Agricultural Animal Bioethics Teaching Workshop

June 4-6, 2017

Crowne Plaza Indianapolis, IN

https://vet.purdue.edu/CAWS/bioethics

PURDUE UNIVERSITY

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Background

The Agricultural Animal Bioethics Teaching workshop is one of the outcomes of a funded USDA Higher Education Challenge grant proposal – (Candace Croney (PI), Alan Beck (Co-PI), Raymond Anthony (Co-PI), Ray Stricklin (Co-PI), Janice Siegford (Co-PI), Janice Swanson (Co-PI and Gary Varner (Co-PI). The goal was to develop an integrated curriculum for teaching animal bioethics: farm animal welfare, agricultural environmental ethics, and rural societal issues based on a cross-disciplinary pedagogy.

Program Goals

- Develop a series of educational modules and case studies in Agricultural Animal Bioethics that complement and strengthen existing courses in animal welfare, contemporary issues and sustainable agriculture
- Provide educators with the pedagogical tools and support they need to effectively deliver the curriculum content.
    - Workshops will be developed to 1) show faculty how to adapt and incorporate the materials to meet specific needs, and 2) explore innovative forms of content delivery and evaluation of undergraduate students.
    - An interactive, dynamic website will be developed to provide resources and instructional support for faculty teaching agricultural animal bioethics, such as templates for course development produced by faculty during the workshops.

Agenda

Sun, June 4th

6:30-7:30 pm Registration and dinner

7:30-9:30pm **Program start:**
Welcome; overview of Challenge Grant Goals and goals of conference (Candace Croney, Ray Stricklin)
Self-introductions of conference attendees, including teaching experience and reasons for interest in bioethics (1 slide each to be submitted before start of conference)

Monday, June 5th

7:30-8:30am Breakfast

8:30-8:45 Introduction of late arrivals

8:45-9:30 Overview of bioethics topics: importance to animal agriculture and veterinary medicine (Candace Croney and Ray Stricklin)
Challenges in teaching ag animal bioethics
Review participant themes; discussion

9:30-10:15 Addressing challenges; standardizing curriculum
Overview of lectures, modules, goals (Janice Siegford, Janice Swanson)
(tie back to developed curriculum; discussion and feedback)
Tailoring curriculum to meet needs: compare with participants; syllabi

10:15-10:30 Break

10:30-12:00n Teaching bioethics in ag and vet sciences (mock classroom) & breakout groups (1 philosopher and 1 scientist (Co-PI/group)

- Understanding basics of moral philosophy and translating to bioscience students (goal setting, how much detail, how do you effectively convey these and demonstrate application (Gary Varner, Candace Croney, Ray Stricklin)
- Reviewing and delivering basic concepts related to sustainability (Paul Thompson, Ray Anthony, Janice Swanson)

12:00-1:00pm Working lunch; summary of morning activities

1:00-2:30 Teaching bioethics in ag and vet sciences (mock classroom) & breakout groups (1 philosopher and 1 scientist Co-PI/group)

- Understanding basics of moral philosophy and translating to bioscience students (goal setting, how much detail, how do you effectively convey these and demonstrate application? (Gary Varner, Candace Croney, Ray Stricklin)
- Reviewing and delivering basic concepts related to sustainability (Paul Thompson, Ray Anthony, Janice Swanson)

June 5, cont.

2:30-3:30	Implementing effective bioethics curriculum: deliberation vs debate (Dane Scott)
3:30-3:45	Break
3:45-5:00	Utilizing moral deliberation/ethics assessment; case study (Candace Croney, Ray Anthony
5:00-5:15	Day 1 evaluations (Chanda Ebert)
6:00	Dinner on your own

Tuesday, June 6th

7:30-8:30am	Breakfast
8:30-9:15	Fostering and facilitating productive student discussions (Dane Scott)
9:15-10:30	Mock classroom breakout exercises (Dane Scott, Ray Anthony, Paul Thompson) • Enviropig • Aquabounty
10:30-10:45	Break
10:45-11:15	Evaluating students; effective assignments (Candace Croney, Paul Thompson) and all Co-PIs); extension applications
11:15-12n	Breakout groups: Syllabus sharing and peer feedback; extension applications (Paul Thompson)
12:00-1:00p	Working lunch; (tips for small and large group teaching
1:00-2:15	Workshop curriculum integration into course syllabi; peer feedback and discussion
2:15-2:45	Day 2 evaluations and feedback (Chanda Ebert)
2:45-3:00	Summation of conference (Ray Stricklin)
3:00	Close and thanks to all attendees

Project PIs

Candace Croney, Purdue University, PI
Ray Anthony, University of Alaska Anchorage, Co-PI
Alan Beck, Purdue University, Co-PI
Janice Siegford, Michigan State University, Co-PI
Ray Stricklin, University of Maryland
Janice Swanson, Michigan State University, Co-PI
Gary Varner, Texas A&M University, Co-PI

