



## Application Form

Before completing the following application, carefully review the 'Guidelines and Information' and 'Application Checklist' documents at [www.horsesandhumans.org](http://www.horsesandhumans.org).

A complete application packet includes:

- |                         |  |
|-------------------------|--|
| I. Cover Page           | VIII. Lay-language Abstract                            |
| II. Scientific Abstract | IX. Biographical Sketch of Principal Investigator      |
| III. Need/Justification | X. Evidence of Compliance with Government Requirements |
| IV. Research Narrative  | XI. Signed 'Conditions of Award' Form                  |
| V. Proposed Time Line   | XII. Attachments                                       |
| VI. Intent to Publish   |  |
| VII. Proposed Budget    |  |

Please no binding or stapling of materials. Incomplete applications will not be considered. Applications lacking any of the required materials are considered incomplete.

Applicants are required to use correct equine-assisted activities/therapies (EAA/T) terminology (available at [horsesandhumans.org](http://horsesandhumans.org)).

**APPLICATIONS MUST BE SUBMITTED IN BOTH PAPER AND ELECTRONIC FORMATS.** Email the completed application to [info@horsesandhumans.org](mailto:info@horsesandhumans.org). The subject line of ALL emails should be the complete title of the application. Multiple attachments or emails *will* be accepted. Additionally, submit a paper version of the completed application (one complete set of all required paper work, with original signatures) to:

USPS (regular U.S. mail):  
Horses & Humans Research Foundation  
P.O. Box 480  
Chagrin Falls, OH 44022 USA

UPS/FEDEX:  
Horses & Humans Research Foundation  
16 Daisy Lane  
Chagrin Falls, OH 44022 USA

Horses and Humans Research Foundation (HHRF) must receive the completed application by the end of the business day on the established deadline (Should the deadline fall on a weekend or holiday, the due date is the closest **preceding** business day). The main contact listed on the application will be sent a notice (by email or mail) of receipt of their application within two weeks of the HHRF office receiving it. If the applicant does not receive such a confirmation, inquire at [info@horsesandhumans.org](mailto:info@horsesandhumans.org).

## HHRF Research Grant Application Cover Page

Title of Project: **Effects of Equine Facilitated Psychotherapy on Post-Traumatic Stress Symptoms in Youth** Submission Date: June 14, 2013

Principal Investigator Name and Title: Megan K. Mueller, Ph.D., Research Assistant Professor

Contact Name and Title: Megan K. Mueller, Ph.D., Research Assistant Professor

(NOTE: The contact person is the only person with whom HHRF will have direct contact. The contact person receives all letters and notification from the HHRF office.)

Institute: Center for Animals and Public Policy, Tufts University Cummings School of Veterinary Medicine

Address (provide physical AND mailing addresses, if different): 200 Westboro Road, North Grafton, MA 01536

Telephone Number: 508-887-4543

FAX Number:

Email Address: [megan.mueller@tufts.edu](mailto:megan.mueller@tufts.edu)

URL: [vet.tufts.edu](http://vet.tufts.edu)

Primary focus area of the investigation (i.e. mental health, physical therapy, speech therapy, occupational therapy, education, recreation, the horse-human relationship): **mental health**

Years and Titles of past HHRF Funding Applications: **n/a**

### **Safety and quality standards for EAA/T:**

Name(s) of personnel directly involved with any associated EAA/T:

**Leslie McCullough, PhD., MSSW, LCSW, PATH certified**

**Winter Keeler, MSW, LCSW in progress at University of New Hampshire, PATH certified**

**Isabella (Boo) Martin, M.Ed., PATH certified**

Are all listed personnel certified to provide the activities? **Yes** No (If yes, please provide member numbers with each name)

Certifying organization's name, website and contact information, or evidence of equivalent standards adhered to (please attach explanation if necessary):

### **Leslie M. McCullough, PhD, MSSW, LCSW (Co-Investigator)**

Assistant Professor, School of Social Work

Washburn University, Topeka, KS

- PATH International certified (member #7418)
- Actively involved with animals in counseling settings for over 30 years, 25 years in EFP/L: lectures, workshops, and training sessions
- Participated in the early development of the Equine Facilitated Mental Health Association including board membership, education committee and workshop development

<http://washburn.edu/our-faculty/leslie-mccullough>

**Isabella (Boo) Martin, M.Ed.**

Contact information below under site standards

PATH, Intl. Master Instructor (one of only 25 in the US) (member #507)

Certified Horsemanship Association Master Instructor (only dually trained Master Instructor for both CHA and PATH, Intl. in the country)

American Camping Association Certified Camp Director

Founder of the Horse Power Instructor Training School (one of 4 nationally approved training courses for therapeutic riding professionals)

Honorary Chair of PATH, Intl. Equine Advocacy Committee (the national committee which has a mission of advocating for the horses in the PATH, Intl. programs in the US)

Former Member of PATH, Intl. Instructor Certification Committee Member of Equine Facilitated Mental Health Committee which created the Equine Specialist Workshop and Certification.

Past Co-Founder and Co-President of Equine Facilitated Mental Health Association

Past President of NH Camp Directors Association

Past Board Member of ACA/New England

**Winter Keeler, MSW**

LCSW in progress at University of New Hampshire (will be completed by grant start date)

PATH International Registered Therapeutic Riding Instructor (member # 5549350)

Senior Clinical Supervisor, Wediko School

Life Guard Trainer; Lay Responder First Aid, CPR and AED Instructor; CPR for the Professional Rescuer, First Aid and Life Guard certification

**Site standards for EAA/T:**

Is the site providing EAA/T programming accredited to do so? **Yes** No Member Number:

Accrediting organization's name, website address and contact information, or evidence of equivalent standards adhered to (please attach explanation if necessary):

**Touchstone Farm - Horse Power**

Contact information:

Isabella (Boo) Martin

13 Pony Farm Lane Temple, NH 03084

603-654-6308 (office), 603-321-5255 (cell)

[bmartin@touchstone-farm.org](mailto:bmartin@touchstone-farm.org), [www.touchstone-farm.org](http://www.touchstone-farm.org)

Touchstone Farm is nationally accredited by PATH, Intl. as a Premier Center (<http://www.pathintl.org>); PATH, Intl. as an Approved Training Course; the American Camping Association, Certified Horsemanship Association and is approved as an Educational and Evaluation Site by the Carriage Association of America. All of the instructors are certified by either PATH, Intl., American Riding Instructor Association, Certified Horsemanship Association and/or Centered Riding. All safety standards of the various organizations are carefully upheld by all Touchstone staff and volunteers. A team of advisors including insurance agents, lawyers, equine professionals regularly update both the board and program staff of recommendations to continue the excellent record of safety upheld for over 41 years of continuous operation. All program and farm staff are CPR and First Aid certified and often attend professional development sessions to continue to hone the safety and success of all participants who participate in our programs.

