From: Kumble Subbaswamy
To: Crystal Daugherty
Subject: FW: Summary

Date: Friday, July 31, 2020 4:22:12 PM

CONFIDENTIAL

From: Kumble Subbaswamy <swamy@umass.edu>

Date: Friday, July 31, 2020 at 4:21 PM **To:** Mike Malone <mmalone@umass.edu>

Cc: Tricia Serio <tserio@umass.edu>

Subject: Summary

I am summarizing our phone call with the PETA folks. Mike, please edit and amend as you see fit.

The call lasted 45 minutes (the allotted time). I don't have the names of the three attendees handy; Mike please add them. The PETA folks for totally professional and polite during the entire meeting. That is not to understate the philosophical gap between their thinking and university-based scientists. All three PETA attendees have scientific credentials and two of them have done long years of work in industry or university/field. They first introduced themselves, gave their credentials, and their current responsibilities with PETA. Most of the time was spent on the use of non-human primates. Clearly, ever since Novak, we have been under their scrutiny, and they know a lot about us. They first spoke about how the scientific community eventually realized the "lack of return" on the use of chimps (both from the maintenance of colonies and fiscal perspective, and from the lack of translatability of results to humans) and pointed to the closure of various primate centers. Mentioned the shutting down of centers at Harvard (2015), U of Oklahoma (baboon; 2019), an said the University of Washington Primate Center was in "free fall." [I am merely reporting what I remember was said; I am not attesting to these as facts]. Then the attention turned to our continued use of marmosets. They described them as latecomers among the animal models (new world monkeys), and that researchers like them because of their relatively short life span (5-7 years). They said there were serious problems with using marmosets: (1) low supply (therefore being caught in the wild—with its own set of ethical issues); (2) lack of well established standardization (and therefore reproducibility); (3) fragility (prone to marmoset wasting syndrome); (4) considerable mortality and morbidity among laboratory animals; (4) lack of adequate molecular, imaging, and other standard methods (not sure I understand). They were familiar with Dr. Lacreuse's lab. They understand that the short life span is an attraction in studying hormone impact on aging, but feel the lack of translatability (because the marmoset wasting syndrome confounds the very thing the investigator is studying) renders the validity of this model questionable. I pushed back by saying that NIH clearly thinks this research has value or else they wouldn't be funding it. Not unexpectedly, their answer was the animal testing community has a vested interest, protects the use of animal models at all cost, is slow to change, has a great deal of inertia, etc. I said we follow all NIH rules and community guidelines and IACUC policies, and that I can't simply tell our scientists how to do their research. They said they understood, but that there was work going on at well known research universities to find alternatives to animal models wherever possible. They mentioned the Johns Hopkins Center for Alternatives to Animal Testing (https://caat.ihsph.edu/) and a similar

effort at Harvard (https://www.fiercebiotech.com/deals/harvard-astrazeneca-partner-to-replace-animal-testing-organs-on-chips) as efforts we might want to look at. Then they brought up tickborne diseases and whether we used cats and dogs in such research. Mike said we currently didn't. They were interested in antibodies research at UMMS and wondered if we could connect them to Mass Biologics to have them consider recombinant animal-free antibodies research.

They wanted to know whether a next meeting should be scheduled. I mentioned emphatically that we were extremely busy with fall opening, dealing with the pandemic, and that raising these questions with our scientific community would be neither quick nor easy. chimed in with I won't let them off the hook. That ended the meeting. After Mike finalizes this summary, I will schedule a meeting for the three of us.

Thanks,

Swamy

From: Chancellor Kumble Subbaswamy

To: <u>Kumble Subbaswamy</u>
Subject: Fw: Thank you, and follow-up
Date: Monday, August 10, 2020 8:24:54 AM

Just wanted to clear this draft with you, given

's involvement. OK to send?

Thanks, Susan

From: Mike Malone <mmalone@umass.edu> Sent: Monday, August 10, 2020 6:57 AM

To: Chancellor Kumble Subbaswamy <chancellorswamy@umass.edu>

Subject: RE: Thank you, and follow-up

Dear Amy et al.,

Thank you for the follow up and additional background information and the centers at Johns Hopkins and U of Windsor. We will include this in our discussions and considerations of best practices related to our research programs.

