

Superstar Rats Teach Empathy to Researchers



OLAW Online Seminar
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University of British Columbia



SUPERSTAR RATS TEACH EMPATHY

Cathy Schuppli MSc, PhD, DVM
University of British Columbia

The Superstar Rats:

Orca

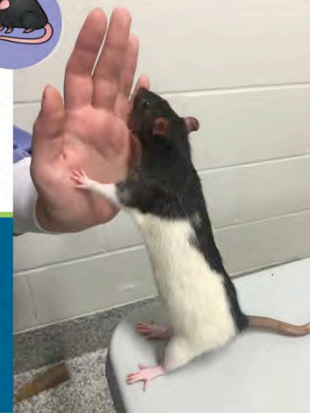
Gentle and caring
mother of the Long
Evans team.



The Superstar Rats:

Grandin

Probably loves
fetch more than any
dog.



The Superstar Rats:

Jane

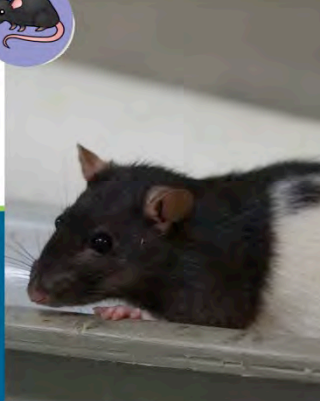
Loves fetch almost
as much as Grandin.



The Superstar Rats:

Marie

100% food
motivated: would
sell her siblings
for treats.



The Superstar Rats:

Amelia

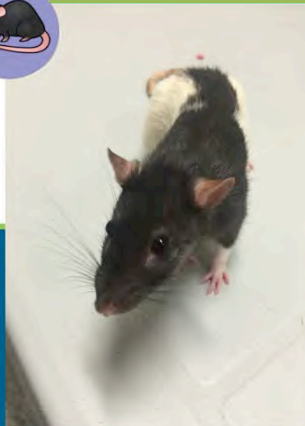
Always up for a
challenge.



The Superstar Rats:

Anne

Easily distracted
shoulder warmer.



The Superstar Rats:

Teresa

Very agile and
easily distracted.
Always on the go.





Bee-Li Tan, Joyce Sato-Reinhold, Vivian Chew, Lara Kolody, Nevene Hammoud, Sarah Mcnamara, Venessa Wong, Andrea Walterhouse, Joanna Makowska, and Daniel Weary



Rat Superstar Project Aim

Test if exposure to well socialized rats,
that demonstrate complex mental and
behavioral capabilities, increases
empathy of those working with
research animals



People Matter

A key element to achieving good animal welfare is having caring people who work with animals



Empathy & Compassion

- Establishes concern and connection with another being
 - Directs our interest and understanding of what is going on with another being
 - Makes someone want to refrain from hurting and instead help another
- = Ideal qualities for safe guarding animal welfare