Will others collaborate or consult with you on this project? **Yes** No

If yes, list Individuals or Organizations collaborating on project:

Leslie McCullough, Ph.D. (Co-Investigator)

Touchstone Farm – Horse Power

Wediko School

Attach letters to you that state collaborating individuals or organizations agreement to do so.

Brief description of project (60 words or less):

This project will evaluate an Equine Facilitated Psychotherapy (EFP) program geared toward reducing youth post-traumatic stress disorder (PTSD) symptoms. Youth will be recruited from Wediko School, and will be exhibiting PTSD symptoms. Participants will be assigned to the treatment group (EFP and standard therapy) or control group (standard therapy) and assessed on improvement in PTSD symptoms over 10 sessions.

Pilot Study Completed? **Yes** No Completion Date: December, 2010

Is project Institutional Review Board approved? Yes No **Pending**

Please attach a copy of the IRB application. **See attached.**

Start Date of Project: November 1, 2013

End Date of Project: April 30, 2015

Amount Requested from HHRF: \$ **\$49,845.10**

**II. Scientific Abstract** - 200 words or less, double spaced, describing the proposed project.

The purpose of the proposed study is to investigate changes in levels of PTSD symptomatology as measured by the Children's Revised Impact of Event Scale (CRIES-13) and levels of the human-animal bond as measured by the Human-Animal Bond Scale (HABS) in children and adolescents ages 10-18 over the course of a 10-week EFP intervention. Members of the treatment group ( $N = 30$ ) will participate in 10, two hour sessions of Equine-Facilitated Psychotherapy (EFP) over the course of 12 weeks. Control participants ( $N = 30$ ) will not receive any EFP, but will continue to receive the already existing therapeutic services provided by their treatment facility. Both the treatment and control groups will complete a survey prior to beginning the program, at 5 weeks after the start of the program, and a third time at the completion of the 10 week program. The survey will include measures of PTSD symptomology (Revised Child Impact of Events Scale-13 [CRIES-13]; Perrin, Meiser-Stedman, & Smith, 2005), and human-animal bond (HABS; Terpin, 2004). Multivariate Repeated Measures Analysis of Variance (MANOVAs) will be used to compare both within group and between group (treatment and control) change in the CRIES-13 and HABS between baseline, week 5, and week 10.

Sections III-VI below should total 14 pages or less (excluding references, bibliography, charts and graphs, which should be included as Attachments in Section XII) typed on one side of the page only, with pages numbered, double spaced, 1" margins and 12 point font size.

**III. Need/Justification** Why is the proposed project useful to the EAA/T industry? What need is there within the current information and treatment modalities in use? What are the anticipated implications for EAA/T and/or the disorder being studied? It may be helpful to include links with prior work in EAA/T, basic information about the disorder being studied, current 'best practice' treatment, comparative studies and/or possible translation into 'evidence based practice'.

Recently, increased attention has been paid in the research literature to the use of animal-assisted therapy (AAT) as an effective therapeutic technique. Animal assisted therapy (AAT) can help facilitate change in behavior and/or emotions through a client's interaction with an animal (DELTA, 2008). AAT is conducted by a health/human service professional having one or more clinical goals for a specific individual (DELTA, 2008). For example, an AAT intervention might include a licensed therapist directing a withdrawn individual to pet, groom, walk and interact with an animal during increasingly longer periods of time and then practicing similar social strategies with other people. AAT interventions are driven by a treatment plan with goals designed to meet the patient's treatment needs.

In particular, equine-assisted therapy (EAT) is becoming an increasingly popular therapeutic technique for treating individuals of all ages with a range of physical and/or emotional conditions, such as cerebral palsy, multiple sclerosis, motor dysfunction, autism spectrum disorders, schizophrenia spectrum disabilities, learning disabilities, and trauma recovery (Freund et al., 2011). Working with horses on the ground (grooming and tacking up the horse) can provide opportunities for patients to learn to accept sensory input, develop nonverbal communication skills such as eye contact, and provide a comfortable situation to interact verbally with a therapist. While on the horse, the rhythmic motion of the horse's movement can encourage relaxation and focus, and the overall experience may promote self-confidence in learning a new skill (Freund et al., 2011).

Equine Facilitated Psychotherapy (EFP) is a specialized form of EAT. The Equine Facilitated Mental Health Association (EFMHA, 2009) described EFP as a form of experiential psychotherapy that includes equines. It is a treatment approach that provides clients opportunities to enhance self-awareness and re-pattern maladaptive behaviors, feelings, and attitudes (EFMHA, 2009). As in AAT, EFP denotes an on-going therapeutic relationship with clearly established treatment goals mutually determined by client and therapist (EFMHA, 2009). Different from AAT, which often incorporates companion animals in therapy, Brackenridge and Shoemaker (1996) explained that the human-horse bond is more a partnership relationship than pet; special and fulfilling but not in the life-long, sustaining manner attributed to household companion animals. The unique nature of the human-horse relationship helps to clarify why EFP can be so effective – it is the independence and development of “out-of-home” relations that reflect the client’s transition from dependent (“sick person”) to one of self-reliance and competency. Developmentally, human relations with horses are akin to adolescent relations outside the home, fulfilling a need for independence and a peer group with whom to socialize and share adventures (Brackenridge & Shoemaker, 1996). Therefore, EFP may be especially appealing to youth in the age group proposed for this study.

Evaluating effective methods of comprehensive mental health services for youth is increasingly important, as young people are being diagnosed with serious emotional and behavioral disorders at an alarming rate (Timimi, 2006). Mental Health American (MHA, 2008) reports that one in five (20%) young people experiences a serious mental health problem, with numbers estimating 7.7- 12.8 million children and teens. It is projected that 14 to 25% of youth will experience at least one major depressive episode before adulthood (Ryan & Andrew, 2005). Often, these disorders are comorbid with posttraumatic stress disorder (PTSD), both as

adjunctive to and as a result of early childhood trauma (Matsakis, 1996). Complicating matters is the difficulty in assessing PTSD in youngsters due to symptoms presenting differently in children than they do adults. While cognitive behavioral interventions have proven helpful in ameliorating the symptoms of depression (Ryan & Andrew, 2005), anxiety (NIMH, 2008) and conduct disorders (Texas Youth Commission, 1996), they are not as effective in reducing PTSD symptomatology unless specifically trauma-based (Bisson, 2005). Matsakis (1996) explained this occurrence, saying that while many trauma victims have difficulties understanding or expressing their feelings, youth may not even know or understand their internal experience or that there is even a problem. Because PTSD is difficult to overcome, particularly when masked or comorbid with other conditions, new therapeutic interventions techniques need to be considered that move beyond or serve as a complement to traditional talk therapy (Brooks, 2006).

