence, retention, and engagement in higher education. These ideas were anchored with a set of theories that may help explain the benefits of the CCP. They are attachment theory, social capital theory, identity development theory, and student involvement theory. These theories are used to help explain human-animal connections and the university-student connection that exists within the CCP.

This study used a case study approach that included two mixed-method online instruments. There were 270 students who participated in the CCP during the 2012 Spring Academic Term. An additional 20 volunteers also participated in the CCP during this time frame. All student and volunteer participants were asked to complete the survey. In all, 69 students (25.5% response rate) and 11 volunteers (55% response rate) responded to the survey.

Overall, the results suggest that the CCP does create a program for student involvement and may support established relationships. The key findings include (1) the CCP dogs are the primary attraction for students to the program, (2) human interactions (vis-à-vis with friends and family members) are strengthened through participation in the CCP, and (3) the CCP may provide stress relief to participants.

In this final chapter, I provide the limitations of the study, recommendations, and give suggestions for future areas of research. Although there were a series of bomb threats that hindered the program, that limitation was not as severe as first anticipated. It did cause the CCP to be relocated during the final three meetings of the Term. Two of these dates had to be cancelled but the number of participants who attended the final CCP meeting was consistent with previous weeks. The recommendations for both the CCP and for any person interested in establish a new animal-assisted program were to communicate with all parties involved in the

program, advertise the program through multiple mediums to ensure greater participation, and collect demographic information from all participants.

APPENDIX A

PARTICIPANT SURVEY

1. Date: ____/____/____ (month/date/year) 2. Age: ____

Directions: Please circle to indicate your response

3. Gender: female or male

4. Do you live within 60 miles of Pittsburgh? yes or no

5. Are you a student, faculty member, or staff member?

b. If you are a student, do you consider yourself an undergraduate student? yes or no

c. If yes, do you consider yourself a freshman, sophomore, junior, or senior?

6. I find it easier to communicate with others in the presence of a dog

strongly disagree disagree neither disagree not agree agree strongly agree

7. How often do you participate in the Campus Canines Program?

1st time here once a term once a month every week

8. How many extra-curricular activities are you involved in? 1-2 3-4 4-5 6 or more

Directions: Please place an X in box the to indicate your response

	Always	Often	Sometimes	Never
9. Do you come alone to Campus Canines?				
10. Have you photographed the therapy dogs?				
11. Do you talk to friends about the Campus Canines program?				
12. Do you talk to family about the Campus Canines program?				

13. How often have the following bothered you over the last 2 weeks:	Not at all	Several days	More than half the days	Nearly every day
a. Feeling nervous, anxious, or on edge				
b. Not being able to stop or control worrying				
c. Feeling down, depressed, or hopeless				
d. Having little interest or pleasure in doing things				

14. Could you please describe a typical evening at the Campus Canines Program?
15. Could you please describe your current or previous experiences with dogs?
16. Could you please describe how this program allows you to remain connected to your family?
17. Could you please describe any increased involvement at the University of Pittsburgh due to the Campus Canine Program?
18. How has this experience made you feel different?
19. Why do you come to the Campus Canines Program?
20. Could you please describe any continued communication with the people you have met in this program?
21. If you regularly attended with another friend, could you please describe how this program has affected your relationship?
22. If have you photographed the therapy dogs, did you share these photos with friends or family? Why did you share them?
23. What other comments not already covered in this interview would you like to share?

APPENDIX B

VOLUNTEER SURVEY

1. Date: ____/____/____ (month/date/year) 2. Age: ____

Directions: Please circle to indicate your response

3. Gender: female or male

4. Do you live within 60 miles of Pittsburgh? yes or no

5. I find it easier to communicate with others in the presence of a dog

strongly disagree disagree neither disagree not agree agree strongly agree

6. How often do you participate in the Campus Canines Program?

1st time here once a term once a month every week

7. How many extra-curricular activities are you involved in? 1-2 3-4 4-5 6 or more

Directions: Please place an X in box the to indicate your response

	Always	Often	Sometimes	Never
8. Do you come alone to Campus Canines?				
9. Have you photographed the therapy dogs?				
10. Do you talk to friends about the Campus Canines program?				
11. Do you talk to family about the Campus Canines program?				

