

# March, 2016 PILOT STUDY



AAI & Wellness Project

University of Ottawa

Student Academic Success Services & Health Promotion  
Therapy Dog Program

## Background & Purpose

**Animal Assisted Activities** (AAA) “provide opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance the quality of life [of humans]. AAAs are delivered in a variety of environments by specially-trained professionals, paraprofessionals, and/or volunteers in association with animals that meet specific criteria. Key features include absence of specific treatment goals; volunteers and treatment providers are not required to take detailed notes; visit content is spontaneous” (Delta Society, n.d., as cited in Kruger & Serpell, 2006, p. 23)

A 2014 review of studies identi-

fied an increasing empirical base for AAAs, and the need for further research (Borrego et al, 2014).

*This fact sheet shares the history and findings of a pilot study of the University of Ottawa (uOttawa) Student Academic Success Service (SASS) and Health Promotion (UOHS) Therapy Dog program on the University of Ottawa campus for students.*

According to Murray Sang, director of Student Academic Success Service, “[t]he goal of this program is to help many students who are feeling stressed or anxious. It will also

help comfort those who have not been able to spend time with their family pets since they left home for university” (University of Ottawa, 2012).

As part of a multi-site project, the aim of this pilot study is to identify the outcomes/effects of the AAA Program during the Therapy Dog team visits.

The concepts of love and support are prominent in the literature as well as practice and so are examined here for if and how students experience them, and key outcomes from past studies are measured (e.g., stress, anxiety, happiness, participation). Feedback is collected from students and the Therapy Dog handlers.

## Canine Assisted Activity Program

In 2012, the University of Ottawa Counselling and Coaching Service and Health Promotion offices began to offer an animal therapy pilot program for students. The initiative intended to offer students who may be experiencing stress and anxiety an opportunity to spend time with a therapy dog.

Audrey Giles, an associate professor at the School of Human Kinetics in the Faculty of

Health Sciences, was the primary person behind the idea, starting the program on campus with her Therapy Dog Tundra.

Today, the SASS and UOHS offices continue to offer the program. The Pet Therapy program is delivered every Friday from 11am –12pm during the regular academic year (Sept-April).

Since the program’s incep-

tion, it has grown in popularity among the student population with minimal advertisement. In fact, this academic year two new Therapy Dogs have been added to the visiting team roster. It is expected that the number of visits will continue

to grow in the years ahead.



Volunteer Handler	Dog Name	Dog Breed	Dog Age	Dog Years Worked	Therapy Dog Organization
Audrey Giles	Tundra	Border Collie	11	8 (semi-retired; special events only)	Therapeutic Paws of Canada
Eric Crighton	Miso	Labradoodle	4	1.5 years	Ottawa Therapy Dogs
Jacques Marinier	Maze	Retriever/collie/shepherd/ greyhound or saluki mix	9	3.5 years	Therapeutic Paws of Canada
Ashley Scott	Sassy	Redbone Coonhound	10	3 years	Therapeutic Paws of Canada
Ashley Scott	Coco	Boxer mix	4	1 year	Therapeutic Paws of Canada
Sylvie Lambert	Rustybear	Golden Retriever	12	7 years	Ottawa Therapy Dogs

## Research Methods

This pilot study was designed on a limited scale to gain preliminary insight into the outcomes of the uOttawa Therapy Dog program and develop a future robust study.

The data collection was two-fold via a questionnaire. Qualitative, open-ended inquiry documented participants' and handlers' subjective experiences, meanings and processes (Denzin & Lincoln, 2008). This approach recognizes that others' perspectives lend to the co-creation of individuals' stories such that they can collaboratively unfold (i.e., students and handlers) (Creswell, 2013). Quantitative, Likert scales documented outcomes in literature identified areas.

The data was collected from October to November 2014. A total of 124 student (99 female, 23 male, 2 other) and 3 handler (representing 3 handlers and 3 of 6 dogs) questionnaires were completed. Six Therapy Dogs were involved in the data collection: Miso (4), Maze (9), Coco (4), Sassy (10), Rusty Bear (12) and Tundra (11). Group visits were 60 minutes in length, with students staying as little as a few minutes through to the full hour. On average, students visited for approximately 10 minutes.

The students were presented with a questionnaire (French or English) at the completion of each visit, and filled it in on-site and out of the presence of the Therapy Dog teams. Handlers completed questionnaires immediately after the session.