Sincerely,

Kumble R. Subbaswamy Chancellor 374 Whitmore Administration Building University of Massachusetts Amherst, MA 01003 phone: (413)545-2211

FAX: (413)545-2328

Michael F. Malone

Vice Chancellor for Research & Engagement Professor of Chemical Engineering University of Massachusetts Amherst

(413) 545-5270

Assistant: Christine Burnett, caburnett@research.umass.edu

COVID-19 Information

UMass: https://www.umass.edu/coronavirus/

Research: https://www.umass.edu/research/covid-19-resources-guidance
Daily Checklist: https://ehs.umass.edu/onsite-personnel-covid-19-checklist

From: Chancellor Kumble Subbaswamy <chancellorswamy@umass.edu>

Sent: Friday, August 7, 2020 5:45 PM **To:** Mike Malone <mmalone@umass.edu> **Subject:** Fwd: Thank you, and follow-up

Mike, Please draft a response for the Chancellor, and send it to me here. Thanks, Susan

From: Amy Clippinger <amyjc@peta.org>
Sent: Friday, August 7, 2020 4:35 PM

To: Chancellor Kumble Subbaswamy; Mike Malone **Cc:** ; Katherine Roe; Dr. Lisa Jones-Engel

Subject: RE: Thank you, and follow-up

Dear all,

Please find below the additional information we promised to send in follow up to our call.

MONKEYS: As a brief summary, on our call, we outlined the NIH's decision to end the use of chimpanzees in research. This decision was driven by a lack of scientific progress made using chimpanzees, as well as the ethical and financial costs. This was the first step by the scientific community towards acknowledging the misguided anthropomorphic rationale that has for decades promoted the use of primates. Increasingly, scientists are moving beyond using Old World monkeys in their research programs (e.g., see here and here), and the use of marmosets is even more illadvised owing to their fragility and susceptibility to disease in captivity, the lack of available and adequate molecular, genomic, and imaging tools, and the impact international capture and trade is having on wild populations. Furthermore, artificially induced, oversimplified versions of human conditions in a laboratory setting do not adequately simulate the complex and variable etiology, symptomatology, and treatment responsivity found in human patients. Marmosets in laboratories cannot mimic the complex genetic, environmental, or epigenetic factors known to influence human health and disease risk. Additionally, fundamental differences in gene expression and protein function, immune system functioning, neurodevelopment, neuroanatomy, and reproductive physiology between humans and marmosets limit the applicability that data obtained from these experiments will have to human neurological diseases. Moreover, critical differences between humans and marmosets in age-related changes in hormone production, age-related neurodegeneration, and tao isoform expression make marmosets a poor model for conditions associated with aging in humans, including Alzheimer's disease and other dementias.

ANTIBODIES: I briefly mentioned on our call that we've seen a lot of interest from the scientific community in improving the quality of antibodies used in research, diagnostics, and therapeutics (see here for summary on our website). We've been working to get recombinant (sequence-defined) antibodies into the hands of researchers, and have been collaborating with various companies, academics, and government organizations, including the US National Toxicology Program (NTP) Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM). We have ongoing expert working group meetings to address remaining hurdles to facilitate wider adoption and, if there is anyone on the UMass team with the expertise and interest in joining these discussions, I can connect you with our expert in this area. My previous email also mentioned our ongoing webinar series — a recording of the 1st webinar in the series is online and the next two have

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been scheduled for September 16 and October 15 .

In addition, we are currently funding two projects to develop recombinant antitoxins (see here for summary on our website). Earlier this year, we published a paper on a recombinant diphtheria antitoxin we developed with the Technische Universität Braunschweig, the UK National Institute for Biological Standards and Control (NIBSC), the World Health Organization, and Public Health England. This group has been in touch with Mass Biologics, which has also developed a diphtheria antitoxin, regarding potential for collaboration. The other project we're funding is for a spider antivenin. Again, we would be happy to schedule a call with UMass experts to discuss recombinant antibodies and antitoxins. I'm also curious to know if UMass has an in-house antibody core facility?

TICKS: As I mentioned on our call, testing related to ticks and ectoparasiticide products is one of our focus areas (see here for summary on our website). We have been working with researchers from the EPA, USDA, academia, and companies to advance methods to rear parasites and test the safety and efficacy of parasite control products. There are alternatives to using animals for rearing and testing in various stages of development; for example, alternatives are more well-established for some tick species while methods for other species and life stages could use further investment for optimization. We saw online that UMass is involved in tick borne disease research and are interested in learning more about the types of parasites and insects (e.g., only ticks, or also fleas and mosquitos?) used and methods for maintenance (e.g., rabbits, membrane systems?). We are available to discuss this topic with your UMass experts at a time that is convenient for you.