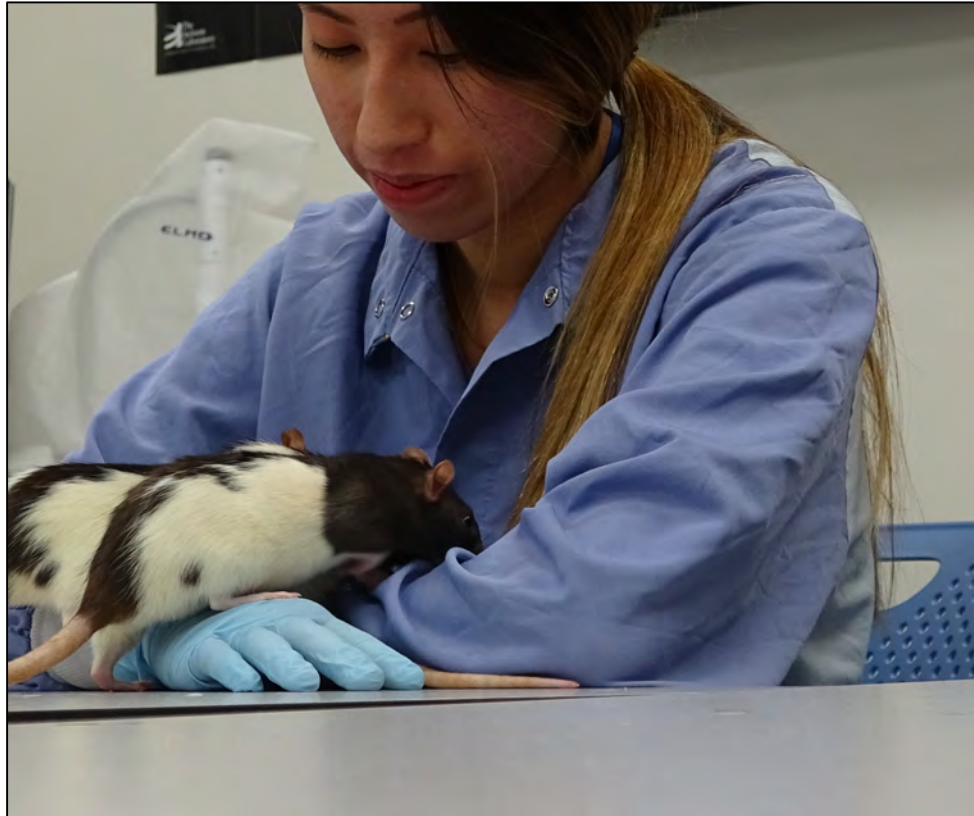
Belief in Animal Mind

Animals are:

- Self aware
- Capable of solving problems
- Experience emotions: fear, pleasure, depression ...



Belief in Animal Mind



- More concerned about animal welfare
- Behave more humanely towards animals
- Have more empathy towards animals and humans

(Broida J. et al.1993; Hills AM. 1995; Knight S. et al. 2004)

Research community needs people who believe in animal mind with empathy and compassion



Educational Intervention

Goal: Use rats to help capitalize on features important to fostering empathy

- Mandatory class for researchers
- Students enrolled in class observed rats:
 1. “Regular” (control)
 2. “Superstar” (intervention/treatment)



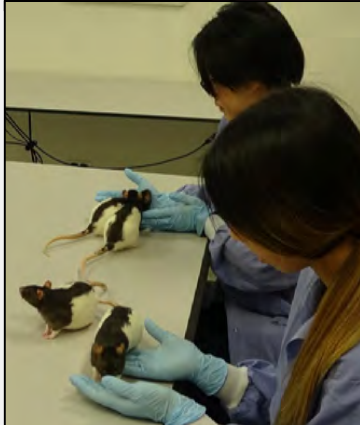
Educational Intervention

Intervention (treatment): observed 7 highly trained rats perform

Intervention Promoted:

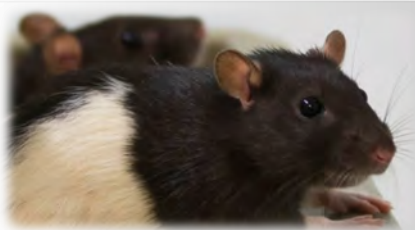
- Feelings towards rats
- Direct experience
- Understanding of mental experiences