The student demographics are:

<b>Gender</b>	Male	23	18%
	Female	99	80%
	Other or Unknown	2	2%
<b>Have Pet</b>	Yes (for some > 1)	80	65%
	If yes* Dog	61	49%
	If yes*, Cat	27	22%
	If yes*, Other	5	4%

The handler demographics are:

<b>Gender</b>	Male	1	33%
	Female	2	67%
<b>Years Volunteering with a Therapy Dog organization</b>	Average 7 years		
	Audrey: since 2008		
	Ashley: since 2010		
	Sylvie: since 2003		

## Data Analysis

The data collected using the Likert scale were analyzed quantitatively for descriptive statistics (i.e., mean and frequency). Means and frequencies were compared to provide an indication of highest means and largest proportion of agreement on items. T-test on mean item ratings were examined to determine if there was statistical differences by gender at  $\alpha = .05$ . It is important to note that 19% (19% or 19 females and 17% or 4 males) of the students did not complete the second side of the evaluation form; thus, "after time with the therapy dog" items had slightly less in the sample for the analysis and slightly less power in determining significance.

The qualitative data was analyzed through an inductive thematic analysis. Such an analysis seeks to identify recurrent patterns, or themes, in textual data. These themes were compared with others and clustered based on similarity in meaning (Saldana, 2010). The frequencies presented here may not sum to the sample size because sentences can be thematically coded more than once. All data was reviewed and interpreted by our multi-disciplinary team.

## Partnership & Ethics

Health Promotion was the uOttawa campus organization responsible for scheduling the weekly Therapy Dog visits. Peer Health Educators from Student Academic Success Service volunteered weekly to ensure the visits ran smoothly. The group visits were held in the Residential Complex located at 90 University in room 152 with all Therapy Dog teams regularly attending.

Operational approval for the uOttawa Therapy Dog program was obtained from the Office of Risk Management. Ethics exemption was granted from the uOttawa Human Research Ethics Board given the project's evaluative focus, and an ethics certificate was secured. Exemption was also granted from the University of Saskatchewan Human Research Ethics Board given the project's evaluative focus.

The findings of this fact sheet *cannot* be directly compared to the findings of other AAI programs because each program has clients with different presenting needs, the therapeutic approach may be dissimilar, and, in some cases, the species varies (e.g., horses are prey animals and dogs are not).



## Becoming a Therapy Dog

Therapeutic Paws of Canada (TPOC) is a volunteer-based pet therapy dog and cat visitation program. The program involves volunteers and their pets visiting with members of their communities in schools, hospitals or senior's residences. All Therapy Dog teams will have passed the canine evaluation, have monitored visits, and completed the membership paperwork. The handler must be 18 years of age or older; physically and mentally

capable of performing the activities that are reasonable for the type of service they are providing; willing to complete an application process and criminal record check; able to successfully participate in a dog evaluation; and able to provide up-to-date veterinarian documents indicating that all vaccinations are current. The dogs must be at least one year old, well mannered, love people and be well socialized (Therapeutic Paws

of Canada, 2015). More information is available at: <http://www.ottawatherapydogs.ca/>

Ottawa Therapy Dogs (OTD) is another volunteer-based, not-for-profit organization that provides animal visitation that uOttawa partners with. This organization has similar requirements for their dogs and handlers as TPOC. More information can be found at: <http://www.ottawatherapydogs.ca/>

# Findings

## Student: Rated Items

The 124 uOttawa students were asked to rate nine items. Seven items used a 5-point Likert scale ('Strongly Disagree' to 'Strongly Agree'). The "Are you glad you came to visit" and "Would you recommend a visit with the therapy dog(s) to other students" items had three options ('Yes', 'No', 'Unsure').

In response to whether they were glad they came to visit with the Therapy Dogs, 98% responded "Yes" and 2% "Unsure", with an overall average of 4.95.

About time spent with the with Therapy Dogs, on average both the females and males gave a high rating to feeling comforted/loved by the dogs: 47% of females and 61% of males rated 'Strongly Agree' with an average of 4.44. On average, females were slightly stronger in agreement that they received support from the dog handlers, 4.42 versus 4.13 for males, and with 45% of the females and 30% of the males rating 'Strongly Agree'. The male and female students were very similar in their rating of feeling the time with the Therapy Dog helped them to de-stress, with 39% rating strong agreement and 53% agreement.