Workshop Facilitators

Dane Scott
Paul Thompson

Program Evaluator

Chanda Ebert

Postdoctoral Coordinator

Amy Bauer

Participants

Angela Arenas	Madonna Benjamin	Olga Bolden Tiller
Rachel Dennis	Dörte Döpfer	Marisa Erasmus
Bethany Funnel	Brianna Gaskill	Kelly George
Kamilah Grant	Julia Herman	Nancy Ing J.
Scarlett Kingsley	Tammi Krecek	Lacey Johnston
Maja Makagon	Trent McEvers	Erdoğan Memili
Donald Mulvaney	Katy Proudfoot	Yolande Seddon
Julie Smith	Stephen Smith	James Templeman
Cindy Tian	Eric Vanzant	Cynthia Wood

Personnel

Project PI and Co-PIs

Dr. Candace Croney

Professor of Animal Behavior and Well-being
Depts of Comparative Biology and Animal Sciences
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Dr. Candace Croney is director of Purdue University's Center for Animal Welfare Science and associate professor of animal behavior and well-being in the departments of Comparative Pathobiology and Animal Sciences. She has a PhD in animal sciences from The Pennsylvania State University, USA. Following postdoctoral training at the University of Maryland, College Park, she went on to serve as Assistant Director of Conservation Education at the American Zoo and Aquarium Association and has held faculty appointments in Animal Sciences and Preventive Medicine at Oregon State University and The Ohio State University before joining the faculty at Purdue University.

Her research, teaching and outreach efforts focus on the interactions between animal behavior, cognition and well-being, the effects of rearing environments and enrichment on animal behavior and welfare, the ethical implications of animal care and use decisions, and public perceptions of animal agriculture.

Her research has been featured in national and international broadcast programs by National Geographic, the BBC, and their affiliates.

She serves as scientific advisor on animal welfare to numerous groups, including the American Humane Association, Bob Evans Farms, Cargill, McDonald's, Merck, MARS Pet Care, and Target.

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Name: Candace Croney **University: Purdue University**

Key Teaching Activities/Interests Relevant to Bioethics: I teach a graduate level course in ethical issues and animal welfare and lecture son animal welfare and ethics in agricultural science and veterinary medical courses. I also conduct research on the social and ethical implications of animal care and use decisions and policies.

Previous or anticipated challenges: Getting students engaged on ethics of animal use; facilitating discussions that are productive and potentially move people toward problem solving rather than polarized, biased debates; overcoming disciplinary prioritization of animal welfare science over ethics

Your expectations from this workshop: Learning new strategies; improved understanding of the challenges in animal bioethics teaching; improving our curriculum and instructor support; building a stronger network of educators on the subject

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Dr. Ray Anthony

Professor of Philosophy
University of Alaska Anchorage
ADM 260

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Raymond Anthony is Professor of Philosophy at the University of Alaska Anchorage and specializes in environmental, food, animal and agricultural ethics, and ethical theory and the philosophy of technology. He has been at UAA since 2005 and previously taught at Iowa University and the University of British Columbia. Currently, he is pursuing values-aware research in global food security, sustainability, animal welfare and climate ethics. He serves as Ethics Advisor for the American Veterinary Medical Association's Animal Welfare Committee and Panels on Euthanasia, Humane Slaughter and Depopulation.

You may find more information about his research, teaching and service at:
https://alaska.digication.com/raymond_anthony_professor_of_philosophy/Welcome/published

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Name: Raymond Anthony **University: University of Alaska Anchorage**

Key Teaching Activities/Interests Relevant to Bioethics: I teach ethics, environmental ethics and philosophy classes, which include content related to the intersection of food-animal-environmental-agricultural ethics

Previous or anticipated challenges: Exciting students from different disciplines to appreciate the importance of the relationship between science and ethics in their deliberations and acting on this understanding (and the diversity of value positions) when considering how to treat food animals and the environment. Staying head of technological or regulatory solutions as the dominant way to respond to food related issues

Your expectations from this workshop: Learn new strategies for discourse and deliberation in a multidisciplinary climate. Understand how conceptions of risk is evolving in the sciences

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Dr. Janice Siegford

Department of Animal Sciences
Michigan State University
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Dr. Siegford is an associate professor in the Animal Behavior and Welfare Group in Michigan State University's Department of Animal Science. Her education combines training in animal welfare (postdoc), neuroscience (PhD), and zoology (MS) with science communication (BS), which allows her to approach questions related to understanding quality of life for domestic animals from a variety of perspectives and to convey this information to students and stakeholders. Dr. Siegford's research examines the impacts of management practices and environment on the behavior and welfare of production animals. Dr. Siegford is currently working with colleagues to relate the social behavior of group-housed pigs to their genotypes in order to improve welfare through both selection and management. Another of her projects examines how laying hens adapt individually and as flocks to alternative aviary housing systems. Dr. Siegford also works to develop non-invasive, automated methods for collecting behavior and welfare data from individual animals in their home environments. In addition to her research, Dr. Siegford teaches courses in animal welfare and behavior using a learner-centered approach. She currently teaches tow undergraduate face-to-face courses (Applied Animal Behavior and Companion Animal Biology and Management) and a graduate online course on Animal Welfare Assessment. She assists with instruction and small group facilitation for the Ethical and Animal Welfare course in MSU's College of Veterinary Medicine and is an organizer for the annual Intercollegiate Animal Welfare Judging and Assessment Competition.