12. How often have the following bothered you over the last 2 weeks:	Not at all	Several days	More than half the days	Nearly every day
a. Feeling nervous, anxious, or on edge				
b. Not being able to stop or control worrying				
c. Feeling down, depressed, or hopeless				
d. Having little interest or pleasure in doing things				

13. Could you please describe a typical evening at the Campus Canines Program?
14. Could you please describe your current or previous experiences with therapy dogs?
15. Could you please describe any increased involvement at the University of Pittsburgh due to the Campus Canine Program?
16. How has this experience made you feel different?
17. Why do you come to the Campus Canines Program?
18. Could you please describe any continued communication with the people you have met in this program?
19. If you regularly attended with another friend, could you please describe how this program has affected your relationship?
20. If have you photographed the therapy dogs, did you share these photos with friends or family? Why did you share them?
21. Could you please describe your participation in other volunteer dog therapy programs?
22. What other comments not already covered in this interview would you like to share?

APPENDIX C

RECRUITMENT SCRIPT

The purpose of this research is to obtain participants' and dog handler volunteers' motives for participating in the Campus Canines program at the University of Pittsburgh. For that reason, I will be interviewing the participants and volunteers of the Campus Canines program. The interviews will last between 10-15 minutes and consist of demographic questions and open-ended questions. The interviews will be conducted on Tuesdays from 7:00pm-8:00pm to coincide with the Campus Canines program. Another interview time and date may also be arranged between the researcher and the participant/volunteer to coincide with their schedule.

There are no foreseeable risks associated with this project, nor are there any direct benefits to you, however the findings will help further research in the fields of human-animal interactions and higher education. All participants must be 18 years of age or older. Three randomly selected participants will receive a \$10 Panera gift card as a token of my appreciation. These participants will be selected at the end of the interview phase of the research study.

This is an entirely anonymous interview and responses will not be identifiable in any way. All responses are confidential, and results will be kept under lock and key. Your participation is voluntary and you may withdraw from this project at any time. Upon request, I will provide a copy of the final analysis paper of this research project to you.

I would be happy to answer any questions you might have. I can be reached the following ways: telephone (412-276-2726) and email (nic10@pitt.edu).

Nicole Camaioni
514 Gormley Ave
Carnegie, PA 15106

APPENDIX D

POSTCARD/POSTING SCRIPT

Hello -my name is Nicole and I am a graduate student here at the University of Pittsburgh. I am recruiting interested subjects to be interviewed on their motives for participating in the Campus Canines program. The interviews will last between 10-15 minutes and may be conducted during the Campus Canines program on Tuesdays between 7:00pm-8:00pm or another time/date may also be arranged.

Three randomly selected participants will receive a \$10 Panera gift card as a token of my appreciation. These participants will be selected at the end of the interview phase of the research study.

If you are interested, I can be reached the following ways: telephone (412-276-2726) and email (nic10@pitt.edu). Thank you! All participants must be 18 years of age or older.



Become a fan on Facebook – “Therapy Dog Tuesdays at Pitt” -
<http://www.facebook.com/tdt.pittb>

APPENDIX E

WESTERN PENNSYLVANIA SOCIETY LETTER OF CONSENT



1101 Western Avenue • Pittsburgh, PA 15233 • 412 321-4625 • fax 412 321-4664
www.wpahumane.org

Nicole Camaioni
514 Gormley Ave
Carnegie, PA 15106

Dear Ms. Camaioni,

You have my permission to conduct the research study entitled "Creating social connections in higher education: Insights from the Campus Canines program at the University of Pittsburgh" during the Campus Canines program at the University of Pittsburgh. I understand that you will be conducting interviews with the Western Pennsylvania Humane Society's volunteers.

If you have any additional requests, please don't hesitate to let me know.