1='Strongly Disagree' 5='Strongly Agree'	Female Average	Male Average	All Average
	n=99	n=23	n=124
Glad came (1=No,5=Yes)	4.94	5.00	4.95
Helped de-stress	4.32	4.26	4.28
Felt comforted/loved by the dog(s)	4.44	4.39	4.40
Felt supported by the dog handlers	4.42*	4.13	4.36

\* significantly higher at alpha = 05

After spending time with the Therapy Dogs, on average females had stronger agreement about feeling calm (4.40) versus males (3.89) with 99% of the females compared to 69% of the males in agreement. Additionally, females had stronger agreement about feeling in control of their emotions (4.08) versus males (3.63) with 75% of the females compared to 64% of the males in agreement. While not significantly different, the females did tend towards rating stronger disagreement of feeling more anxious and more stressed/tense.

1='Strongly Disagree' 5='Strongly Agree'	Female Average	Male Average	All Average
	n=80	n=19	n=101
More anxious	1.60	1.68	1.64
More calm and relaxed	4.40*	3.89	4.29
More in control of my emotions	4.08*	3.63	3.98
More stressed out/tense	1.50	1.89	1.60

\* significantly higher at alpha = 05

Note: With only two students identifying other than male or female, separate analyses were not conducted.

A large majority (98%) of the 99 students who answered the question, indicated that they would recommend such an event to others, with an average rating of 4.96.

	Female Average	Male Average	All Average
	n=80	n=19	n=99
Recommend to others	4.98	5.00	4.96

## Student: Qualitative

**Question:** What was your reason for coming out to visit the Therapy Dogs today?

**Who responded:** 121 of 124 (98%); 98 Female, 21 Male, 2 Other

**Themed frequency:**

1. De-stress/relaxing/calming (31, 26%) [24%F, 29%M]
2. Love dogs/lovable (26, 22%) [22%F, 14%M]
3. Being with/cuddle dog/dogs are cute (24, 20%) [22%F, 10%M]
4. Miss my dog (22, 18%) [20%F, 10%M]
5. Enjoyment/fun/nice (13, 11%) [12%F, 5%M]
6. Like dogs (12, 10%) [8%F, 19%M]
7. Accompanying friend/by chance/encouraged to check it out (9, 7%) [6%F, 14%M]
8. Homesick (2, 2%) [2%F, 0%M]



**Question:** Are you glad that you met with the Therapy Dogs? Why? (See Table 1 for quantitative results.)

**Who responded:** 112 of 124 (90%); 89 Female, 21 Male, 2 Other

**Themed frequency:**

1. Being with/cuddle dog/dogs are cute (37, 33%) [33%F, 33%M]
2. Enjoyment/fun/nice (35, 31%) [33%F, 24%M]
3. De-stress/relaxing/calming (24, 21%) [22%F, 19%M]
4. Love dogs/lovable (14, 13%) [15%F, 5%M]
5. Miss my dog (7, 6%) [7%F, 5%M]
6. Like dogs (5, 4%) [3%F, 10%M]



**Question:** What words would you use to describe your experience with the Therapy Dogs today?

**Who responded:** 94 of 124 (76%); 78 Female, 15 Male, 1 Other

**Themed frequency:**

1. Happy/fun/pleasant/good/enjoyable (66, 70%) [71%F, 67%M]
2. De-stress/relaxing/calming (37, 40%) [41%F, 33%M]
3. Dogs/cuddly/cute/great/nice (15, 16%) [15%F, 20%M]
4. Support/comforting (12, 13%) [14%F, 0%M]
5. Love dogs/lovable/touching (8, 9%) [8%F, 13%M]



**Question:** Would you recommend a visit with Therapy Dogs to other students? Why? (See Table 3 for quantitative results.)