You may also be interested in connecting with scientists at centers that focus on alternatives to animal testing, such as the Johns Hopkins University Center for Alternatives to Animal Testing (<u>CAAT</u>) or the University of Windsor Canadian Centre for Alternatives to Animal Methods (<u>CCAAM</u>). We're happy to facilitate introductions if you are interested.

Please let me know if you have any questions.

Kind regards, Amy

From: Chancellor Kumble Subbaswamy < chancellorswamy@umass.edu>

Sent: Tuesday, July 28, 2020 1:01 PM **To:** Amy Clippinger amyic@peta.org

Cc: Katherine Roe <<u>KatherineR@peta.org</u>>; Dr. Lisa

Jones-Engel <<u>LisaJE@peta.org</u>>; Mike Malone <<u>mmalone@umass.edu</u>>

Subject: Re: Thank you, and follow-up

Dear Amy et al.,

Thanks for the helpful conversation. We are sincere in our commitment to best, forward looking practices. We will continue our internal conversations with attention to these. Sincerely,

Kumble R. Subbaswamy Chancellor

374 Whitmore Administration Building University of Massachusetts Amherst, MA 01003

phone: (413)545-2211 FAX: (413)545-2328

From: Amy Clippinger <amyjc@peta.org>
Sent: Tuesday, July 28, 2020 11:56 AM

To: Chancellor Kumble Subbaswamy < chancellorswamy@umass.edu; Mike Malone

<mmalone@umass.edu>

Jones-Engel <<u>LisaJE@peta.org</u>> **Subject:** Thank you, and follow-up

Dear All,

Thank you again for the productive dialog this morning. I think our shared commitment to good science gives us a great foundation for collaboration and advancing research.

I wanted to follow-up quickly today with a link to where you can find the recombinant antibody webinar series that we are co-organizing: https://www.piscltd.org.uk/our-work/antibodies/. If you click on the webinar graphic at the top of this landing page, it has the specifics for registering for the next webinar (September 16th) and the recording and slides for last week's webinar on COVID that I mentioned.

We'll send some additional promised information in the following week.

Kind regards, Amy

Amy J. Clippinger, Ph.D.
Director
Regulatory Testing Department
amyjc@peta.org

From: Chancellor Kumble Subbaswamy

To: Kumble Subbaswamy
Subject: Fw: Thank you, and follow-up
Date: Tuesday, July 28, 2020 12:02:47 PM

FYI. Any response?

--Susan

From: Amy Clippinger <amyjc@peta.org> Sent: Tuesday, July 28, 2020 11:56 AM

To: Chancellor Kumble Subbaswamy <chancellorswamy@umass.edu>; Mike Malone

<mmalone@umass.edu>

; Katherine Roe <KatherineR@peta.org>; Dr. Lisa

Jones-Engel <LisaJE@peta.org> **Subject:** Thank you, and follow-up

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Kind regards, Amy

Amy J. Clippinger, Ph.D.
Director
Regulatory Testing Department
amyjc@peta.org

 From:
 Michelle Goncalves

 To:
 Kumble Subbaswamy

 Subjects
 FW: Thank your and feet

Subject: FW: Thank you, and follow-up

Date: Monday, September 28, 2020 12:33:22 PM

Chancellor, This is Amy's second email, signaling she's going to keep emailing until we respond. Would it be helpful to send something like the message below? (note that she keeps copying

Dear Amy,

We have taken the issues raised seriously and conducted another review of our policies and practices. Based on this review, I am confident that animal models are used in research only when there is no other known approach to address the research question and then only when extensive federal regulations are satisfied. No follow up meeting will be necessary.

Sincerely, Swamy

From: Chancellor Kumble Subbaswamy <chancellorswamy@umass.edu>

Sent: Monday, September 28, 2020 12:10 PM

To: Michelle Goncalves <michelle.goncalves@umass.edu>

Subject: Fw: Thank you, and follow-up

FYAA

--Susan

From: Amy Clippinger amyjc@peta.org
Sent: Monday, September 28, 2020 12:02 PM

To: Mike Malone <<u>mmalone@umass.edu</u>>; Chancellor Kumble Subbaswamy

<chancellorswamv@umass.edu>

Cc: ; Katherine Roe < <u>KatherineR@peta.org</u>>; Dr. Lisa

Jones-Engel <<u>LisaJE@peta.org</u>>

Subject: RE: Thank you, and follow-up

Dear Mike and Swamy,

I'm writing to follow-up on our July 28th call and to schedule a call to continue our discussion.