Furthermore, the special developmental needs of youth having stress-related emotional and behavioral problems due to maltreatment and trauma are difficult to accommodate in traditional outpatient settings, resulting in the majority of traumatized young people not receiving adequate treatment (USDHHS, 2008). Animal assisted therapy (Hooker, Freeman & Stewart, 2002), specifically, Equine Facilitated Psychotherapy (EFP) (Hayden, 2003), has proven effective in reducing children's anxiety over attending therapy, treating emotional and behavioral disorders while also contributing to the therapist-client relationship. Additional research as to the efficacy of animal-based/EFP outpatient psychotherapy needs to be conducted in order to provide evidence for EFP as a viable alternative to traditional interventions for this population.

Therefore, the objective of the proposed study is to investigate whether EFP can create changes in levels of PTSD-related symptomatology in youth ages 10 to 18. The intervention,



based on equine activities included in a psychotherapy session, will be investigated as a viable treatment option for the population of youth experiencing PTSD symptoms. Generally, the findings from this study will provide additional evidence regarding the role of the human-animal bond in clinically based treatment. If the specific research hypotheses are supported, the findings from this study will be useful in advancing awareness of EFP as a viable psychotherapeutic intervention.

Furthermore, a key goal of the present study is to facilitate the dissemination of evidence-based best practice in the field of EFP and increase the scope of research in this area. Therefore, a secondary objective of the proposed study is to disseminate the research findings in scholarly venues (e.g., peer reviewed journals, professional conferences) as well as to other EAT practitioners via training and collaboration sessions. This dissemination includes training other PATH accredited facilities on principles of research-practice integration, and collaborating with other high quality, certified facilities to conduct research projects with the goal of attaining larger participant sample pools to create more generalizable, systematic programs of research. To accomplish this goal, we are systematically integrating formal plans for dissemination and collaboration into the structure of the proposed research project.

**IV. Research Narrative** Narrative should be clear and concise and may include but is not limited to:

1. Research question
2. Hypothesis
3. Design
4. Methods (include Pilot Testing and IRB process)
5. Measures
6. Test Procedures
7. Analysis

**Research Question and Hypothesis:**

The purpose of the proposed project is to assess the effectiveness of an Equine-Facilitated Psychotherapy intervention on mitigating posttraumatic stress symptoms and increasing the

human-animal bond in a population of youth ages 10-18. To investigate changes in levels of PTSD symptomatology and in levels of the human-animal bond over the course of a 10-week EFP intervention, the following research questions and hypotheses are presented.

**Q1.** To what extent, if any, do the levels of symptoms associated with PTSD in youth ages 10-18 change over the course of 10 weekly EFP sessions? Furthermore, do youth in the treatment group experience greater decreases in PTSD symptoms than those in the control group receiving traditional treatment only?

**H1a.** We hypothesize that the levels of symptoms associated with PTSD in youth ages 10-18 will decrease over the course of 10-weekly EFP sessions as indicated by scores on the CRIES-13.

**H1b.** We hypothesize that levels of symptoms associated with PTSD in youth ages 10-18 participating in EFP sessions decrease significantly more over a 10-week period compared to youth not participating in EFP outpatient sessions, as indicated by scores on the CRIES-13.

**Q2.** To what extent, if any, do the levels of the human-animal bond in youth ages 10-18 change over the course of 10-weekly EFP sessions?

**H2.** We hypothesize that the levels of the human-animal bond in youth ages 10-18 increase over the course of 10-weekly EFP outpatient sessions as indicated by HABS scores.

**Q3.** To what extent, if any, is there an association between changes in levels of symptoms associated with PTSD and changes in levels of the human-animal bond in youth ages 10-18 after 10-weekly EFP outpatient sessions?

**H3.** We hypothesize that there will be an association between pretest-posttest changes in symptoms associated with PTSD and pretest-posttest changes in human-animal bond levels in youths ages 10-18 after 10-weekly EFP outpatient sessions as indicated by pretest-posttest scores on both CRIES-13 and the HABS.

**Participants:**

Youth will be recruited from Wediko School, a not-for-profit residential treatment center located in Windsor, New Hampshire that provides therapeutic and educational services to male youth ages 6 to 21 with emotional, behavioral, and academic needs. Started in 1989, the Wediko School provides year-round residential care for those students who need highly intensive services and supports beyond the capacity of most public school systems. Boys with a history of serious difficulties in home and school settings are referred to the program by their schools, families, or by other allied professionals. Wediko has nearly 80 years of experience developing options and opportunities for underserved children by extending the continuum of services, coordinating supports, and implementing best practice approaches to meet children's clinical and developmental needs.

Youth ages 10-18 will be considered for the proposed research project. Potential participants will be administered the Revised-Children's Inventory of Events Scale-13 (CRIES-13; Perrin et al., 2005) with those chosen to participate indicating PTSD symptomatology by obtaining a baseline score of 12 or above (see Measures section below for discussion of inclusion criteria). Of the eligible students meeting the baseline CRIES-13 criterion, 30 youth will be assigned to the treatment group (EFP intervention, plus the traditional therapeutic services offered by Wediko) and 30 youth will be assigned to the control group (Wediko therapeutic services only).

Families of participants will be invited to attend a meeting in which both the study and Touchstone Farm will be described and any questions answered. The meeting will be held in conjunction with a regularly scheduled parent-day activity in order to reduce burdening the families with excessive transportation. Any parents who are unable to attend the session will be mailed information along with contact names and numbers should they have questions. During this time, parents of participants will be given a consent form to sign that allows their child to participate in the research. The consent forms will be discussed and signed during the parent-day event. Each family will also fill out a Touchstone Farm release form that includes personal information as well as a page on goals and a confidentiality disclaimer. Youth participants will be given an assent form saying that they understand the nature of the project and agree to participate. If a youth's parents cannot attend the parent orientation, the child will receive assistance from the Clinical Director during regular weekday hours.