**Who responded?** 84 of 124 (68%); 66 Female, 16 Male, 2 Other

**Themed frequency:**

1. De-stress/relaxing/calming (35, 42%) [44%F, 38%M]
2. Yes/fun/comfortable/nice/positive experience (32, 38%) [44%F, 19%M]
3. Dogs are cute/amazing/friendly/nice (16, 19%) [21%F, 13%M]
4. Love dogs/love animals/puppy (3, 4%) [2%F, 6%M]

**Question:** Any additional comments?

**Who responded:** 35 of 124 (28%); 26 Female, 8 Male, and 1 Other

**Themed frequency:**

1. More dogs/more animals (7, 20%) [19%F, 13%M]
2. Enjoyment/great time (6, 17%) [15%F, 25%M]
3. Dogs should keep coming (6, 17%) [19%F, 13%M]
4. Good program (6, 17%) [19%F, 13%M]
5. Thank you (6, 17%) [19%F, 13%M]

## Findings continued

### Handler: Rated Items

Three of the 6 handlers rated their observations of the students at one point in time on three items using a 3-point Likert scale (Yes, Unsure, No). It is important to note that this low response rate (3 of 6 handlers and for only one session each).

On average, the handlers were positive that the students felt supported by the dog (average 5.00 and 100% responded 'Yes') as well as that the students felt support from the handler (5.00 and 100% responded 'Yes'). The handlers were more uncertain about the students feeling loved from the Therapy Dogs (average = 3.96 and 33% 'Yes').

5= 'Yes', 3='Unsure', 1= 'No'	Handler Average
Loved	3.67
Supported	5.00
Handler support	5.00

### Handler: Qualitative

**Question:** Why do you think the student came to spend time with the Therapy Dogs?

**Who responded?** Handler 3 of the 3 (100%)

**Themed frequency:**

Give/receive affection (3, 100%)

Miss pet/homesick (2, 66%)

Social with peers/lonely (2, 66%)

Curious (1, 33%)

To de-stress (1, 33%)

**Question:** Do you think that spending time with the Therapy Dogs made the students feel loved? Why?

**Who responded?** Handler 3 of the 3 (100%)

**Themed frequency:**

By connecting/lonely (3, 100%)

Unsure (2, 66%)

Fulfill a need of affection/ (2, 66%)

Talk about dogs (1, 33%)

Enjoyment (1, 33%)

**Question:** Do you think spending time with the Therapy Dogs made the student feel supported? Why?

**Who responded?** Handler 2 of 3 (66%) The non-responding handler indicated that they will plan to look for such cues in the future.

**Themed frequency:**

Being with dog/visit dog (2), 100%

Talking and sharing of feelings/hugs (2, 100%)

**Question:** Do you think spending with the Therapy Dog handlers made the students feel supported?

**Who responded?** Handler 3 of the 3 (100%)

**Themed frequency:**

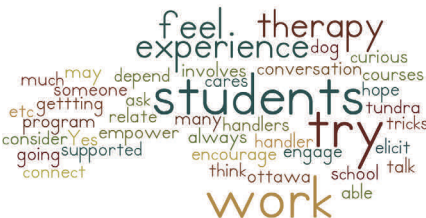
Talk/Engage/Open up (3, 100%)

Connection either campus related/dog related (2, 66%)

Empower them by allowing them to work with the dog (1, 33%)

Show interest and care about students (1, 33%)

Interest in dog therapy (1, 33%)



**Question:** What words would you use to describe the attendees' experience with the Therapy Dogs?

**Who responded?** Handler 3 of the 3 (100%)

**Themed frequency:**

Enjoyment (2, 66%)

Comfort (2, 66%)

Affection (2, 66%)

Connection (2, 66%)

Appreciation (1, 33%)



**Other Comments:**

**Who responded?** Handler 3 of the 3 (100%)

**Themed frequency:**

Unique connection with students/students connecting with one another (3, 100%)

Thankful to be part of event (1, 33%)

Nice to see enthusiastic response to event (1, 33%)

My dog thrives at this event (1, 33%)

## Discussion

Overall, the vast majority of students attending the uOttawa Therapy Dog program very much enjoyed the time they spent with the Therapy Dog teams, and specifically the dogs, and felt better because of it.

The outcomes/effects of the uOttawa Therapy Dog program are discussed within the pre-determined categories of love and support. Support for both was identified, as follows:

### *If and how students experienced love and support from the Therapy Dogs & support from the handler.*

#### LOVE

Overall, the students shared that they felt loved by the dog. Many expressed their love of animals generally, including for some their own pets.