Please let me know your availability to reconnect, and if it would be best for us to work through Michelle Goncalves again to schedule.

Thank you, Amy

From: Amy Clippinger

Sent: Friday, September 18, 2020 12:28 PM

To: Mike Malone <<u>mmalone@umass.edu</u>>; Chancellor Kumble Subbaswamy <<u>chancellorswamv@umass.edu</u>>

; Katherine Roe < Katherine Roe > Exatherine Roe > Exathe

Jones-Engel <LisaJE@peta.org>

Subject: RE: Thank you, and follow-up

Dear All,

I hope you are well and that UMass had a good start to the Fall 2020 school year.

I wanted to check in on follow-up to our July 28th meeting. Can we schedule a call to discuss plans and decisions you have made?

Thank you, Amy

From: Mike Malone <mmalone@umass.edu>
Sent: Monday, August 10, 2020 12:25 PM
To: Amy Clippinger <amvic@peta.org>

Katherine Roe < <u>KatherineR@peta.org</u>>; Dr. Lisa

 $\label{loss-engel} \mbox{$$J$ones-Engel} < \mbox{$$\underline{LisaJE@peta.org}$} > ; Chancellor Kumble Subbaswamy < \mbox{$$\underline{chancellorswamy@umass.edu}$} > ;$

Mike Malone <mmalone@umass.edu>
Subject: RE: Thank you, and follow-up

Dear Amy,

Thank you for the follow up and additional information on the centers at Johns Hopkins and U of Windsor. We will include this in our discussions and considerations of best practices related to our research programs.

The Chancellor asked me to reply as he is occupied with the reopening of campus for the fall.

Sincerely,

Michael F. Malone Vice Chancellor for Research & Engagement Professor of Chemical Engineering University of Massachusetts Amherst (413) 545-5270

Assistant: Christine Burnett, caburnett@research.umass.edu

COVID-19 Information

UMass: https://www.umass.edu/coronavirus/

Research: https://www.umass.edu/research/covid-19-resources-guidance

From: Amy Clippinger <amyjc@peta.org>
Sent: Friday, August 7, 2020 4:35 PM

To: Chancellor Kumble Subbaswamy < chancellorswamy@umass.edu; Mike Malone

<mmalone@umass.edu>

; Katherine Roe < Katherine Roe > Exatherine Roe > Exathe

Jones-Engel <<u>LisaJE@peta.org</u>>

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Please let me know if you have any questions.

Kind regards, Amy

From: Chancellor Kumble Subbaswamy <<u>chancellorswamy@umass.edu</u>>

Sent: Tuesday, July 28, 2020 1:01 PM **To:** Amy Clippinger amyic@peta.org

Cc: ; Katherine Roe <<u>KatherineR@peta.org</u>>; Dr. Lisa

Jones-Engel <<u>LisaJE@peta.org</u>>; Mike Malone <<u>mmalone@umass.edu</u>>

Subject: Re: Thank you, and follow-up

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Sincerely,

Kumble R. Subbaswamy Chancellor 374 Whitmore Administration Building University of Massachusetts Amherst, MA 01003

phone: (413)545-2211 FAX: (413)545-2328

From: Amy Clippinger <amyjc@peta.org>
Sent: Tuesday, July 28, 2020 11:56 AM

To: Chancellor Kumble Subbaswamy < chancellorswamy@umass.edu; Mike Malone

<mmalone@umass.edu>

Cc: Katherine Roe < <u>KatherineR@peta.org</u>>; Dr. Lisa

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We'll send some additional promised information in the following week.

Kind regards, Amy

Amy J. Clippinger, Ph.D.
Director
Regulatory Testing Department
amyjc@peta.org

From: <u>Chancellor Kumble Subbaswamy</u>
To: <u>Mark Fuller; Crystal Daugherty</u>

Subject: Fwd: follow up

Date: Tuesday, July 21, 2020 8:30:13 PM

FYI

—Susan

From:

Sent: Tuesday, July 21, 2020 8:21 PM **To:** Chancellor Kumble Subbaswamy

Subject: Re: follow up

Excellent progress; thanks for sharing.

Sent from my iPhone

On Jul 21, 2020, at 5:29 PM, Chancellor Kumble Subbaswamy chancellorswamy@umass.edu wrote:

Dear ,

As you can see below, our Vice Chancellor for Research is getting in touch with the PETA scientists about peer institutions from whom we can learn about more enlightened policies and practices as a first step.