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Name: Janice Siegford **University: Michigan State University**

Key Teaching Activities/Interests Relevant to Bioethics: Teach graduate level welfare course, assist in vet ethics and welfare course, teach companion animal course. Always interested in conveying ethics—what 'should' we do when talking about those animals

Previous or anticipated challenges: Framing issues with enough complexity to dig into ethical issues, assessing responses to ethical assignments, and avoiding jargon

Your expectations from this workshop: Practice using materials, connect with likeminded colleagues to share teaching content and strategies.

W. Ray Stricklin

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College Park, MD 20742
301-405-1382

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W. Ray Stricklin has been involved in animal welfare-related teaching, research, and policy activities for over 25 years. His past research focused primarily on social and spacing behavior of animals. More recent research involved the study of pain in cattle as monitored by electroencephalogram (EEG). The research of his graduate students has spanned outside domestic food animals and included wild animals in natural settings as well as captive wild animals. He helped write the "Guide for the Care and Use of Agricultural Animals in Agricultural Teaching and Research," and he contributed a section to the PHS-NIH "Institutional Animal Care and Use Committee Guidebook." He has served on the boards of the Scientists Center for Animal Welfare, the International Society of Applied Ethology and the American Society of Animal Science. He has served on over 30 animal care program assessment teams at university, government and industry institutions in service to the "Association for the Assessment and Accreditation of Laboratory Animal Care, International." He has lived and served on faculty of universities in Canada and Sweden. The NE-American Society of Animal Science recognized him as the 1985 "Outstanding Young Researcher" and the 2005 recipient of the "Distinguished Service Award." He has served as assistant dean in the College of Agriculture and Natural Resources and chair of the university animal care and use committee. The University of Maryland Center for Teaching Excellence has recognized him with a Certificate of Teaching Excellence (1997), as a Lilly Fellow for Teaching Excellence (2002), and as a Phillip Morrill Presidential Scholars Faculty Mentor (2005). His recent teaching activities have focused on a senior-level course entitled "Animal Welfare and Bioethics" and a University Honors course entitled "Applied and Cognitive Ethology: From Animal Thinking to Animal Feelings".

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Name: *W. Ray Stricklin* **University:** *Maryland, College Park*

Key Teaching Activities/Interests Relevant to Bioethics:

ANSC453(Animal Welfare and Bioethics)

HONR238F(Applied & Cognitive Ethology)

ASAS 2017 abstract: Workshop on Teaching Bioethics in Animal Agriculture: Outcomes for Faculty in Animal Science and Veterinary Medicine.

ASAS 2017 abstract: Are There Only 2Rs in Agricultural Animal Research and Production?

Previous or anticipated challenges:

I have recently been challenged regarding the question, "What year should ethics be introduced in the academic program, i.e., Freshman vs. upper-level?"

Your expectations from this workshop:

Networking, share ideas, gain new insights in how one thinks about and incorporates ethics in teaching activities.

Dr. Janice Swanson

Professor
Department of Animal Science
Michigan State University

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Janice Swanson is professor and chair of the Department of Animal Science at Michigan State University. She received a PhD from the University of Maryland in Applied Ethology in 1988, and MS and BS in animal science from the University of Connecticut. Swanson's career includes five years as a technical information specialist in the U.S.D.A. Animal Welfare Information Center and 15 years as a faculty in the Department of Animal Science and Industry at Kansas State University. At KSU, she taught courses in animal behavior and welfare, conducted outreach, served as director of the department's international program, and as interim department head. In 2007 Janice assumed the position of professor and Director of Animal Welfare at MSU to coordinate outreach, teaching and research in the area of animal welfare with a focus on social responsibility in the food system. She is a member of the MSU Animal Behavior and Welfare Group and has been serving as the chair of the Department of Animal Science since 2010. In addition to her administrative and academic responsibilities in teaching, research and extension, Janice has provided scientific service to government, industry and scientific animal welfare advisory committees including: the United Egg Producers, McDonalds, Food Marketing Institute, Bob Evans, Darden, Leprino Foods and Tysons. She was co-chair of the scientific committee leading to the third edition of the FASS Guide for the Care and Use of Agricultural Animals in Research and Teaching, chairs the taskforce for the annual review and revision of the Michigan Generally Accepted Agricultural and Management Practices for the Care of Farm Animals administered under the Michigan Right to Farm Act, and served as the scientific co-director of the Coalition for Sustainable Egg Supply Project.

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Name: Janice C. Swanson **University: Michigan State University**

Key Teaching Activities/Interests Relevant to Bioethics: I teach a senior level required course in ethical issues and animal agriculture. My position at MSU is to provide support/ programming in research, teaching and extension/outreach on issues of animal welfare and social sustainability in the food system.

Previous or anticipated challenges: One of the more vexing challenges is inspiring students to conduct "deeper dives" to search, identify and examine the validity of evidence utilized in their deliberations about ethical issues.

Your expectations from this workshop: Learning from others, generating a living-network of instructors delivering ethics curriculum, and receiving helpful feedback on our curriculum!

Dr. Gary Varner

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Gary Varner wrote one of the first dissertations on environmental ethics and has since published three books and over 50 shorter pieces on related topics, including hunting, animal agriculture and human nutrition, medical research, cloning, and pet ownership, as well as philosophical issues associated with the National Environmental Policy Act, the Endangered Species Act, and the property takings debate. His 2012 book, *Personhood, Ethics, and Animal Cognition* (Oxford University Press) develops an approach to animal ethics grounded in the two-level (or "Kantian") utilitarianism of R.M. Hare. His current book project, *Sustaining Animals: Envisioning Humane, Sustainable Communities* (forthcoming from Oxford) will apply the approach to various issue areas, including animal agriculture, pets and working animals, medical research on animals, and wildlife and ecosystem management.