Sincerely,



Marsha Robbins
Director of Humane Education

APPENDIX F

UNIVERSITY OF PITTSBURGH'S RESIDENT STUDENT ASSOCIATION LETTER OF CONSENT



University of Pittsburgh

*Residence Life
Division of Student Affairs*

935 William Pitt Union
3959 Fifth Avenue
Pittsburgh, PA 15260
412-648-1200
Fax: 412-648-2627

August 16, 2011

Nicole Camaioni
514 Gormley Ave
Carnegie, PA 15106

Dear Ms. Camaioni,

You have my permission to conduct the research study entitled "Creating social connections in higher education: Insights from the Campus Canines program at the University of Pittsburgh" during the Campus Canines program at the University of Pittsburgh. I understand that you will be conducting interviews with the participants of the Campus Canines program.

If you have any additional requests, please don't hesitate to let me know.

Sincerely,

A handwritten signature in black ink, appearing to read "Melissa Warthen", written over a horizontal line.

Melissa Warthen
Assistant Director of Residence Life, Programming
Advisor, Resident Student Association

APPENDIX G

THERAPY DOG INTERNATIONAL (TDI®) TESTING REQUIREMENT

ADDITIONAL RULES FOR TDI TESTING

1. Dogs must be tested on a plain buckle collar or harness. Training collars, training harnesses, halties, or any other corrective training devices are not permitted during testing or visiting as a TDI-registered Therapy Dog.
2. Dogs must be a minimum of one year old to be tested.
3. Handlers under 18 years of age must have a parent/legal guardian present.
4. Greyhounds are not required to sit for TDI Testing.

Note: Potential applicants are not required to take any Therapy Dog classes which are not sanctioned by TDI.

TDI ADDITIONS TO THE AKC'S CGC TEST

TDI registration is a natural extension of the AKC-CGC for dogs who are particularly sensitive and attentive to people. Canine membership includes all breed and mixed-breed dogs. All dogs are tested and evaluated for Therapy Dog work by Certified TDI Evaluators. While many dogs provide love and companionship in the home, not all dogs are qualified or have the temperament suited to be a Therapy Dog.

For more information on the
AKC Canine Good Citizen Test, contact:

The AKC's Canine Good
Citizen Department
(919) 816-3637
e-mail: cgc@akc.org

FOR MORE INFORMATION CONTACT:

Therapy Dogs International (TDI®)

88 Bartley Road
Flanders, NJ 07836
Tel: (973) 252-9800
Fax: (973) 252-7171
e-mail: tdi@gti.net
www.tdi-dog.org



THERAPY DOGS INTERNATIONAL (TDI®) TESTING REQUIREMENTS

WHICH INCLUDES SOME STEPS OF THE
AMERICAN KENNEL CLUB'S
CANINE GOOD CITIZEN
TEST®



Therapy Dogs International (TDI®) is an organization dedicated to the regulation, testing, selection, and registration of qualified dogs and handlers for the purpose of visitations to hospitals, nursing homes, and facilities or any place where Therapy Dogs are needed.

APPENDIX H

IRB APPROVAL LETTER



University of Pittsburgh
Institutional Review Board

3500 Fifth Avenue
Pittsburgh, PA 15213
(412) 383-1490
(412) 383-1508 (fax)
<http://www.irs.pitt.edu>

Memorandum

To: Nicole Camaioni, BA
From: Sue Beers, Ph.D., Vice Chair
Date: 8/23/2011
IRB#: [PRO11070271](#)
Subject: Creating social connections in higher education: Insights from the Campus Canines program at the University of Pittsburgh

The above-referenced project has been reviewed by the Institutional Review Board. Based on the information provided, this project meets all the necessary criteria for an exemption, and is hereby designated as "exempt" under section 45 CFR 46.101(b)(2) Tests, surveys, interviews, observations of public behavior

Please note the following information:

- If any modifications are made to this project, use the " Send Comments to IRB Staff" process from the project workspace to request a review to ensure it continues to meet the exempt category.
- Upon completion of your project, be sure to finalize the project by submitting a "Study Completed" report from the project workspace.