*"I love animals."*

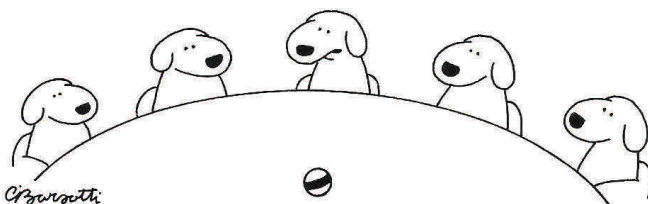
*"I love dogs and it is nice to interact with them even when I'm away from home."*

*"The golden dog very much resembles my golden at home, 6 hours from here."*

This was supported by the handlers. They felt the Therapy Dogs offered the students emotional attention and affection.

*"Connection is a major component to well-being, university can be lonely, meeting with the dogs can fulfill a need for affection."*

The literature identifies dogs' innate ability to offer and receive nurturance (Chandler, 2005; Levinson, 1984; Melson & Fine, 2010). Therapy Dogs present with non-judgmental warmth, companionship and bonding, which in turn nurtures the ability of humans to love and trust (Arkow, 2011). In fact, it has been reported that interacting with dogs can, for some, parallel the social support experienced in human-human relationships (Fine & Beck, 2010). Animals can trigger happy memories, improve mood, and bring a sense of happiness, joy and a general sense of well-being to individuals (Arkow, 2011). Perceived shifts in participants' feelings and mood may also be influenced by beneficial hormones and neurochemicals that are released when petting an



*"Perhaps we're overthinking the situation."*

# Discussion

animal, including oxytocin, prolactin, dopamine, beta endorphins and phenylethylamine (Odendaal & Lehmann, 2000).

## SUPPORT

The students shared that they felt supported by the Therapy Dogs, and as well felt support from the handlers. Many identified this as de-stressing.

*"It was very calming to play with the dogs and took away some stress about class."*

*"Maze was really friendly and soft, helps relieve stress."*

Support was interpreted by the Therapy Dog handlers as allowing the students to engage with one another as well as the handlers and dogs in a supportive environment.

*"The experience with the dogs, the handlers and their peers contribute to feeling supported, students show empathy for each other when learning of their reasons for visiting the dogs."*

The literature shares that an animal can instill relief from stress (Allen, Blascovich, & Mendes, 2002). Arkow (2011) refers to Therapy Dogs as "a form of stress-reducing or stress-buffering social support" (p.2). Kruger and Serpell (2010) suggest that they can be calming and reduce anxiety, and serve as a buffer from anxiety-generating stimuli. Physiological changes in humans can also occur, including lowered blood pressure, heart rate, levels of cholesterol and triglycerides, and increased dopamine production which reduces the stress hormone cortisol (as cited in, Arkow, 2011; Wilson, 1987).

The handlers' offering of support alongside the therapy animals has only recently been acknowledged in the literature (Adams, et al., 2015). There is, for example, evidence that the presence of a dog in a counselling session can facilitate a client's communication and feelings of comfort. Wesley, Minatrea and Watson (2009), for example, found in their study of an adult residential substance abuse program that clients were more likely to open up in the presence of a dog about their histories of violence and trauma. We have seen glimpses of this as well in the work of Hodgson and

Darling (2011) on the physician pet query, in which a primary care provider can more fully determine their patients' environmental history and social context by asking about pets.

## OTHER THERAPEUTIC BENEFITS

The students overwhelmingly shared that the dogs made them feel happy.

*"I feel happier."*

*"Dogs are fun."*

*"I enjoy pets and dogs they just make you happy."*

The handlers strongly agreed that the students showed positive affect (e.g., smiled) with the dog present. They likewise positively rated the students' level of relaxation. The handlers included the following words to describe the students' experiences with the Therapy Dogs: "joy", "laughter" "entertainment", and "fun".

The literature shares dogs live in the present moment and this can be helpful for humans to be present (B. Doan, personal communication, November 14, 2014). Individuals can gain a sense of comfort from being with a dog in the here and now. Comfort was a theme in the uOttawa student data as well. Harris (as cited in Johnson, 2011) shares, for example, that "by expressing their pure joy at seeing us, our pets teach us that living in the moment is not only a healthy thing to do, but also helps us to feel happier" (p. 33).

## Male versus Female

There were many similarities between male and female students, particularly on their agreement with participating in the event and their feeling of love/support from the dog. Some slight differences were noted in that on average, females were slightly stronger in agreement that they received support from the dog handler. Additionally, females had stronger agreement of feeling calm and feeling in control of their emotions after spending time with the Therapy Dog teams.