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Name: Gary Varner **University:** Texas A&M

Key Teaching Activities/Interests Relevant to Bioethics: My research areas are environmental ethics and animal ethics. I regularly teach in both areas at the undergraduate and graduate levels.

Previous or anticipated challenges: Facilitating class discussions and knowing enough about the related science.

Your expectations from this workshop: I *hope* that it will be useful to participants!

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Workshop Facilitators

Dane Scott

Director, Mansfield Center
University of Montana
Missoula, Montana

Dane Scott is Director of Mansfield Program in Ethics and Public Affairs and Associate Professor of Ethics in the Department of Society and Conservation in the College of Forestry and Conservation, at The University of Montana. He received his Ph.D. in philosophy from Vanderbilt University and has a BS in soil science from the University of California-Riverside. Scott has been at UM since 2006. Scott's research focuses conservation ethics and ethical issues arising from the use of emerging technologies to address environmental problems, particularly biotechnology and climate engineering. Scott has been the principle investigator on two successfully completed National Science Foundation projects: "The Ethics of Geoengineering: Investigating the Moral Challenges of Solar Radiation Management," and "Debating Science: A New Model for Ethics Education for Graduate Students in Science and Engineering."

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Name: Dane Scott University: University of Montana

Key Teaching Activities/Interests Relevant to Bioethics: Ethics and Animal Biotechnology

Previous or anticipated challenges: Uncomfortable silences

Your expectations from this workshop: Interesting back-and-forth discussions

Paul Thompson

Professor, Kellogg Chair in Agricultural, Food and Community Ethics
Michigan State University
East Lansing, MI

Paul B. Thompson holds the W.K. Kellogg Chair in Agricultural, Food and Community Ethics at Michigan State University. He received a Ph.D. in philosophy from Stony Brook University in 1980 and has held faculty appointments at Texas A&M University (1981-1997) and Purdue University (1997-2003) before joining the Departments of Philosophy, Community Sustainaility and Agricultural Food and Resource Economics at MSU in 2003. Thompson is the author of over 200 journal articles and book chapters, mostly focused on ethical issues and environmental impacts in global, regional and local food systems, along with risk analysis and the foundations of sustainability science. He is a two-time winner of the Agricultural and Applied Economics Association Award for Excellence in Communication and his book *From Field to Fork: Food Ethics for Everyone (*Oxford University Press) was selected Book of the Year for 2015 by the North American Society for Social Philosophy.

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Name: Paul B. Thompson **University: Michigan State University**

Key Teaching Activities/Interests Relevant to Bioethics: I teach in philosophy and environmental studies at MSU. For philosophy, I teach a course dedicated to animal ethics, while in environmental studies I teach courses on the theoretical foundations of sustainability

Previous or anticipated challenges: The biggest challenge I face with the animal courses I teach is coping with the extreme range of ability and willingness to consider philosophical questions among different undergraduates. I find it difficult to introduce material appropriate for an upper division course in philosophy.

Your expectations from this workshop: See old friends; make some new ones.

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Program Evaluator

Dr. Chanda Elbert

Associate Professor
Agricultural Leadership, Education and Communication
Texas A&M University
College Station, TX 77843

- Chanda D. Elbert received her Ph.D. in Agricultural and Extension Education from The Pennsylvania State University in 2000. She completed her MS degree in Agricultural Leadership, Education and Communications from the University of Nebraska in 1996, and received her BS. degree in Agricultural Business Management from Southern University A&M College in 1995. She joined the Department of Agricultural Leadership, Education, and Communications at Texas A&M University (TAMU) in 2000. Dr. Elbert has developed and taught university courses in women's leadership, leadership theory, multicultural leadership, program evaluation and organizational accountability in which she has aligned her research in those areas. She has taught and developed program evaluation to undergraduate and graduate students. She has also worked in program evaluation on grants with various institutions since 2003.
- She has recently served as a co-investigator on a grant focused on women in the sciences, technology and engineering fields with women scientists and researchers at historically black colleges and universities. Additionally, she has developed a peer mentoring program and curriculum workshop guidelines for women in sciences and engineering. These grants promote gender equality by enabling the empowerment of women, especially in higher education. She has also received funding to develop mentoring programs for women in the College of Agriculture and Life Sciences at TAMU. Dr. Elbert collaborates with the Department of Multicultural Services in developing courses to promote multicultural scholars in leadership education. Dr. Elbert was the faculty recipient for the 2014 Women's Progress Awards from the Women Leadership Forum at Texas A&M University. Additionally, she works with the student affairs department to develop curriculum involving college women to include theory based leadership into their leadership programs. In 2013, she was nominated and selected to participate in the Advancing Theories of Women in Leadership Academic Colloquium which focuses on theory building and the impact of women as future leaders in all fields.