Regular Rats (control): no training

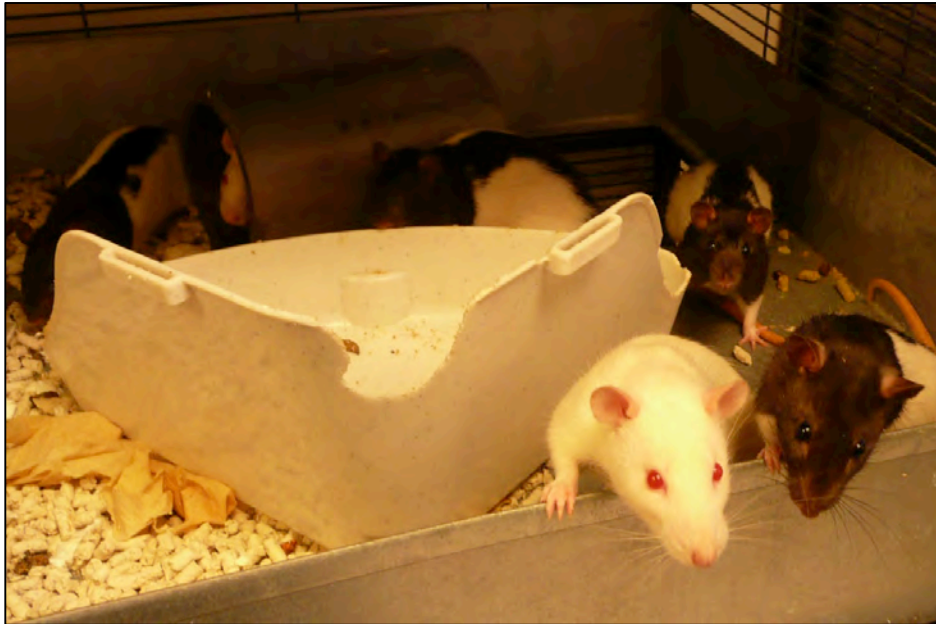


4 Phases:

- ① Socialization
- ② Training
- ③ Educational Intervention
- ④ Focus groups