Sincerely, Swamy

Kumble R. Subbaswamy Chancellor 374 Whitmore Administration Building University of Massachusetts Amherst, MA 01003 phone: (413)545-2211

phone: (413)545-2211 FAX: (413)545-2328

From: Mike Malone < mmalone@umass.edu>

Sent: Tuesday, July 21, 2020 4:55 PM

To: Amy Clippinger <amvic@peta.org>; Katherine Roe <<u>KatherineR@peta.org</u>>

Cc: Mike Malone < mmalone@umass.edu> **Subject:** Inquiry from UMass Amherst

Dear Drs. Clippinger and Roe,

Chancellor K. R. Subbaswamy shared your contact information with me in my capacity as Vice Chancellor for Research and Engagement at the University of

Massachusetts Amherst.

UMass is committed to promoting research, discovery and innovation at the cutting edge of best practices in the disciplines represented on our campus. We welcome the opportunity to learn from peer R1 doctoral universities on these practices. In particular, we would be grateful to have suggestions for exemplars and potential contacts in the area of non-human primate research from within this group. Our goal is to inform our continuous improvement work in planning, implementation and assessment of our research policies and procedures.

Thank you, in advance, for any information.

Sincerely,

Mike Malone

Michael F. Malone Vice Chancellor for Research & Engagement University of Massachusetts Amherst (413) 545-5270

Assistant: Christine Burnett, caburnett@research.umass.edu

From: <u>Kumble Subbaswamy</u>
To: <u>Mike Malone; Tricia Serio</u>

Subject: Fwd: follow up

Date: Tuesday, July 21, 2020 8:34:14 PM

FYI

Sent from my iPhone

Begin forwarded message:

From:

Sent: Tuesday, July 21, 2020 8:21 PM **To:** Chancellor Kumble Subbaswamy

Subject: Re: follow up

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Sent from my iPhone

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Kumble R. Subbaswamy Chancellor 374 Whitmore Administration Building University of Massachusetts Amherst, MA 01003 phone: (413)545-2211

phone: (413)545-2211 FAX: (413)545-2328

From: Mike Malone < mmalone@umass.edu>

Sent: Tuesday, July 21, 2020 4:55 PM

To: Amy Clippinger amyjc@peta.org; Katherine Roe

< Katherine R@peta.org>

Cc: Mike Malone < mmalone@umass.edu > **Subject:** Inquiry from UMass Amherst

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Thank you, in advance, for any information.

Sincerely,

Mike Malone

Michael F. Malone Vice Chancellor for Research & Engagement University of Massachusetts Amherst (413) 545-5270

Assistant: Christine Burnett, caburnett@research.umass.edu

From: Chancellor Kumble Subbaswamy

To: <u>Kumble Subbaswamy</u> **Subject:** Fwd: Greetings

Date: Monday, February 1, 2021 3:28:07 PM

Attachments: <u>Greetings.msg</u>

As you will see below, the PETA people sent us a long letter (attached) last week, asserting that we are not addressing any of their concerns nor implementing any of their suggested changes. I sent it to Mike Malone for advice about a response. Today, PETA wrote to all of the Trustees, repeating the content of their letter to us and adding that we had not responded. Z forwarded the PETA message to you, President Meehan, and all the PO senior staff

Mike recommends that we not respond to PETA. Shall I, as Mike suggests, tell Z and Sue Kelly that we have discussed PETA's concerns with them at length, and we believe no further response is needed?

Thanks, Susan

From: Mike Malone <mmalone@umass.edu> Sent: Monday, February 1, 2021 3:08:31 PM

To: Chancellor Kumble Subbaswamy <chancellorswamy@umass.edu>

Subject: RE: Greetings

I would say that we have listened to their points in previous correspondence and listened to their concerns and believe that no further response is needed.

Mike

Michael F. Malone

Vice Chancellor for Research & Engagement Professor of Chemical Engineering

University of Massachusetts Amherst

(413) 545-5270

Assistant: Christine Burnett, caburnett@research.umass.edu

Research & Engagement Help Desk:

https://www.umass.edu/research/webform/kuali-help-desk

COVID-19 Information:

UMass: https://www.umass.edu/coronavirus/

Research: https://www.umass.edu/research/covid-19-resources-guidance
Daily Checklist: https://ehs.umass.edu/onsite-personnel-covid-19-checklist

From: Chancellor Kumble Subbaswamy <chancellorswamy@umass.edu>

Sent: Monday, February 1, 2021 2:31 PM **To:** Mike Malone <mmalone@umass.edu>

Subject: Re: Greetings

The PETA people have now written to all the members of our Board of Trustees, repeating the concerns here and adding that the Chancellor has not responded to their latest message.