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Name: Chanda Elbert **University: Texas A&M University**

Key Teaching Activities/Interests Relevant to Bioethics: Program Evaluation and Organizational Accountability and Leadership Theory

Previous or anticipated challenges: Learning more about Bioethics and Animal Welfare

Your expectations from this workshop: Learning more about Bioethics and gathering useful data to help with the workshop

Overview

- Teaching Activities
  - Program Evaluation and Organizational Accountability
  - Leadership Theory
  - Multicultural Leadership
  - Women in Leadership
  - Social Capital and Identity Development

Postdoctoral Coordinator

Dr. Amy Bauer

Postdoctoral Researcher
Center for Animal Welfare Science
Department of Comparative Pathobiology
Purdue University College of Veterinary Medicine

Amy Bauer received her Bachelor of Science degree in Zoology from Michigan State University in 1995 and her DVM from Michigan State University in 1999. During veterinary school she completed externships at Brookfield Zoo/the Chicago Zoological Society, the Duke University Primate Center (now Duke Lemur Center) and Midwest Bird and Exotic Animal Hospital. She carried her interest in exotic animal medicine into practice at Roseland Animal Hospital in South Bend, Indiana from 1999 to 2011. While in practice, she developed interests in zoonoses in the context of the human-animal bond, infectious disease ecology, and conservation biology. During this time she also volunteered in the lab of Dr. Jessica Hellmann at the University of Notre Dame assisting in research utilizing butterflies as models of genetic response to climate change. After serving a semester as an adjunct faculty member in a training program for veterinary technicians, she came to Purdue University to pursue a PhD in comparative epidemiology and public health. During this time, Dr. Bauer was a teaching assistant in veterinary comparative anatomy, served as a tutor in Purdue College of Veterinary Medicine's case-based learning course, and taught her research to 8th grade science students through the Purdue GK-12 program. She completed her doctoral studies in December of 2015. Dr. Bauer has remained at Purdue as a post-doctoral researcher in the lab of Dr. Candace Croney where she applies her epidemiological training to the welfare of dogs in commercial breeding facilities.

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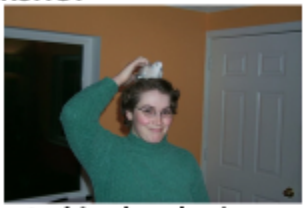

Name: Amy Bauer University: Purdue University

Key Teaching Activities/Interests Relevant to Bioethics: I am interested in developing a One Health focused curriculum for pre-health professions students. Central to the concept of One Health is the interdependence of human, animal, and ecosystem health. Bioethics is an essential topic when discussing this intersection.

Previous or anticipated challenges: The course I am currently developing is an introduction to population health. I anticipate challenges in presenting bioethics in a way that balances both the individual and population perspectives, particularly as I have limited formal training in bioethics.

Your expectations from this workshop: I am hoping to learn more about the pedagogical aspects of bioethics.

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Participants

Dr. Angela Arenas

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Dr. Arenas is an Assistant Professor in the Department of Veterinary Pathobiology, College of Veterinary Medicine at Texas A&M University. She is a Board Certified Anatomic Pathologist with over fifteen years of experience in research and capacity building of zoonotic and transboundary infectious diseases. Her research interests focuses in the development of improved vaccines against brucellosis. More recently, her research efforts have also been directed towards the development of improved diagnostic tools that could be used under resource limited settings. Dr. Arenas has a strong interest in "Global One Health" that is supported by continued and on-going international capacity building and research collaborations in multiple regions around the world including South America, Sub-Saharan Africa and the Middle East. Multiple Federal agencies and private organizations including NIH, NIH Fogarty, USDA-NIFA and DHS are currently funding her research and training programs. Dr. Arenas participates in the instruction of graduate and veterinary students and in the areas of vaccinology and anatomic pathology.

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Name: Angela Arenas **University: Texas A&M University**

Key Teaching Activities/Interests Relevant to Bioethics: Instruction to Graduate and Professional students in the area of vaccinology, pathology and Select Agents.

Previous or anticipated challenges: Use of companion animals for studies involving euthanasia.

Your expectations from this workshop: Learn how to incorporate bioethics topics into vaccinology, hopefully in a way that is interesting and appealing to students.

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Dr. Madonna Benjamin

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Dr. Madonna Benjamin: Assistant Professor, Swine Extension Veterinarian, Michigan State University, has supervised and trained stakeholders in positive swine handling, humane and alternative euthanasia, pathogen biocontainment, biosecurity and dispersion concepts, and has lead response teams in disaster depopulation and disposal. Madonna has practiced livestock production medicine and welfare prior to joining Michigan State University and has collaborated on (Canadian) National Swine Farm – Level Welfare Assurance Program and is a State Advisor for the National Pork Board – Pork Quality Assurance Program and the Swine Health Committee-FAD Preparedness. Madonna will contribute as a lecturer within the Michigan State University, College of Veterinary Medicine, Agriculture Animal Welfare and Bioethics course.

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Name: Madonna Benjamin **University: Michigan State University**

Key Teaching Activities/Interests Relevant to Bioethics:

I am a lecturer at MSU on livestock welfare and as I'm working on ACAW certification, I suspect that this certification will induce there more opportunities for MSU on-line animal welfare course development and lecture in animal ethics.

Previous or anticipated challenges:

I have followed Bernard Rollins for many years as veterinary practitioner. Initially, I found his arguments on livestock production, uncomfortable.

Your expectations from this workshop:

To contribute to MSU-CVM bioethics and welfare course.