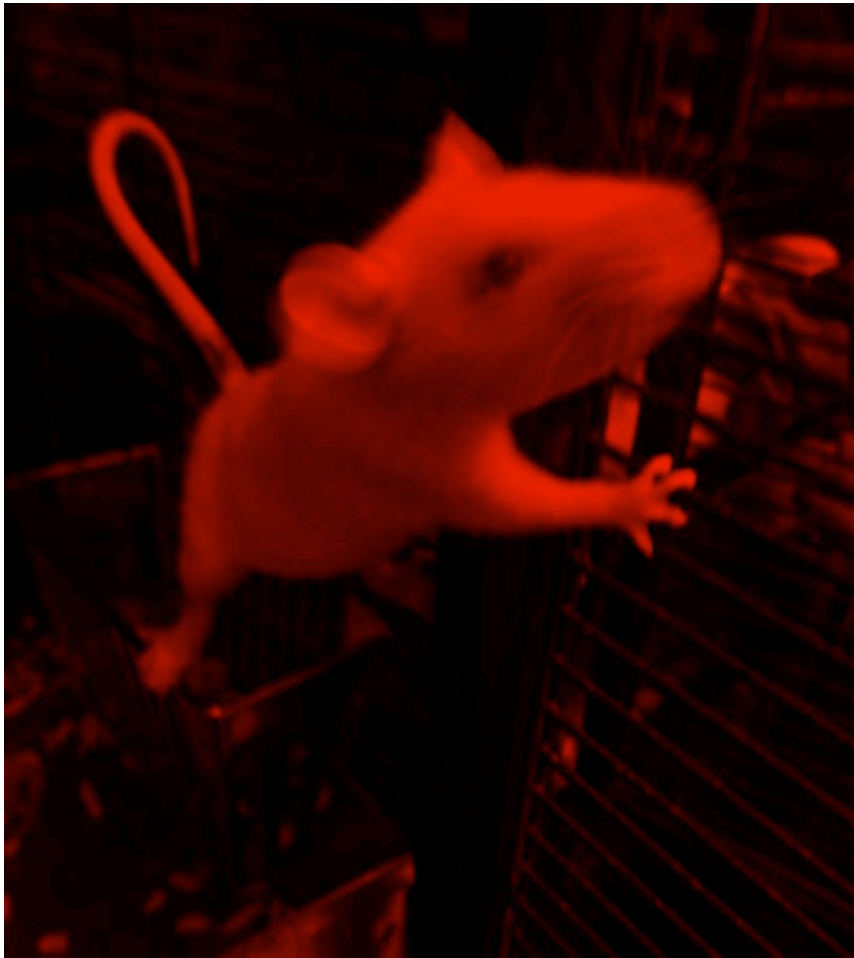


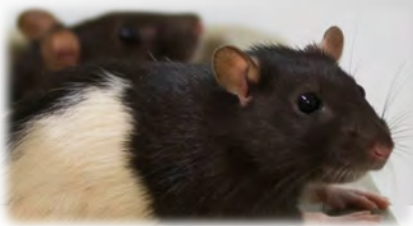
Housing





Lighting





Phase 1 - Socialization



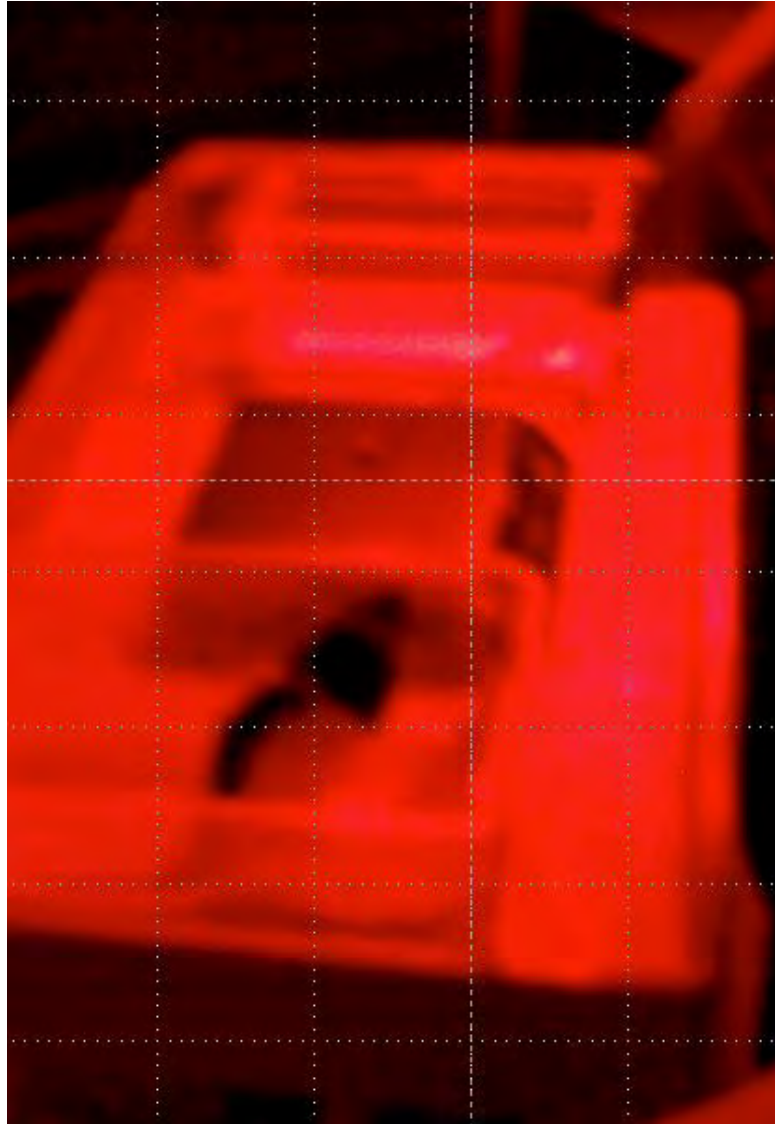


Phase 2 - Training