Please advise.

Thanks, Susan

From: Chancellor Kumble Subbaswamy < chancellorswamy@umass.edu>

Sent: Monday, January 25, 2021 4:18 PM **To:** Mike Malone < mmalone@umass.edu>

Subject: Fw: Greetings

Please advise about who should respond and how.

Thanks, Susan

From: Katherine Roe < Katherine Roe peta.org > Sent: Monday, January 25, 2021 3:54 PM

To: Chancellor Kumble Subbaswamy < <u>chancellorswamy@umass.edu</u>>

Subject: Greetings

Dear Dr. Subbaswamy,

Good afternoon. I hope you are doing well. I am writing on behalf of People for the Ethical Treatment of Animals (PETA) to follow up on our earlier discussions about the use of animals in biomedical research at the University of Massachusetts, Amherst. Please see the attached letter for more details. Thank you.

Sincerely,

Katherine V. Roe Ph.D.

Senior Research Associate Laboratory Investigations Department People for the Ethical Treatment of Animals 501 Front Street Norfolk, VA 23510

KatherineR@peta.org



January 25, 2021

Kumble R. Subbaswamy, Ph.D. Chancellor Office of the Chancellor University of Massachusetts—Amherst 374 Whitmore Building Amherst, MA 01003

Via e-mail: chancellor@umass.edu

Dear Dr. Subbaswamy:

We're writing to share several serious ongoing animal welfare concerns at the University of Massachusetts—Amherst (UMass) and to express our disappointment that our scientists' discussions with you and your research officials—which were brokered by your supporter—were abruptly terminated for what appear to be political reasons having nothing to do with science.

As you know, UMass has accumulated numerous animal welfare violations over the past few years, many involving nonhuman primates. Several UMass alumni and donors contacted PETA to express their concerns about these violations as well as about the university's continued experimental use of nonhuman primates. In July of 2020, three of PETA's staff scientists met with you, Vice Chancellor for Research and Engagement Dr. Mike Malone, and to discuss several ways in which UMass could modernize its biomedical research program, reduce its use of animals in experimentation, and improve overall animal welfare at the university. Despite initial interest and enthusiasm from you and the vice chancellor, you have informed us that UMass will not be addressing any of our concerns or implementing any of our suggested changes.

We urge you to reconsider and to recommence our discussions so that we can work together to improve biomedical research and animal welfare at UMass and alleviate the ongoing concerns of alumni and donors. For your convenience, I'm including below a summary of our expertise and the recommendations that we have made.

PETA Science Team

Currently, PETA Science Consortium International e.V. and PETA affiliates worldwide employ 25 scientists with master's or doctoral

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- PETA Australia
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degrees working on regulatory toxicology and basic research. Our scientists' backgrounds and expertise span a diverse array of fields, including primatology, veterinary medicine, neuroscience, mathematics, toxicology, and molecular biology. Collectively, we work with federal regulatory agencies, pharmaceutical companies, universities and colleges, and other biomedical research institutions to reduce or eliminate their use of animals in experimentation, adopt cutting-edge methodologies, and improve the overall impact of their research. You met with Dr. Amy Clippinger, Dr. Lisa Jones-Engel, and me, Dr. Katherine Roe.

Dr. Clippinger is the president of the Science Consortium and director of PETA's Regulatory Testing Department. She received her Ph.D. in cellular and molecular biology and genetics in 2009 from Drexel University College of Medicine and was a postdoctoral fellow in the Department of Cancer Biology at the University of Pennsylvania from 2009 to 2012. In 2012, she joined the Science Consortium, where she collaborates with industry, academia, and government agencies to promote human-relevant, animal-free toxicity testing approaches. In this capacity, she has organized expert working groups, workshops, and webinars and published on topics including inhalation toxicity testing and eye irritation testing. She is on the editorial board of *Applied In Vitro Toxicology* and *Frontiers in In Vitro Toxicology*, is a member of the Society of Toxicology and past president of the Society of Toxicology's *In Vitro* and Alternative Methods Specialty Section, and has 30 peer-reviewed publications.