## Student Mental Health

Student mental health is a growing concern on university campuses and animal assisted interventions have become part of the response. The practice of offering AAls, and specifically AAAs, on university campuses has been increasing rapidly in North America (Adamle, Riley, & Carlson, 2009; Huss, 2012). There is a historic absence, however, of measuring the outcomes of AAls (Borrego et al, 2014).

A recent study by Dell et al. (2015), titled *PAWSing student stress: A pilot evaluation study of the St. John Ambulance Therapy Dog program on three university campuses in Canada*, measured the concepts of love and support for if and how students experience them, as well as key outcomes from past studies (e.g., stress, anxiety, happiness, participation). Feedback was collected from students, Therapy Dog handlers and observers. With a sample of 403 program attendees (90% students) and 16 handlers/observers at the events and 87 students at follow-up, it was found that, similar to the uOttawa Therapy Dog program, the Therapy Dogs offer love and support. "Love is understood as having reciprocal love for the dogs and gaining positive feelings from visiting with them. Support is understood as de-stressing and relaxing by interacting with the dogs" (p. 332-333).

The paper shares that "[t]he findings of this pilot evaluation study are important for a number of reasons. First, there are few studies evaluating the outcomes of AAA programs on university campuses, and none in Canada that measure the outcomes of the SJA [St. John Ambulance] Therapy Dog program. Drawing on data collected at three institutions... [t]he findings, coupled with recent literature...raise particular concern about the heightened levels of stress students may be experiencing, particularly female students. These findings can contribute substantially to current policy discussions and emerging research in the university student mental health and AAI fields" (p. 354).

# Practice & Research Recommendations

- 🐾 Identify and measure the specific objectives of the Therapy Dog program at the uOttawa. This will necessarily include accounting for the specific program goals and objectives of the two participating Therapy Dog programs (TPOC & OTD).
- 🐾 Collect additional data from the Therapy Dog handlers, given the small sample size here, even for a pilot study.
- 🐾 Conduct interviews and focus groups in the next stage of the research for more in-depth understanding of the program's benefits and challenges.
- 🐾 Review the schedule of the Therapy Dog program to see if it meets students' needs for the uOttawa campus (e.g., number of Therapy Dog teams, time of day, format of visits).

## More than a Best Friend

A recent study of three Ottawa-Based human-animal connection programs, including OTD, concluded that “[i]t is not difficult to make the case for human-animal connection programs to animal lovers, but the more quantifiable benefits of the programs have been more difficult to measure. The question of evaluating the impact of these kinds of programs has been a challenge in the past, but as programs grow in number, there is increased understanding of how and what to measure to determine program impact” (Measured Outcome, 2016; p. 14). Visit: [www.measuredoutcome.org](http://www.measuredoutcome.org)

**PILOT STUDY CONCLUSION**  
The outcomes/effects of the uOttawa Therapy Dog program support it offering students a sense of love and support, which are interpreted by the students and handlers as a means to reduce stress from their studies.

This Fact Sheet is one in a series. The findings of the Fact Sheets cannot be compared to one another because the AAI programs vary in clients, approaches and species.