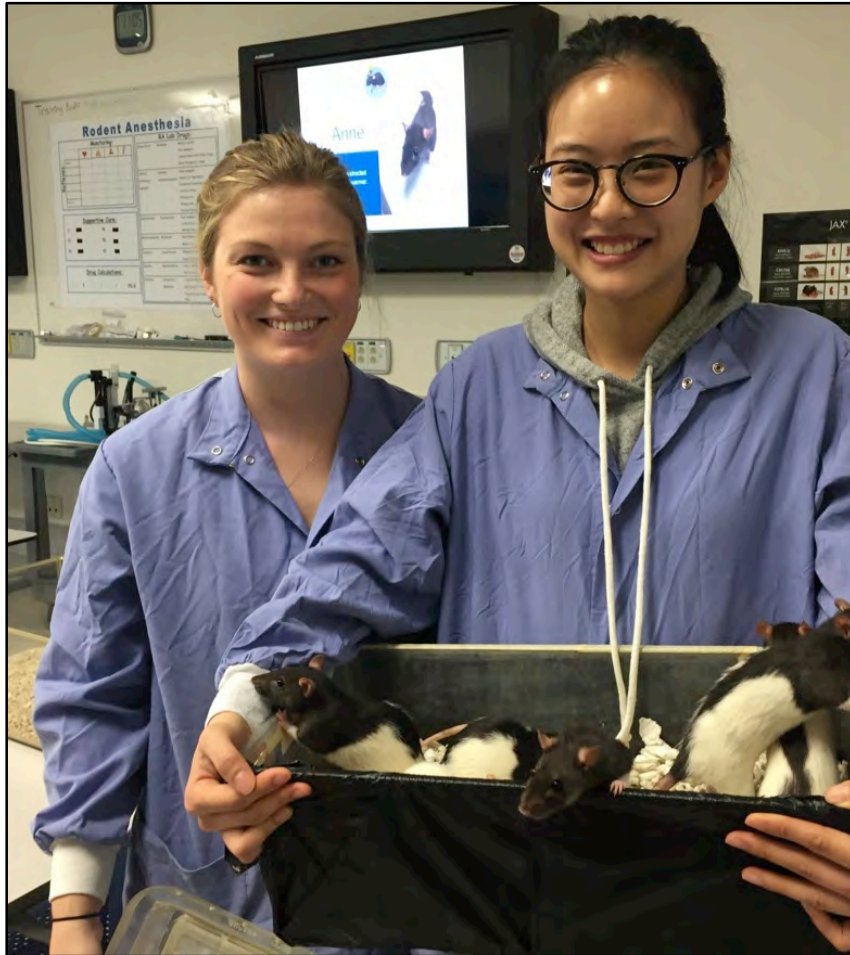
- Clicker and target training began at 4 weeks of age
- Long-Evans rats trained best
- Females more focused than males after puberty

[Video]