Dr. Lisa Jones-Engel is PETA's senior science adviser for primate experimentation and has studied the human-primate interface in Africa and Asia and the primate biomedical facilities of the U.S. for 37 years. She was trained at Cornell University, New York University, and the University of New Mexico. She joined the University of Washington's National Primate Research Center in 2002 as a post-doc, and over the next 14 years, she built an international, multidisciplinary, translational research program, which focused on infectious agents that are transmitted at the porous human-macaque interface. As a senior research scientist, she received more than \$4 million in funding from the National Institutes of Health (NIH), the U.S. Department of Defense, the Defense Advanced Research Projects Agency, and conservation agencies. She has published more than 100 peer-reviewed articles spanning the fields of primatology, virology, epidemiology, microbiology, and conservation. She is the associate editor for diseases in *The* International Encyclopedia of Primatology. In December 2020, Springer Nature published her latest edited volume, Neglected Diseases in Monkeys: From the Monkey-Human Interface to One Health. In 2014, she was awarded a Fulbright scholarship and served as a faculty member in the University of Washington's Department of Anthropology until 2019. Her work, which straddles the field as well as sanctuary, laboratory, and advocacy communities, gives Dr. Jones-Engel an unparalleled understanding of the way stakeholders think about primates.

Dr. Katherine Roe is a senior research associate with the Laboratory Investigations Department of People for the Ethical Treatment of Animals. She earned her bachelor's degrees in biology and psychology from Syracuse University and her Ph.D. in psychology and cognitive science from the University of California–San Diego. After completing a

post-doctoral fellow at Johns Hopkins University, she went on to become a research fellow at the National Institute of Mental Health for eight years. Over the course of her research career, she studied the neural correlates of language and spatial and memory processing, working with children with early focal brain injury, adults and children with schizophrenia, and individuals with Williams syndrome and related genetic disorders. Dr. Roe has more than 20 years of experience conducting brain and neuroimaging research with humans and is an expert at experimental design and data analysis. She has been published in numerous peer-reviewed journals and presented her findings at numerous national and international industry conferences.

During this meeting, these PETA scientists discussed several initial areas in which UMass could modernize its current research program and reduce its use of animals in experimentation. These suggestions are reviewed below:

Initial Recommendations

Eliminate the Use of Nonhuman Primates

UMass has already significantly reduced its use of nonhuman primates, which is commendable. However, a limited amount of research is still being conducted at the university that involves marmoset monkeys. The use of marmosets in biomedical research is extremely problematic, as they are extraordinarily <u>fragile and susceptible to disease in captivity</u>. In just a few years, U.S. Department of Agriculture (USDA) inspectors found issues with three of the marmosets at UMass, including the following:

- The university caused the death of a marmoset because of "thermal injuries" after severely burning the animal as he was recovering from a vasectomy (as described here).
- The university didn't have a communication mechanism in place to ensure that the attending veterinarian was aware of problems regarding the health, behavior, or well-being of the animals, including a marmoset named Pat who was repeatedly observed to be shaky and moving more slowly than usual.
- A marmoset escaped from an acclimation device, and his tail was injured during recapture by UMass staff.

In addition to the welfare concerns associated with using vulnerable marmoset monkeys in experimentation, there are numerous scientific problems associated with their use that severely limit the impact of the research. For example, the fundamental differences in gene expression and protein function, immune system functioning, neurodevelopment, neuroanatomy, and reproductive physiology between humans and marmosets limit the applicability that data obtained from these experiments will have to human neurological diseases. Moreover, critical differences between humans and marmosets in age-related changes in hormone production, age-related neurodegeneration, and tao isoform expression make marmosets a poor model for conditions associated with aging in humans.

Furthermore, artificially induced, oversimplified versions of human conditions in a laboratory setting do not adequately simulate the complex and variable etiology, symptomatology, and treatment responsivity found in human patients. Marmosets in

laboratories cannot mimic the complex genetic, environmental, or epigenetic factors known to influence human health and disease risk. Coupled with the <u>lack of available and adequate molecular, genomic, and imaging tools</u> and the impact that <u>international capture and trade</u> is having on wild populations, continuing to experiment on marmosets is ill advised.