**Pilot Data:**

The pilot study (conducted by Dr. Leslie McCullough) assessed the effectiveness of utilizing Equine Facilitated Psychotherapy (EFP), an experiential, cognitive-behavioral based intervention, for the treatment of PTSD symptoms of maltreated youth. The EFP model in the pilot study incorporated a mind-body-emotion approach that allowed for projection and transference, with equine behavior and energetic responses providing rich metaphors for the client's life (Klontz, Bivens, Leinart & Klontz, 2007). The client's interpretations of the behaviors and responses of the horse enabled an opportunity to process unresolved issues immediately as part of the psychotherapy session (Klontz et al., 2007). Each EFP session began with a check-in between client and therapist/client, parent and therapist and also included art therapy. Clients drew a picture representative of his/her current feelings or experiences during

the week as means of articulating what could not be said in words. Drawing also helped alleviate negative emotions, which encouraged greater focus, thereby increasing the likelihood of client capability for approaching and joining with the horse.

Employing a quasi-experimental design, a purposive sample of eleven youth ages 10-18 who presented with PTSD symptomatology participated in eight, 1.5-2 hour weekly EFP outpatient sessions. Therapy included both mounted and ground-work activities. Pretest-mid tests-posttests were administered to assess the impact of the intervention (symptom reduction) and the strength of the human-animal bonding between equines and participants. Pretest measures were used to determine eligibility for participation. Midtests were administered at session 4 and posttests following the final eighth session. Measures included the Children's Revised Impact of Events Scale -13 (CRIES-13; Perrin, Meiser-Stedman, & Smith, 2005) a comprehensive questionnaire measuring levels of PTSD symptomatology in youth and the Human-Animal Bond Scale (HABS; Terpin, 2004), measuring the strength of the human-animal bond between client and horse. Data analysis conducted via non-parametric sign tests, using weighted measures indicated identical significant results both for the CRIES-13 (9 positive pairs, 2 negative pairs,  $p = 0.033$ ) and the HABS (9 positive pairs, 2 negative pairs,  $p = 0.033$ ). Interestingly, there was no correlation between the CRIES-13 and HABS instruments (Spearman's Rho = -0.228,  $p = .25$ ). This implies that the EFP treatment effects are multi modal, working in multiple directions at the same time.

Significant results in both measures suggest that the EFP model presented may be a viable psychotherapy for traumatized youth suffering PTSD symptomatology. Implications for the field include EFP's suitability for trauma sufferers at different phases of both lifespan and trauma recovery. While the limited sample size and the absence of a control group indicate

further investigation is warranted, the pilot data provide support for the hypotheses and research methods in the proposed study.

### **Design and Methods:**

The proposed study will utilize a quasi-experimental repeated measures design using a treatment group and a control group. The proposed study is quasi-experimental because while every effort will be made to randomize the treatment/control group selection, youth who do not wish to participate in the equine intervention will not be required to do so.

Members of the treatment group will participate in 10 sessions of EFP over the course of 12 weeks (session will be conducted in three consecutive groups of 10 participants each). Each group session (10 youth) will last approximately 2 hours and will be conducted by a licensed clinical social worker with the assistance of one PATH International trained therapeutic riding instructor (TRI) or mental health paraprofessional with equine experience per student. The therapy team will pair horses and students appropriately based on temperament, size, etc. The EFP sessions will include: learning how to lead horse from field, grooming, leading horse in arena and over ground poles, ground work, mounted activities, and art therapy (as noted in the pilot study design).

The EFP sessions will be conducted at Touchstone Farm's Horse Power Program. Touchstone Farm is a PATH Premier Accredited Center and approved training location in Temple, New Hampshire. Equine Facilitated Psychotherapy sessions are normally conducted out of doors. Most youth experience an out-of-doors environment as comfortable and friendly. Such an environment can help create a climate that is amenable to the garnering and utilization of client insight and knowledge (Fine, 2000; Streeck-Fischer & van der Kolk, 2000), and therefore the evaluation data from the proposed study may be more useful than data from a laboratory

simulation. Control participants will not receive any EFP intervention. The control group participants will receive already existing therapeutic services at Wediko School.

Participants in both the treatment and control group will be administered a baseline survey assessing PTSD symptoms and human-animal bond at session 1, and then follow-up surveys at week 5 and week 10. Participants in the treatment group will be administered the survey by a trained research assistant. Participants in the control group will be administered the survey by trained Wediko staff members.

The proposed project is currently pending Institutional Review Board (IRB) approval at Tufts University (see XII Attachments).

### **Measures:**

Participants will be administered the CRIES-13 (Revised Child Impact of Events Scale-13; Perrin et al., 2005) and HABS (Human-Animal Bond Scale; Terpin, 2004) pretests prior to their first EFP session. The questionnaire will be administered again at session 5 and session 10.

**CRIES-13:** Each potential participant will complete the CRIES-13 (Perrin et al., 2005) pretest, a survey instrument measuring intrusion, avoidance, and arousal symptoms associated with PTSD. The CRIES-13 also will serve as a screening mechanism for inclusion in the study. As a brief, self-report screening instrument with robust constructs such as intrusion and arousal, the CRIES-13 is an appropriate instrument for this study. The instrument is easy to administer and to score and can be used for small-scale as well as large-scale investigations.

The CRIES-13 includes 13 Likert-type items, with response options of 0 (*Not at all*), 1 (*Rarely*), 3 (*Sometimes*), and 5 (*Often*). Although the CRIES-13 has three subscales – intrusion, avoidance, and arousal – a composite score can also be reported (Children and War, 2009). The possible range of composite scores for the CRIES-13 is 0 to 65. The CRIES-13 composite score

will be treated as a continuous variable, as is typical in the treatment of Likert-type scales in behavioral research (Dewberry, 2004; Jaccard & Wan, 1996).

Based on previous work with the CRIES-13 measure, we will use a score of 12 or higher on the CRIES-13 as an appropriate cutoff criterion for assessing clinically significant levels of PTSD symptomology (McCullough, 2011; Perrin et al., 2005). Eligibility for participation in the study will require that potential participants respond positively to enough answers to show PTSD symptomatology. Maurer, Raju and Collins (1988) have distinguished cut-off scores from critical scores specifically when the situation in question is the recruitment of potential applicants, such as is the case in this study. These authors state that cut-off scores take into consideration different levels of performance (high vs. low PTSD symptomatology for example) and in this respect, are criterion-based due to the measurement corresponding to what could be looked at as minimally acceptable performance. The CRIES-13 measures intrusion ( $n=4$ ), avoidance ( $n=4$ ) and arousal ( $n=5$ ) levels of PTSD (Perrin et al., 2005). The cut-off score of 17 as indicated in the above study distinguished those youth diagnosed with PTSD. While the most descriptive score for those having the clinical distinction, this score nonetheless seemed high for recruiting potential participants. Therefore, in order to participate in this study all participants had to have answered at least 4 questions in the sometimes (3 points) category on the pretest in order to participate in the study. The cut-off score was therefore 12, or answering sometimes (3) to four questions indicating PTSD-related symptoms. Furthermore, the pilot study indicated that a cut-off score of 12 was both appropriate and clinically significant (McCullough, 2011).