Phase 3 – Intervention





Intervention: Set up

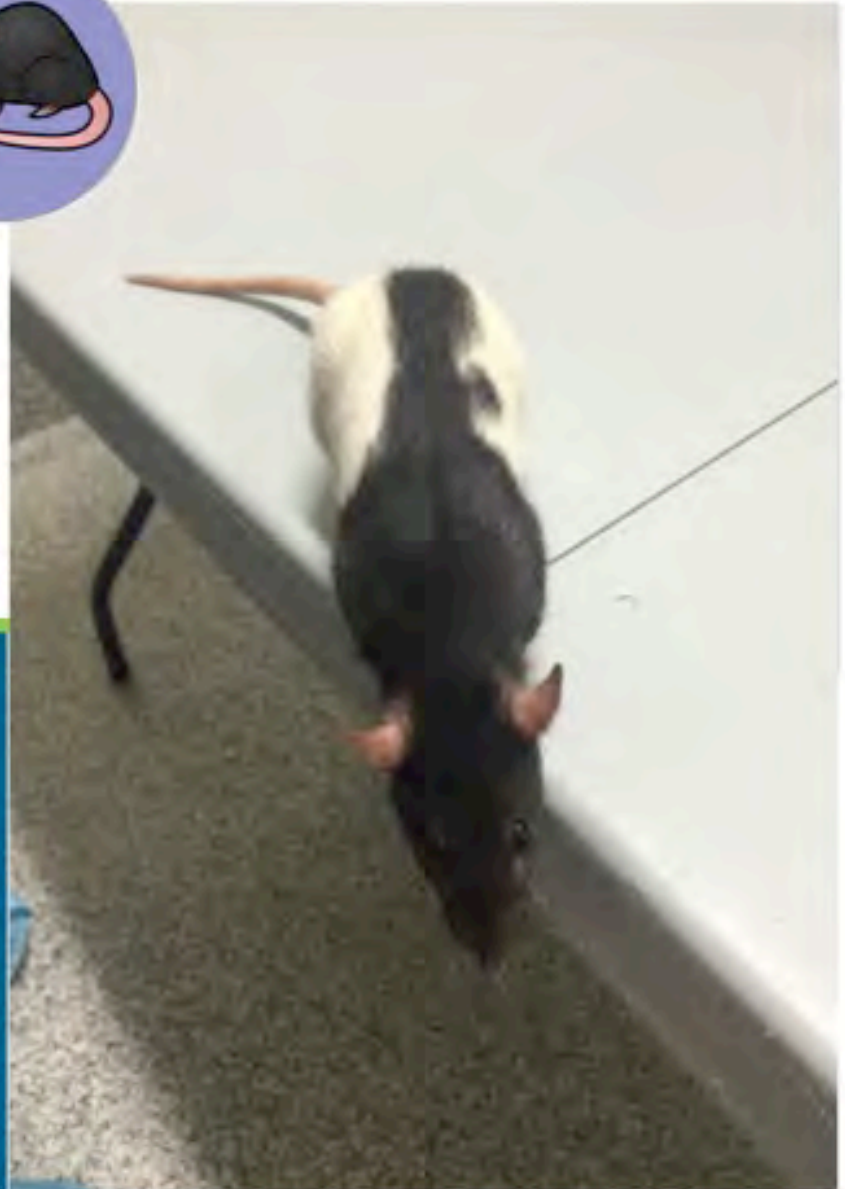




The Dream Team:

Marie

100% food motivated
(Would sell her siblings
for treats).





The Dream Team:

Grandin

Probably loves fetch
more than any dog.



[Video]





Phase 4 - Focus Groups

- 8 focus groups (3-6 people per group)
- 3 control & 5 intervention groups
- 29 participants (25 researchers, 4 veterinary technicians)
- 20 females, 9 males
- Researchers: graduate students, post-docs
- Research areas: Neuroscience to immunology
- 50% with previous rat experience



Phase 4 - Focus Groups

- 8 open-ended questions
- Recorded and transcribed

Questions:

- What was your experience when you handled the rats?
- Did you learn anything new about rats?
- Do you feel your experiences with rats in the class might influence how you care for and interact with your rats later?



Focus Groups - Analysis

- Qualitative analysis of transcripts
- Method: Constant comparison
 - Classified until emergent themes identified
- Quotes illustrate themes

3 Major Themes



1. Evidence of Empathy/BAM



Evidence of Empathy/BAM

Intervention

Rats are Amazing!

- All participants recounted a sense of “amazement” and “surprise” when they watched the rats perform

Rats are smart

“Yeah my dog can’t do any of that.” RA



Evidence of Empathy/BAM

Rats have personalities

“I thought it was funny that they knew their names and they could respond to their names. It ... made them ... like they had their own separate little personalities, especially with the slide up there. So when I went to handle the rat, I was like “who is this?” I wanted to know, which is weird because in my lab it’s just numbers.” RK



Evidence of Empathy/BAM

Rats are capable of experiencing emotions

“... they enjoy the handlers, ... they enjoy the interaction... .” RR

“So now I know they would understand if I give them love. I feel like they would understand it, so I can actually make their lives better by giving them more attention.” RM



A Nudge in the Right Direction

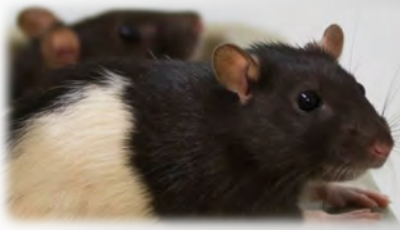
- Participation in the intervention “reminded” students of their moral responsibilities to their research subjects

“... it’s a really good way of reminding us students that these are animals, creatures. They are intelligent, ... they aren’t ... just a tool. Treat them humanely, treat them correctly. I think it’s just a good reminder and oh yeah, they are adorable.” RE



A Nudge in the Right Direction

“I think about them differently now. ... “Y” and I just anesthetize rats and take their brain out. We actually got to see more of what they’re capable of ... I have a bit more respect ... for them.” RL