Please be advised that your research study may be audited periodically by the University of Pittsburgh Research Conduct and Compliance Office.

APPENDIX I

DEFINITION OF TERMS

1. **Anthrozoology** – Anthrozoology is the study of the relationship between humans and animals. The field of Anthrozoology contributes to this study because it lays a foundation for human-animal interactions.

2. **Animal-Assisted Activity** – According to the Delta Society (2009), Animal-Assisted Activities “provide opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance quality of life. AAA are delivered in a variety of environments by specially trained professionals, paraprofessionals, and/or volunteers, in association with animals that meet specific criteria.” Unlike Animal-Assisted Therapy (described below), AAA involves casual encounters between trained animals and a variety and often mixed group of humans, without establishing a specific, intended therapeutic outcome.

3. **Animal-Assisted Therapy** – According to the Delta Society (2009), Animal Assisted Therapy “is a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process. AAT is designed to promote improvement in human physical, social, emotional, and/or cognitive functioning [cognitive functioning refers to thinking and intellectual skills]. AAT is provided in a variety of settings and may be group or individual in nature. This process is documented and evaluated.”

4. Persistence in Higher Education – Persistence is the desire of the student to stay within an institution from admission to graduation.

5. Retention in Higher Education – Retention is measured by the rate at which students stay with a particular institution from admission to graduation.

6. Engagement in Higher Education – Engagement is the desire of the student to actively participant in the academic and social areas of the institution.

APPENDIX J

Table A.1 Response Rates for Questions Asked to Participants

Question	Student Responses	Student Response Rate (%)	Volunteer Responses	Volunteer Response Rate (%)
Age	69	100.0	20	100.0
Gender	69	100.0	20	100.0
Do you live within 60 miles of Pittsburgh?	69	100.0	20	100.0
Are you a student, faculty member, or staff member?	69	100.0		NA
I find it easier to communicate with others in the presence of a dog	69	100.0	20	100.0
How often do you participate in the Campus Canines Program?	69	100.0	20	100.0
How many extra-curricular activities are you involved in?	69	100.0	20	100.0
Do you come alone to Campus Canines?	69	100.0	20	100.0
Have you photographed the therapy dogs?	69	100.0	20	100.0
Do you talk to friends about the Campus Canines program?	69	100.0	20	100.0
Do you talk to family about the Campus Canines program?	69	100.0	20	100.0
How often have the following bothered you over the last 2 weeks:	69	100.0	20	100.0
Could you please describe a typical evening at the Campus Canines program?	57	83.0	10	91.0
Could you please describe your current or previous experiences with dogs?	57	83.0	10	91.0
Could you please describe how this program allows you to remain connected to your family?	57	83.0		NA
Could you please describe any increased involvement at the University of Pittsburgh due to the Campus Canine program?	57	83.0	8	73.0
How has this experience made you feel different?	57	83.0	10	91.0
Why do you come to the Campus Canines program?	57	83.0	10	91.0
Could you please describe any continued communication with the people you have met in this program?	57	83.0	10	91.0
If you regularly attended with another friend, could you please describe how this program has affected your relationship?	40	58.0	2	18.0

Question	Student Responses	Student Response Rate (%)	Volunteer Responses	Volunteer Response Rate (%)
If have you photographed the therapy dogs, did you share these photos with friends or family? Why did you share them?	43	62.0	2	18.0
What other comments not already covered in this interview would you like to share?	35	51.0	6	55.0

APPENDIX K

PHOTOGRAPH CONSENT EMAIL

From: "Larissa Gula" <LAG56@pitt.edu>
To: NIC10@pitt.edu
Sent: Wednesday, April 25, 2012 12:11:53 AM
Subject: Re: Therapy Dog Pictures

Hi, Nicole - as long as credit is given, then of course. Best of luck!
Larissa

> Dear Larissa and Marsha,
>
> I am requesting the use of your therapy dog Facebook photos. I will be using them for my poster for the conference in London
> and for my dissertation. Your organization will be credited as the creator of the photos. Please let me
> know if this is ok if I use them.
>
> Best,
> Nicole
>

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