To expand discussion and study on animal bioethics.

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Dr. Bolden-Tiller holds a BS degree in Agricultural Sciences (Animal Sciences) from Fort Valley State University (1997) and a PhD degree in Animal Sciences (Reproductive Biology) from the University of Missouri- Columbia. Dr. Bolden-Tiller trained at the University of Texas-MD Anderson Cancer Center as an NIH Post-Doctoral Fellow in Reproductive Biology (2002-2005). Prior to obtaining her current position, Dr. Bolden-Tiller served as the Coordinator for the Animal, Poultry and Veterinary Sciences Program and Assistant Department Chair. Dr. Bolden-Tiller directs/has directed several high school and undergraduate summer programs since 2009. In addition to her administrative and teaching duties, Dr. Bolden-Tiller's current research program entails elucidating the molecular mechanisms of testicular function in rodents and ruminants and if funded by USDA, NSF and AALGA. She has served as a research mentor for over 50 high school, graduate and undergraduate students. She is the author/co-author of numerous of refereed journal articles, conference proceedings and books and is an active member of numerous professional societies. She has received several awards, including the TU College of Agriculture, Environmental and Natural Sciences' Faculty Performance Award for Service (2008, 2017) and Teaching (2010) as well as the Russell Brown Distinguished Scientist Award (2013). Among several administrative and academic fellowships, she is among the inaugural cohort of the NSF/OURS (Opportunities for UnderRepresented Scholars) Fellows as well as an alumnus of the Lead 21 Program (2014) and in 2016, she completed the 2016 Fielding/Conclave Leadership Academy held in conjunction with the STEM Women of Color Conclave.

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Name: Olga Bolden-Tiller **University:** Tuskegee University

Key Teaching Activities/Interests Relevant to Bioethics:

- APSC 100: Orientation to Animal, Poultry and Veterinary Sciences
  - Animal Bioethics
  - Lab Animal Research
- APSC 201: Introduction to Animal, Poultry and Veterinary Sciences
  - Animal Handling and Safety
  - What is sustainable agriculture?
- APSC 503: Reproductive Physiology
  - Reproductive Behavior

Previous or anticipated challenges: Lack of knowledge related to use of animals beyond companionship

Your expectations from this workshop: Obtain ideas for case studies for Freshmen and advanced students and ideas to "interest" students in animal welfare pertaining to agricultural animals

Dr. Rachel Dennis

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Rachel Dennis **University of Maryland**

Key Teaching Activities/Interests Relevant to Bioethics:

Extension workshops, informational materials and curricula for Animal and Poultry Well-being.

Regular guest lecturer on Animal and Poultry Well-being topics in production and academic courses

Previous or anticipated challenges:

Establishing open-minded, civil and thoughtful dialog around the interconnection of the ethical and biological aspects of animal and poultry well-being

Students'/Stakeholders' have already made up their mind or see it as a political issue making it contentious and difficult to

Your expectations from this workshop:

To workshop useful approaches to teaching welfare topics to a variety of backgrounds, and maintaining open-mindedness and civility

Establishing novel tools to scaffolding approaches and higher-order integration

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Dr. Dörte Döpfer

Associate Professor
Food Animal Production Medicine Group
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A veterinarian, epidemiologist and microbiologist by training Dörte Döpfer has worked in bovine clinics, taught infectious diseases as an assistant professor at Utrecht University/The Netherlands and worked as a veterinary epidemiologist at the Quantitative Veterinary Epidemiology Group/Division of Infectious Diseases/Animal Sciences Group Wageningen UR/Lelystad/The Netherlands. Since Summer of 2008, she became an assistant professor in the Food Animal Production Medicine Group of the School of Veterinary Medicine at the University of Wisconsin in Madison, Wisconsin, USA. Dörte was promoted with tenure to become Associate Professor for research with tenure in her department starting December of 2013. She is currently working on mathematical models for infectious diseases specializing in complex host-pathogen interactions and transmission dynamics of infectious diseases, spatial modeling, food safety, emergence of antimicrobial resistance, prediction models for rare events, Global Health and farm animal production medicine, disease surveillance, and causal network analysis. Dörte has participated in international expert groups for WHO, VLA/UK and other EU Member States.

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Name: Dörte Döpfer **University: University of Wisconsin in Madison**

Dr.

Key Teaching Activities/Interests Relevant to Bioethics:

Introduction to Veterinary Ethics course for 1st, 2nd and 3rd year veterinary students

Previous or anticipated challenges:

Students do not consider ethics a priority for their training unless practice-like cases are discussed

Your expectations from this workshop:

Exposure to a variety of approaches to teaching ethics and discussions regarding didactics for bioethics

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Marisa Erasmus

Assistant Professor
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Marisa Erasmus is an Assistant Professor in the Department of Animal Sciences at Purdue University. Marisa completed her bachelor's degree in animal biology and her master's degree in animal and poultry science at the University of Guelph in Ontario, Canada. She earned her doctoral degree in animal science from Michigan State University. Following her PhD work, she worked as a research assistant at Michigan State University studying brain activity in relation to fearfulness in turkeys and co-instructing courses in ethics and animal welfare.