Evidence of Empathy/BAM

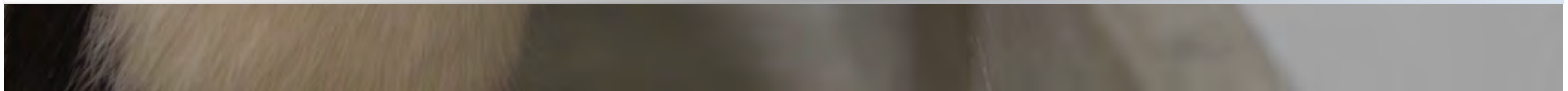
Control groups

- Few comments were related to the rats they met in the class except they found them cute
- Focus was on what they learned in class (technical)

“Yeah, I learned that thing that once I grab the rat outside the cage, I should turn around so that the rat may not get into the cage again. So that's something I learned new here.” SD



2. Witness to Human-Animal Relationship





Witness to Human-Animal Relationship

Improved learning environment

- Reduced fear of being bitten while learning how to handle rats

“I saw how you were handling the rats and you were using your hands. ... when I first saw them I was a little taken aback and then ... I just noticed that you were comfortable with them and that made me feel like ... they wouldn't bite.” RL



Witness to Human-Animal Relationship

Consequences of knowing your research animal

Participants imagined implementation in their own labs:

- Concerns about becoming “attached”, “bonded” or “connected” to research subjects
- Emotional burden on researchers



Witness to Human-Animal Relationship

“... as a researcher it would be a lot harder to sacrifice them. I think because usually they just have numbers, right? Them having names and you having that connection with them – I think I already have a hard time with the sacrifice – so I think it might make it even harder. But at least they lived a happy, fun little life, right?”



Witness to Human-Animal Relationship

Blurring of the Boundaries

- Moral unease with blurring line between a “pet-like” research subject and traditional view of research animals
- Naming was not allowed in one facility because it fostered a personal relationship

“So our boss just said no one’s naming anything.
We’re just doing it the research way.” TJ



3. Data Validity



Data Validity

- Lack of consensus on how human-animal relationship affects data:
- **Positively** (e.g. reduced stress = better data):

“Even if we could just get them into the anaesthetization chamber a lot more easily. ... it would reduce a lot of stress. ... I mean even stress could sometimes influence research, experimental results.” RM



Data Validity

- **Negatively** via bias

“That’s also kind of important for us because we have to do blind study right. We shouldn’t really know them [rats] at all because ... that might compromise the study. ... if you have a favorite one, then we may give them .. better treats or whatever.” RY



Conclusions

Intervention benefits:

- Shows promise for promoting empathy & compassion
- Reminds us of our moral obligations towards research animals
- Improves learning environment for handling
- Potential to impact large # of people



Conclusions

Challenges:

- Need for explicit discussions regarding variety of variables impacting data and how to balance them with welfare
- Longer term benefits need to be evaluated
- Overcoming barriers within lab cultures



Conclusions

Challenges related to the human-animal relationship:

- Considerations for supporting emotional well-being of those working with animals



A Good Life for Both Animals & Humans?

“And in my mind, I'm so happy that they got to hang out and have what I see as a more positive welfare-filled life than some of the other rats at the facility... . To me, the positive part of the relationship outweighs that feeling of grief every single time.”

Nevene



THANK YOU

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for Alternatives to Animal Testing

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Questions

Submit to the chat box in the
GoToMeeting control panel



Question 1

What were the criteria used for selecting the “Superstar” rats?



Question 2

How can institutions apply the results of your study to train or educate animal users?



Question 3

How is such an intensive approach (animal training etc.) applicable to large scale studies?



Question 4

What was the duration of your study and are there plans to follow-up with participants in the long-term?



Question 5

Can you elaborate on how your results affect or impact compassion fatigue?



Question 6

How do your results affect the integrity of research data and reproducibility?



Question 7

Did you ever consider carrying out a pre and post-intervention survey on empathetic attitudes to see if attitudes changed?



Questions

Submit to the chat box in the
GoToMeeting control panel

The 4th R: Rehoming/Retirement/Release - options for laboratory animal research subjects when the study has ended



OLAW Online Seminar
June 13, 2019

Dr. Lara Helwig, DVM, DACLAM, Brown University