**HABS:** The Human-Animal Bond Scale (HABS; Terrpin, 2004) will be used to assess the short-term impact of non-companion animals on the youth in the treatment group. The HABS includes 15 items, each of them based on a Likert-type scale with values ranging from 1



(*strongly disagree*) to 5 (*strongly agree*). The composite HABS score has possible values between 15 and 75, and will also be treated as a continuous variable.

**Data Analysis:**

Multivariate Repeated Measures Analysis of Variance (MANOVA) tests will be used to compare both within group and between group (treatment and control) change in the CRIES-13 and HABS between baseline, week 5, and week 10 (Hypothesis 1a, 1b, 2). Multiple regression analyses will be used to assess the potential relationship between change in human-animal bond scores and change in CRIES-13 scores from pre-test to post-test, controlling for baseline scores (Hypothesis 3).

## **V. Proposed Time Line**

**Start date: November 1, 2013**

**November 1, 2013 – December 1, 2013:** Planning and preparation for training sessions and recruitment.

**December 9-13, 2013:** Training session for program therapy assistants, therapists, and paraprofessionals (conducted by Dr. McCullough).

**January 6 to March 31, 2014:** Session 1 (10 sessions within 12 weeks)

**March 31 to June 23, 2014:** Session 2 (10 sessions within 12 weeks)

**July, 2014:** One training and collaboration session will be conducted with a partner PATH Accredited Therapeutic Horsemanship Center.

**August 18-21, 2014:** Training session for program therapy assistants, therapists, and paraprofessionals (conducted by Dr. McCullough).

**September 1 to November 24, 2014:** Session 3 (10 sessions within 12 weeks)

**December 1, 2014 to January 15, 2015:** Data analysis

**February, 2015:** One training and collaboration session will be conducted with a partner PATH Accredited Therapeutic Horsemanship Center

**April, 2015:** One training and collaboration session will be conducted with a partner PATH Accredited Therapeutic Horsemanship Center.

**February to April, 2015:** Publications will be submitted for consideration in peer-reviewed journals and trade publications.

**VI. Intent to Publish** Recipients of HHRF grants will be committed to a serious effort to publish resulting research findings in a peer-reviewed journal. Please detail your intentions for further disseminating research results, including plans to publish and present.

We will target high quality peer-reviewed journals that focus on human-animal interaction and equine-assisted therapy (e.g., *Anthrozoös*, *Human-Animal Interaction Bulletin*), as well as child development and mental health more broadly (e.g., *Developmental Psychology*, *Journal of Social Work*, *Applied Developmental Science*). The results of this research project will also be submitted for dissemination at the annual conferences of the International Society for Anthrozoology (ISAZ), the Society for Research in Child Development (SRCD), and the Federation of Horses in Education and Therapy International (HETI). The purpose of this dissemination strategy is to target scholarly audiences within the field of EAA/T, as well as

scholars in developmental science more broadly in order to increase the breadth impact of the proposed research.

Furthermore, a secondary goal of the proposed project is to disseminate information about evidence-based practice in the field of EFP specifically, and EAT more broadly. Therefore, we propose to develop and conduct three training and collaboration sessions with other high-quality, PATH Premier Accredited facilities in the New England area. The purpose of these sessions will be to facilitate dissemination of knowledge collaboration, and infrastructure development around supporting evidence-based practice in EAT and conducting research on the efficacy existing EAT programs. The goal of the three proposed collaboration settings is to support a network of EAA/T facilities that promote research-practice integration, and to create opportunities for promoting larger-scale research that will provide more generalizable findings about best practice in EAA and EAT. The purpose of the proposed project is not just to conduct an evaluation of one specific program, but to build the capacity of researchers and practitioners in empirically-based practice of EAT.

## VII. Budget

All budget items must be related directly to the research question and methodology and will be prorated. Larger grants may be paid in progressive payments, checks written only after progress reports are sufficiently completed. All budget referrals should be related in U.S. dollars. **Please provide itemized budget and narrative justification. No indirect costs are allowed.** There are no word limits to this section, however, please be concise in explanation.

### **TOTAL GRANT REQUEST (US Funds): \$ 49,845.10**

- 1) **PERSONNEL:** (*Principal investigator, co-investigator, statistician, research assistant*) Please describe scope of work, salary, fringe benefits, FTE.

*Megan K. Mueller, Ph.D., Principal Investigator:* 7% FTE (plus 28% benefit rate) for 1.5 years = XXX

Dr. Mueller will be responsible for coordinating IRB approval for the study, coordinating data collection and management, data analysis, and preparing and submitting publications.

*Leslie McCullough, Ph.D., Co-Investigator:* Conducting two three day training sessions for paraprofessionals and therapists: X per three day session x 2 sessions = X

Dr. McCullough will conduct two three-day training sessions for the therapeutic riding instructors/paraprofessionals, therapist, and research assistants involved in the project. The training sessions are critical in facilitating high quality, consistent EFP sessions. She will be available for consultation throughout the course of the study and will also assist in preparing and submitting publications.

*Winter Keeler, MSW, LCSW* (to be completed by grant start date), *PATH Registered TRI:* \$X per 2 hour session x 12 weeks x 3 groups: X

Winter Keeler will serve as the licensed clinical social worker supervising EFP sessions.

*Isabella (Boo) Martin, M.Ed., PATH Master Instructor, PATH Equine Specialist:* Coordination and supervision of EFP sessions, including coordination of paraprofessionals and volunteers: gratis

**Personnel Total: \$17,045.10**

**Personnel % of total budget: 34.2%**

- 2) **PERMANENT EQUIPMENT:** Itemize and describe purpose, justification of needs, how it will be acquired, etc.

**Permanent Equipment Total: \$0**

**Permanent Equipment % of total budget: 0%**

- 3) **CONSUMABLE SUPPLIES:** Itemize and describe justification of needs, how it will be acquired, etc.

*Touchstone Farm/Stepping Stone Lodge facility use for two three-day training sessions:* gratis

*Food and supplies for two three-day paraprofessional/therapist training session:* \$600 per session x 2 sessions = \$1,200

Food and training materials for up to 8 therapists/paraprofessionals for the two three-day training sessions.

*Incentives for participants:* 60 youth x \$15 each = \$900

Participants in the treatment group will be given a choice of a \$15 gift card or a framed photo of their favorite horses as incentive for participation. Participants in the control group will be given a \$15 gift card as incentive for participation.