Marisa's teaching and research goals are to address welfare challenges and inspire students to become interested in animal behavior and welfare. As part of her teaching activities, Marisa emphasizes the application of science-based approaches to measure animal behavior and welfare, and teaches students how to critically evaluate the important issues in animal welfare. Her extension and applied research activities focus on generating science-based methods for objectively assessing animal welfare, and understanding how management and environmental factors influence animal behavior and welfare.

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Name: Marisa Erasmus **University: Purdue**

Key Teaching Activities/Interests Relevant to Bioethics:
- ANSC 40400 Animal Welfare
- ANSC 59500 Advanced Animal Welfare Assessment

Previous or anticipated goals and challenges:
- Integrating bioethics into assignments and coursework
- Helping students identify, define and communicate ethical views regarding animal use
- Providing students with tools to deliberate ethical issues in animal agriculture

Your expectations from this workshop:
- Develop tools for designing course assignments and methods for student assessment pertaining to bioethics
- Clearly describe the differences and overlap among ethics, science and animal welfare so that students will be able to do the same

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Dr. Bethany Funnell

Clinical Assistant Professor of Bovine Theriogenology
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Bethany Funnell obtained her DVM from Purdue University (PVM 2004), and entered practice at the University of Minnesota North Central Research and Outreach Center (NCROC) as the coordinator for the Reproductive Biotechnology Center and herd health veterinarian for the 250 head research herd housed at the NCROC facilities. In 2014, Funnell returned to Purdue University as a clinical assistant professor in the Bovine Theriogenology/Production Medicine section. Her main interest is in maximizing reproductive efficiency of the bovine female, through management of physiological and environmental factors. Funnell's current teaching responsibilities include clinical teaching of 4th year DVM students, as well as well as some didactic (ruminant theriogenology) and lab based teaching of the 1st through 3rd year veterinary students (25 hrs student contact time annually). Current curricular needs at PVM have prompted Funnell to participate in teaching the process of moral deliberation and discussions around animal welfare science.

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Name: Bethany Funnell **University: Purdue University**

Key Teaching Activities/Interests Relevant to Bioethics:

2017 PVM Curricular Revision: Applied Ethical Reasoning course (proposed)

Possible Animal Welfare Science course

Previous or anticipated challenges:

New course, have not taught/facilitated discussion around ethics, new territory

Your expectations from this workshop:

To gain exposure to and comfort with initiating and facilitating quality discussion within a diverse group regarding contentious issues related to bioethics and animal welfare science.

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Dr. Brianna Gaskill

Assistant Professor
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Brianna received her BS from Kansas State University in 2004 and her PhD in animal behavior and well-being from Purdue University in 2011. After graduation, she spent 2.5 years as a postdoctoral research scientist at Charles River Laboratories, studying the behavior and well-being of laboratory rodents and is currently an assistant professor of animal welfare at Purdue University. Her previous research has covered behavioral and physiological thermoregulation of mice in laboratories and its impact on mouse well-being. Additionally she has been involved in developing new and improved types of cognitive testing for mice that are used in psychiatric and neuroscience research. Brianna's other research interests include the development of refined methods in behavioral research, rodent well-being, and the scientific impact of well-being problems in lab animals. Brianna has published in the behavior and well-being, laboratory animal, and experimental psychology literatures and has given presentations on her work at Universities and other institutions. She received a highly commended paper prize from the NC3R's in 2015, the prize for exceptional service in laboratory animal science from the Swiss Laboratory Animal Science Association and New Investigator Award from the International Society for Applied Ethology in 2013.

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Name: Brianna Gaskill **University:** Purdue University

Key Teaching Activities/Interests Relevant to Bioethics:

1) Animal behavior **no dedicated time to ethics
2) Advanced Animal Welfare Assessment **20 hr
3) Guest lecture in biomedical ethics course **1.5 hr
4) Guest lectures in Vet med ethics class **2.5 hr

Previous or anticipated challenges: Lack of buy in from administration

Your expectations from this workshop: Learn active learning strategies to keep students' interest

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Dr. Kelly George

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I have served as an instructor in the Department of Animal Sciences at The Ohio State University for the past 10 years. My area of research and teaching is the human dimensions of the human-animal relationship. My degrees include a B.A. in International Studies, M.A. in Geography, and Ph.D. in Environmental Sciences, all from The Ohio State University. My current teaching responsibilities include a university general education course titled Animals in Society, an entry-level Animal Sciences course, Human-Animal Interactions, a mid-level AS course, Global Food & Agriculture, and two upper-level AS courses, Human Dimensions in Animal Sciences and Southern African Animals. I also coordinate the department's education abroad opportunities, as well as lead and instruct on many of these courses, including the Exotic Animal Behavior and Welfare course in South Africa. Recently, I led an initiative to establish a multi-disciplinary academic center, the Center for Human-Animal Interactions Research & Education (CHAIRE). Through collaborative research, education and outreach, CHAIRE will enhance the relationship between humans and animals and advance appropriate husbandry, management and welfare of wild, captive and domestic species.

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Name: Kelly George **University: The Ohio State University**

Key Teaching Activities/Interests Relevant to Bioethics: Global Food & Agriculture and Human Dimensions in Animal Sciences.

Previous or anticipated challenges: A challenge I have encountered is moving students beyond an emotional response to a bioethics question.