Many cutting-edge research institutes are realizing that the financial costs, ethical considerations, and scientific limitations of research with nonhuman primates make it untenable. For example, the NIH has acknowledged that the use of chimpanzees in biomedical research was not leading to any meaningful scientific progress and decided to end the use of chimpanzees in research. Similarly, Harvard Medical School recognized that its return on the New England Primate Research Center didn't warrant the costs and closed the facility down. Given the extensive financial costs, limited scientific validity, and serious ethical concerns associated with experimenting on marmosets and other nonhuman primates, PETA strongly recommends that UMass terminate any remaining nonhuman primate research at its campus. PETA scientists are willing to discuss available alternatives or connect any researchers currently using nonhuman primates with other investigators to assist in this transition.

Utilize Recombinant Antibodies

Currently, there is a great deal of interest within the scientific community in improving the quality of antibodies used in research, diagnostics, and therapeutics. (See here for a summary of the situation on our website.) We have been working to get recombinant (sequence-defined) antibodies into the hands of researchers and have been collaborating with various companies, academics, and government organizations, including the National Toxicology Program Interagency Center for the Evaluation of Alternative Toxicological Methods. We have ongoing expert working group meetings to address remaining hurdles to facilitate the wider adoption of these antibodies.

In addition, we're currently funding two projects to develop recombinant antitoxins. (See here for the summary on our website.) Earlier this year, we published a paper on a recombinant diphtheria antitoxin that we developed with the Technische Universität Braunschweig, the National Institute for Biological Standards and Control in the U.K., the World Health Organization, and Public Health England. This group has been in touch with MassBiologics, which has also developed a diphtheria antitoxin, regarding the potential for collaboration. The other project that we're funding is for a spider antivenin.

PETA offered to schedule an additional call with UMass experts to discuss recombinant antibodies and antitoxins, to discuss whether the university has an in-house antibody core facilities, and to provide any further assistance that UMass researchers might need in this area.

Modernize Tick-Borne Disease Research

UMass is currently <u>conducting</u> research into tick-borne disease research. Testing related to ticks and ectoparasiticide products is one of PETA's areas of <u>focus</u>. We have been working with researchers from the U.S. Environmental Protection Agency, the USDA,

academia, and companies to advance methods to rear parasites and test the safety and efficacy of parasite control products. There are alternatives to using animals for rearing and testing in various stages of development. For example, alternatives are better established for some tick species while methods for other species and life stages could use further investment for optimization. PETA offered to discuss the tick-borne disease research being conducted at UMass and to help investigators identify any opportunities for adopting non-animal alternatives for their research. One of UMass's federal Animal Welfare Act (AWA) violations involved the use of rabbits for a parasite colony maintenance procedure—thus, this seems like an area in which the university would be eager to engage in discussion.

Implement Higher Animal Welfare Standards and Oversight

As mentioned above, there is a very concerning history of AWA violations at UMass. This becomes even more concerning when you take into consideration that the AWA covers only the most minimal standards of care and doesn't prohibit any experiment on animals, no matter how painful. Moreover, the announced inspections conducted by the USDA occur only once or twice a year and therefore uncover only a fraction of the actual issues. The fact that the USDA has still discovered numerous violations of basic animal care during scheduled visits suggests systemic problems at your animal research facilities. These serious issues need to be addressed.

PETA scientists suggested that you and Dr. Malone take a more active role in monitoring AWA or Public Health Service Act violations occurring at UMass. One of the best ways to improve the conditions of animals being housed at UMass is to ensure that care providers are held accountable for errors and that missteps are immediately and properly documented and corrected. By touring the laboratory facilities and requiring that all animal welfare violations be reported to your office, you can substantially minimize future violations at UMass.

Establish a Center for Non-Animal Research Alternatives

Many high-profile research universities have established research centers focused on developing novel non-animal research tools and methods. These centers receive ample public and private funding and attract cutting-edge researchers, graduate students, and undergraduate students—something we think UMass would like to continue to do.

PETA recommended that UMass consider connecting with scientists at centers that focus on the development and use of alternatives to animal testing, such as the Johns Hopkins University Center for Alternatives to Animal Testing or the University of Windsor Canadian Centre for Alternatives to Animal Methods.

This is only an initial list of suggestions that UMass might implement that would benefit both science and animals. We had hoped that our meeting with you would be one of several productive discussions that would result in significant improvements to the quality of research conducted at UMass.

Given the history of animal welfare violations at the university, the well-documented limitations of animal experiments, and the concerns of UMass alumni and donors, it is inconceivable that no improvements are needed at UMass. We hope you will accept our invitation to reopen discussions.

Sincerely,

Katherine V. Roe, Ph.D.

KAR.

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