*Supplies for art activities as part of EFP sessions:* \$500

Art supplies for use in therapy sessions include high quality colored paper, pens, paint, crayons, safety scissors, binders for student work.

*Printing costs for study information materials, release forms, consent forms, and surveys:* \$200

*Facility rental, food, supplies, and educational materials for three training/collaboration sessions with accredited facilities:* \$1,500 x 3 = \$4,500

**Consumable Supplies Total: \$7,300**

**Consumable Supplies % of total budget: 14.7%**

- 4) **CONSULTANT COSTS:** Describe rate of pay, scope of work, justification of need, etc.

*Kim Guest, Psy.D.:* Coordination of recruitment and data collection at Wediko: \$3,000

As the clinical director at Wediko School, Dr. Guest will facilitate the parent information day, coordinating recruitment, and coordinating data collection by trained research assistants for the control group at the Wediko facility.

**Consultant Costs Total: \$3,000**

**Consultant Costs % of total budget: 6%**

- 5) **TRAVEL:** (*Will only cover subject travel reimbursement or for meeting of work groups.*)

*Travel from Wediko School to Touchstone Farm:* gratis

*Travel for Leslie McCullough to Touchstone Farm to conduct two training sessions:* \$3,000

Travel includes airfare from Texas to New Hampshire, rental car, and lodging for two training sessions and three collaboration sessions.

**Travel Costs Total: \$3,000**

**Travel % of total Budget: 6%**

- 6) **CLIENT-RELATED EXPENSES:** Itemize and describe all related costs.

*Touchstone Farm:* Cost for clients to participate in 10 sessions over a 12 week session (covers cost of horses, facility use, stipends for paraprofessionals and therapeutic riding instructors): \$650 per student x 30 participants in treatment group = \$19,500

**Client-Related Expenses Total: \$19,500**

**Client-Related Expenses % of total budget: 39.1%**

- 7) **HORSE EXPENSE:** (*Must be directly related to research question and methodology.*) Explain cost basis related to percentage of time used in project.

**Horse Expense Total: \$0**

**Horse Expenses % of total budget: 0**

8) **BUDGET JUSTIFICATION:** Please provide any further budget justification or explanation here.

**OTHER INCOME SOURCES and ANTICIPATED FUNDING SUPPORT:**

**a. Active/Committed:** Is this project being funded by other sources (federal, institutional and/or private grants or other sources)? Please provide source/institution name, project titles, specified designations and restrictions, starting and ending dates and amounts. Do not include general or overall program support.

**Total Active/Committed: \$0**

**b. Pending:** Is support for this project being sought elsewhere? Please provide source/institution name, project titles, specified designations and restrictions, starting and ending dates and amounts.

**Total Pending: \$0**

**c. Related Support:** List all other sources of support, pending or current, including federal (NIH, VA, NSF, etc.), foundation, industrial, or other. Give complete titles of all grants as well as total funding, yearly funding, funding for your salary, funding for your research, and inclusive funding dates.

**Total Related Support: \$0**

## **VIII. Lay Language Article**

Date: June 14, 2013

Title of Project: Effects of Equine Facilitated Psychotherapy on Post-Traumatic Stress Symptoms in Youth

Name of Principal Investigator: Megan K. Mueller

Approximately 400 words in lay language, understandable to 12<sup>th</sup> grade education level and suitable for use in HHRF and related publications as determined by HHRF. This should include information on the research question, the need for the research, and general explanation of the methodology, procedures, analysis and any other applicable information.

Evaluating effective methods of comprehensive mental health services for youth is increasingly important, as young people are being diagnosed with serious emotional and behavioral disorders at an alarming rate. Often, these disorders are associated with posttraumatic stress disorder (PTSD) symptoms related to childhood trauma. While traditional cognitive behavioral interventions have proven helpful in reducing the symptoms of depression, anxiety, and conduct disorders, they are often not as effective in reducing PTSD symptoms in youth. Because of the difficulties in treating youth PTSD symptoms, particularly when associated with other mental or physical conditions, the development of new, effective treatment techniques is necessary.

One such intervention, equine facilitated psychotherapy (EFP), has been effective in reducing children's anxiety over attending therapy and in treating emotional and behavioral challenges. However, additional research on the efficacy of animal-based/EFP outpatient psychotherapy needs to be conducted in order to assess if EFP is a useful alternative to traditional interventions for PTSD symptoms in particular.

The purpose of this study is to investigate the effectiveness of EFP in the treatment of posttraumatic stress symptoms in children and teens. In addition, we are looking at the effects of the human-animal bond on the effectiveness of this program. Participants (male youth ages 10 to 18) will be selected from a therapeutic treatment facility and placed either in a group of students receiving EFP, or in a group of students who will continue to receive the treatment from the therapeutic facility. Youth in the EFP program will attend EFP sessions once a week for 10 sessions during a 12 week period (two extra weeks to allow for absences). All youth will be asked to complete a brief survey at the beginning of the program, at week 5, and at week 10.

Generally, the findings from this study will provide additional evidence regarding the role of the human-animal bond in clinically based treatment. If the specific research hypotheses are supported, the findings of this study will be useful in advancing awareness of EFP as a viable psychotherapeutic intervention. Furthermore, a key goal of the present study is to facilitate the dissemination of evidence-based best practice in the field of EFP. Therefore, a secondary objective of the proposed study is to disseminate the research findings in scholarly venues (e.g., peer reviewed journals, professional conferences) as well as to other EAT practitioners via training and collaboration sessions.

**IX. Biographical Sketch of Principal Investigator** - Professional information on the principal investigator, co-investigator(s), statistician and/or research assistant. Principal investigators must have a reputation for completing projects, publishing results in an expeditious manner and cooperating with funding agencies in providing reports and educational materials.

Include the following:

- Education (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training. Information should include institution name and location, name of degree and year conferred, and field of study.)
- Research and professional experience (Previous employment and honors)
- Titles, authors, dates and complete references for a sampling of major publications during the past 3 years and earlier publications pertinent to this application.

**Megan Kiely Mueller, Ph.D., (Principal Investigator)**

**Education**

2013 Tufts University, Medford, MA  
Doctor of Philosophy, Child Development

2010 Tufts University, Medford, MA  
Master of Arts, Child Development

2008 Tufts University, Medford, MA  
Bachelor of Arts, Psychology and Child Development (summa cum laude)

**Positions and Employment**

2013-present Research Assistant Professor, Center for Animals and Public Policy, Department of Clinical Sciences, Tufts Cummings School of Veterinary Medicine

2008-2013 Doctoral Research Assistant, Institute for Applied Research in Youth Development, Tufts University, Medford, MA

**Research Support**

**Title:** Human-Animal Interaction (HAI) in Military Families: Partnering with Animals to Promote Health and Positive Development in Military-Connected Youth

**Source:** Zoetis (formerly Pfizer Animal Health)

**Goal:** To gather initial, descriptive data about the covariation between pet ownership and animal experiences more generally, and psychological and physical health in military-connected youth.