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## References

- Adams, C., Arratoon, C., Boucher, J., Cartier, G., Chalmers, D., Dell, D.,... & Wuttunee, M. (2015). The helping horse: How equine assisted learning contributes to the wellbeing of First Nations youth in treatment for volatile substance misuse. *Human Animal Interaction Bulletin*, 1(1), 52-75.
- Adamle, K.N., Riley, T.A., & Carlson, T. (2009). Evaluating college student interest in pet therapy. *Journal of American College Health*, 57(5), 545-548.
- Allen, K., Blascovich, J. & Mendes, W. (2002). Cardiovascular reactivity and the presence of pets, friends and spouses: The truth about cats and dogs. *Psychosomatic Medicine*, 64(5), 727-39.
- Arkow, P. (2011). *Animal-assisted Therapy and Activities: A Study and Research Resource Guide for the use of Companion Animals in Animal Assisted Interventions* (10th ed.). Stratford: Ideas.
- Borrego, J., Franco, L., Mediavilla, M., Pinero, N., Roldan, A. & Picabia, A. (2014). Animal-assisted interventions: Review of current status and future changes. *International Journal of Psychology and Psychological Theory*, 14(1), 85-101.
- Chandler, C. (2005). *Animal Assisted Therapy in Counselling*. New York: Routledge.
- Creswell, J. (2013). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (3rd ed.) California: Sage.
- Dell, C., Chalmers, D., Gillett, J., Rohr, B., Nickel, C., Campbell, L.,...Brydges, M. (2015). "PAWSing student stress: A pilot study of the St. John Ambulance Therapy Dog program on three Canadian campuses". *Canadian Journal of Counselling and Psychotherapy*, 49(4), 332-359.
- Delta Society (n.d.). *Delta Society*. Retrieved February 15, 2015, from <http://www.deltasociety.com.au/>
- Denzin, N.K. & Lincoln, Y.S. (2008). Introduction: The discipline and practice of qualitative research. In N.K Denzin & Y.S Lincoln (Eds.). *The Landscape of Qualitative Research*. (3rd ed., pp. 1-43). California: Sage.
- Fine, A. & Beck, A. (2010). Understanding our kinship with animals: Input for health care professionals interested in the human/animal bond. In A. Fine (Ed.), *Handbook on Animal-assisted Therapy: Theoretical Foundations and Guidelines for Practice* (3rd Ed., pp. 3-15). California: Academic Press.
- Hodgson, K. & M. Darling (2011). Zoeyia: An essential component of "One Health". *The Canadian Veterinary Journal*, 52(2), 189-191.
- Huss, R.J. (2012). Canines on campus: Companion animals at postsecondary educational institutions. *Missouri Law Review*, 77 (2), 418-479.
- Johnson, R. (2011). The human-animal bond in animal-assisted therapy. In D. Radford (Ed.), *Caring for Family Pets: Choosing and Keeping Our Companion Animals Healthy* (pp. 29-41). California: ABC-CLIO, LLC.
- Kruger, K. & Serpell, J. (2010). Animal-assisted interventions in mental health: Definitions and theoretical foundations. In A. Fine (Ed.), *Handbook on Animal-assisted Therapy: Theoretical Foundations and Guidelines for Practice* (2nd ed., pp. 21-38). San Diego: Academic Press.
- Levinson, B.M. (1984). Human/companion animal therapy. *Journal of Contemporary Psychotherapy*, 14, 131-143.
- Measured Outcome (2016). *More Than a Best Friend*. Ottawa: Author.
- Melson, G. & Fine, A. (2010). Animals in the lives of children. In A. Fine (Ed.), *Handbook on Animal-assisted Therapy: Theoretical Foundations and Guidelines for Practice* (3rd Eds, pp. 223-245). California: Academic Press.
- Odendaal, J. & Lehmann, S. (2000). The role of phenylethylamine during positive human-dog interaction. *ACTA Veterinaria*, 69 (3), 183-188.
- Saldana, J. (2010). *The Coding Manual for Qualitative Researchers*. California: Sage.
- Therapeutic Paws of Canada (2015). *Evaluation*. Retrieved October 19, 2015, from <http://tpoc.ca/pet-evaluations/>
- Wesley, M., Minatrea, N. & Watson, J. (2009). Animal-assisted therapy in the treatment of substance dependence. *Anthrozoos: A Multidisciplinary Journal of the Interactions of People & Animals*, 22(2), 137-148.
- Wilson, C. (1987). Physiological responses of college students to a pet. *Journal of Nervous & Mental Disease*, 175(10), 606-612.
- University of Ottawa (2012). *uOttawa student counsellors and canine companions help reduce stress and anxiety*. Retrieved June 20, 2015, from <http://www.uottawa.ca/media/media-release-2537.html>



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Drs. C. Dell, D. Chalmers & J. Gillet

## Data Input & Analysis:

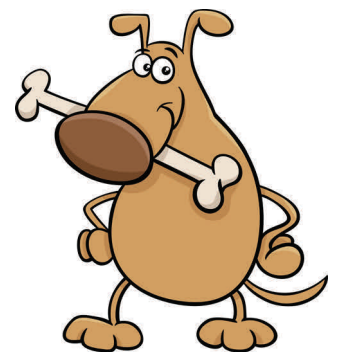
Dr. B. Rohr, C. Nickel & A. Husband

**uOttawa Project Member:** A. Giles & S. Fournel

Thank you to all who participated—students, organizing staff and Therapy Dog Teams!

# NOTES

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# NOTES

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