**Principal Investigator:** Dr. Megan Mueller (Dr. Deborah Linder, Co-PI)

**Title:** The 4-H Study of Positive Youth Development.

**Source:** National 4-H Council

**Goal:** To gather longitudinal data about the individual strengths and contextual assets associated with the promotion of adaptive developmental regulations in adolescence.

**Principal Investigator:** Dr. Richard M. Lerner



**Title:** The Young Entrepreneurship Study

**Source:** John Templeton Foundation

**Goal:** To obtain quantitative and qualitative longitudinal data about the individual and contextual bases of the development of entrepreneurship in young adulthood.

**Principal Investigator:** Dr. Richard M. Lerner

**Awards:**

- |      |  |
|------|--|
| 2013 | Tufts University Graduate School of Arts and Sciences Outstanding Contributions to Undergraduate Education Award |
| 2013 | Eliot-Pearson Award for Doctoral Research-Practice Integration   |
| 2012 | Tufts University Graduate Institute for Teaching Fellowship  |
| 2008 | Tufts University Frederick Melvin Ellis Award  |
| 2008 | Intercollegiate Horse Show Association Captain of the Year Leadership Award                                      |

**Other Experience and Professional Memberships**

Member, Society for Research in Child Development

Member, Society for Research on Adolescence

Member, International Society for Anthrozoology

**Selected Publications**

**Mueller, M. K.** (in press). Human-animal interaction (HAI) as a context for positive youth development: A relational developmental systems approach to constructing HAI theory and research. *Human Development*.

**Mueller, M. K.** (in press). Is human-animal interaction (HAI) linked to positive youth development? Initial answers. *Applied Developmental Science*.

**Mueller, M. K.** (in press). The relationship between types of human-animal interaction and emotions and cognitions about animals: An exploratory study. *Anthrozoös*.

Geldhof, G. J., Bowers, E. P., Boyd, M. J., **Mueller, M. K.**, Napolitano, C. M., Schmid, K. L., Lerner, J. V., & Lerner, R. M. (in press). The creation and validation of short and very short measures of PYD. *Journal of Research in Adolescence*.

Geldhof, G. J., Weiner, M., Agans, J. P., **Mueller, M. K.**, & Lerner, R. M. (in press). Understanding entrepreneurial intent in late adolescence: The role of intentional self-regulation and innovation. *Journal of Youth and Adolescence*.

Greenberg, G., Schmid, K. L., & **Mueller, M. K.** (2013). Emergence, self organization, and developmental science. In R. M. Lerner & J. B. Benson, (Eds.), *Advances in Child Development and Behavior: Embodiment and epigenesis: Theoretical and methodological issues in understanding the role of biology within the relational developmental system* (pp. 95-126). Elsevier Publishing.

- Lerner, R. M., Napolitano, C. M., Boyd, M., **Mueller, M. K.**, & Callina, K. S. (2013). Mentoring and positive youth development. In D. DuBois and M. Karcher (Eds.). *Handbook of youth mentoring: Mentoring and positive youth development*. (2<sup>nd</sup> ed., pp. 17-27). Thousand Oaks, CA: Sage Publications.
- Napolitano, C. M., Callina, K. S., & **Mueller, M. K.** (2013). Comparing alternate approaches to calculating reliability for dichotomous data: The sample case of adolescent selection, optimization, and compensation. *Applied Developmental Science: Methods and Measures*, 17(3), 1-5.
- Lerner, J. V., Bowers, E. P., Minor, K., Boyd, M. J., **Mueller, M. K.**, Schmid, K. L., Napolitano, C. M., Lewin-Bizan, S., & Lerner, R. M. (2012). Positive youth development: Processes, philosophies, and programs. In R. M. Lerner, M. A., Easterbrooks, & J. Mistry (Eds.), *Handbook of Psychology, Volume 6: Developmental Psychology* (2<sup>nd</sup> edition, pp. 365-392). Editor-in-chief: I. B. Weiner. Hoboken, NJ: Wiley.
- Lerner, R. M., Boyd, M., **Kiely, M. K.**, Napolitano, C. M., Schmid, K. L., & Steinberg, L. (2011). The history of the study of adolescence. In B. Brown, M. Prinstein (Eds.), & R. K. Silbereisen (Volume ed.). *Encyclopedia of adolescence* (pp.169-176). New York, NY: Academic Press.
- Lerner, R. M., Lerner, J. V., Lewin-Bizan, S., Bowers, E., Boyd, M. J., **Mueller, M. K.**, Schmid, K. L., & Napolitano, C. M. (2011). Positive youth development: Processes, programs, and problematics. *Journal of Youth Development*, 6(3), 40-64.
- Mueller, M. K.**, Lewin-Bizan, S., & Urban, J. B. (2011). Youth activity involvement and positive youth development. In R. M. Lerner, J. V. Lerner, & J. B. Benson, (Eds.), *Advances in Child Development and Behavior: Positive youth development: Research and applications for promoting thriving in adolescence* (pp. 229-247). Elsevier Publishing.
- Mueller, M. K.**, Phelps, E., Bowers, E. P., Agans, J., Urban, J. B., & Lerner, R. M. (2011). Youth development program participation and intentional-self regulation skills: Contextual and individual bases of pathways to positive youth development. *Journal of Adolescence*, 34, 1115-1125.
- Schmid, K. L., Phelps, E., **Kiely, M. K.**, Napolitano, C. M., Boyd, M. J., & Lerner, R. M. (2011). The role of adolescents' hopeful futures in predicting positive and negative developmental trajectories: Findings from the 4-H Study of Positive Youth Development. *Journal of Positive Psychology*, 6(1), 45-56.
- Bowers, E. P., Li, Y., **Kiely, M. K.**, Brittan, A., Lerner, J. V., & Lerner, R. M. (2010). The Five Cs model of positive youth development: A longitudinal analysis of confirmatory factor structure and measurement invariance. *Journal of Youth and Adolescence*, 39, 720-735.

**HUMAN SUBJECTS**  
COMPLIANCE WITH U.S. GOVERNMENT REQUIREMENTS

The following statements are signed by an individual authorized to act for the institution and to assume on behalf of the institution the obligations imposed by the following:

The Tufts University (Principal Investigator or Institution) agrees that if a research grant is awarded by the Horses and Humans Research Foundation (HHRF) to Megan K. Mueller (Applicant/Principal Investigator) for the project Effects of Equine Facilitated Psychotherapy on Youth Post-Traumatic Stress Symptoms (Project Title) and if human subjects are used in any of the activities supported by such award, that it will comply with all applicable U.S. Department of Health and Human Services regulations with respect to the rights and welfare of such subjects. To the extent allowable by the State of Massachusetts, the Tufts University (Institution) agrees to indemnify and hold HHRF harmless from any claims arising from such activities, and acknowledges that HHRF does not and will not assume responsibility for the subjects involved.

**SIGNATURE OF APPROVAL BY THE DEAN OR HEAD OF  
INSTITUTION ON BEHALF OF INSTITUTION**

---

Signature

---

Type/Print Name and Title of Dean or Head of Institution

---

Date

**ANIMAL SUBJECTS**  
**COMPLIANCE WITH GOVERNMENT REQUIREMENTS**

The following statements are signed by an individual authorized to act for the institution and to assume on behalf of the institution the obligations imposed by the following:

The Tufts University (Principal Investigator or Institution) agrees that if a research grant is awarded by the Horses & Humans Research Foundation (HHRF) to Megan K. Mueller (Applicant or Principal Investigator) for the project Effects of Equine Facilitated Psychotherapy on Youth Post-Traumatic Stress Symptoms (Project Title) and if animal subjects are used in any of the activities supported by such award, that it will comply with all applicable U.S. Department of Health and Human Services regulations with respect to the rights and welfare of such subjects.

To the extent allowable by the State of Massachusetts, the Tufts University (Institution) agrees to indemnify and hold HHRF harmless from any claims arising from such activities, and acknowledges that HHRF does not and will not assume responsibility for the subjects involved.

**SIGNATURE OF APPROVAL BY THE DEAN OR HEAD OF  
INSTITUTION ON BEHALF OF INSTITUTION**

---

Signature

---

Type/Print Name and Title of Dean or Head of Institution

---

Date

## XI. Research Grant Conditions of Award

1. At least one member of the research team must be fluent in English and published in peer-reviewed English language journals.
2. No institutional overhead or other indirect costs will be paid and should not be included as part of any grant request. A letter to your institution explaining this condition can be requested if needed. Beware that substantive equipment costs could work against the success of the grant request.
3. All funds awarded shall be used in accordance with the submitted and approved proposal and accompanying budget. Any unused portion thereof shall be returned to the Horses and Humans Research Foundation (HHRF). If an unforeseen problem occurs with the study design, notify HHRF immediately. Potential changes to the study design with additional financial assistance from HHRF may be considered to salvage the study and still lead to a favorable outcome.
4. Grant awards will be made in US dollars. Fifty percent will be awarded after the midpoint report is accepted and the remainder will be awarded when the project is fully completed, unless other arrangements have been specified and agreed to. The value of the grant will not be adjusted for inflation, cost over runs, or foreign exchange rate fluctuations. It is the responsibility of the recipient to manage these potential variables (example: if grant budget deals in euros, a loan could be purchased at the time of award, in US dollars, against the euro).
5. At the midpoint of the grant period a progress report and financial report must be submitted. A final report must be submitted within 60 days of the completion of the project. The final report shall include a scientific abstract, summary data tables, a financial report, and a less-technical lay language article (400 words) to potentially be used in HHRF and related publications as determined by HHRF. Confidential data that could jeopardize formal publication in a peer-reviewed journal should not be disclosed in the lay articles. If a delay in project completion of more than 3 months duration is anticipated, HHRF must be notified promptly with a brief explanation and a request for extension. All investigators are encouraged to communicate and work with HHRF for the best possible outcome of their study. Failure to comply with the above conditions may result in revoking of all award funding.
6. The Principal Investigator must assure HHRF of his or her intended work location. HHRF must be advised at the time of application of all moves, contemplated or real. Changes of address, phone number, fax number and email *within the same institution* must be promptly conveyed to HHRF. Changes in site location during a funded period must be approved by HHRF.
7. All publications (including poster abstracts at medical conferences) resulting from HHRF-funded research must include HHRF in a footnote/credit line/disclosure, and copies of such publications must be provided to HHRF. All publicity and information disseminated about such research must acknowledge HHRF support. This is an essential part of HHRF's conditions of award. Publicity or information about the project is used to keep supporters to HHRF informed about how their donations are being spent. This

condition of award does NOT involve disclosure of any information that might jeopardize the applicant's ability to formally publish their findings.

8. The recipient of any research grant awarded must certify that any research, including work involving human and/or animal subjects, will be conducted according to the rules and regulations of the United States Department of Health and Human Services. The recipient must agree to hold HHRF harmless from any and all claims which may arise from any associations/issues related to such research.
9. All studies involving therapeutic riding horses must comply with accepted industry standards for care, treatment, and humane work load. All mounted work must comply with accepted industry standards for safety – including a certified instructor/therapist or evidence of equivalent standards. Therapeutic riding program sites must be accredited by or provide evidence of equivalent standards for facility safety.
10. A one-year grant period is assumed. HHRF may approve the funding of a multi-year project, with funding of subsequent years pending the successful completion of the initial year. Applicants must consult HHRF prior to submitting a multi-year application.
11. Recipients of HHRF grants will be committed to a serious effort to publish resulting research findings in a peer-reviewed journal. HHRF will be kept informed of publication efforts.
12. All grant applicants must include one signed copy of this “Research Grant Conditions of Award” as a necessary part of their grant application to HHRF.
13. The Foundation reserves the right to terminate an award if the grant holder or staff funded by the grant is in breach of any of the conditions of award or becomes unfit or unable to pursue the work funded by the grant.

*I have read and understood HHRF's "Research Grant Conditions of Award" and my signature below signifies that I agree to abide by all conditions specified.*

Principal Investigator's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Principal Investigator's name and title (please print) Megan Kiely Mueller, Research Assistant Professor

**XII. Attachments** Copy of IRB Application (with informed consent form), references, bibliography, charts, graphs and other supporting information as needed.

**Appendix A.1** – IRB cover page

**Appendix A.2** – IRB application

**Appendix A.3** – Individual investigator form

**Appendix A.4** – Consent/Assent forms

**Appendix B** – Measures

**Appendix C** – References

**Appendix D** – McCullough letter of support

**Appendix E** – Touchstone Farm – Horse Power letter of support

**Appendix F** – Wediko School letter of support