Your expectations from this workshop: My expectation is to learn additional and engaging teaching techniques from experts in the field of bioethics. I am also looking forward to discussing teaching challenges that others have in this field.

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Dr. Kamilah Grant

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Dr. Kamilah E. Grant is currently an Assistant Professor of Animal Science in the Department of Agriculture and Environmental Sciences at the historical Tuskegee University (TU). She obtained her PhD in Agricultural Life Sciences with a concentration in Genetics from Mississippi State University. She completed both her BS and MS (concentration; reproductive physiology) degrees in Animal and Poultry sciences at TU. Dr. Grant is classically trained as an animal reproductive physiologist. Her expertise and areas of research interest include elucidating fertilizing capability of mature sperm via characterization of molecular components, delineation of the potential roles of proteins, micro RNAs and other molecular components in mature spermatozoa in fertilization, the identification /characterization of molecular markers (microRNA, exosomes, proteins, etc.) of fertility.

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Name: Kamilah E. Grant **University: Tuskegee University**

Key Teaching Activities/Interests Relevant to Bioethics: Current course taught: Animal and Plant Biotechnology, Laboratory Animal Management, Undergraduate Animal Science Seminar I and II, Animal Science Research and Internships, Companion Animals.

Previous or anticipated challenges:

- **Instilling in students of varying academic backgrounds the necessity to maintain and adhere to ethical processes.**
- **Divisive arguments of students veterinary school bound versus those on the path to primarily researched based careers and the role bioethics plays in both.**

Your expectations from this workshop: To further my personal knowledge in agricultural bioethics gained and make it applicable to ALL of my current course in a way that that is beneficial to my students.

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Dr. Julia Herman

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As a child, Julia Herman was enthralled with her National Geographic books insomuch that family camping trips generally ended with her describing the differences between a gopher and a marmot or fun facts about the environment. Her curiosity encouraged her to diversify her interests in livestock, epidemiology, wildlife, ecology, and conservation biology in her studies. She is currently a veterinary clinic instructor at Colorado State University's Veterinary Teaching Hospital where she focuses primarily on dairy population medicine and health. This "Ram For Life" received her BS in Zoology, MS focusing on epidemiology, and DVM from CSU with a small stint studying marine biology in Queensland, Australia.

Her first research activities began in agricultural pest management, wildlife management, and wildlife genetics at the National Wildlife Research Center in Fort Collins, CO. After an internship at the Smithsonian National Zoo studying cheetah reproductive endocrinology, she decided to pursue a master's degree in her path to veterinary school. She was awarded a National Science Foundation grant to complete her project studying genetic natural resistance to brucellosis in Yellowstone National Park bison. The project highlighted wildlife management, genetics, and infectious disease along the livestock/wildlife interface which prepared her for a livestock focused study during veterinary school. Following graduation, Julia worked at a mixed animal practice in northwest Kansas concentrating on predominantly beef cattle medicine and small animal medicine. She recently returned to CSU to join the livestock team.

Julia and her husband, a farmer and John Deere aficionado, both originate on the northeastern plains of Colorado. Their passion for wide open spaces feeds their interests in outdoor hiking, traveling, and seeking domestic and international farm tourism opportunities. Julia enjoys photography and traveling to experience Van Gogh's art in person. She and her husband currently reside in Windsor, Colorado.

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Name: Julia Herman, DVM, MS **University: Colorado State University**

Key Teaching Activities/Interests Relevant to Bioethics:

- Clinical instructor for livestock species
- Creating collaborative efforts to educate broader community about agriculture

Previous or anticipated challenges:

- Brand new faculty member with minimal (read: none) teaching experience
- Keeping students interested in the subject
- Presenting subject in a dynamic and interactive way

Your expectations from this workshop:

- Achieve a thorough understanding of bioethics
- Utilize tools and teaching techniques to share with students and colleagues

Dr. Nancy Ing

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I trained at University of Florida for all of my degrees, then did a post-doc at Baylor College of Medicine in Houston. My research focuses on steroid hormone-regulated gene expression in mammalian reproductive tissues. I am excited to extend my studies to glucocorticoid repression of testosterone synthesis in stallion testes, expected to have high relevance to man. Intriguingly, I also collaborate on a project studying gene expression in honey bee reproductive tissues!

My teaching effort has largely been developing my ANSC 210 Companion Animal Science class (3 cr h). Since 2008, it is evolving into a more interactive, active learning experience for the students. I plan to offer an online version in the near future. Our department is undergoing a curriculum revision to begin in 2018. As early as 2020, the 210 class will be transformed into a junior level, 4 cr h class with weekly laboratory sessions. The current class discusses bioethics pertaining to biomedical research with animals, but I would like to expand that topic.

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Name: Nancy H. Ing, DVM, PhD **University**: Texas A&M (College Station)

Key Teaching Activities/Interests Relevant to Bioethics:

ANSC 210 Companion Animal Science (3 cr.)

Previous or anticipated challenges:

Expanding the class to 4 cr for ANSC majors including a lab every week

Your expectations from this workshop:

I'd like to get some engaging active learning experiences in bioethics for my students, perhaps even online students.

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Dr. Lacey Johnston

Equine Lecturer
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Lacey Johnston joined the Animal Science faculty in August 2015 as the Equine Lecturer. She instructs the equine portions of the undergraduate classes, including the 400-level Equine Management course, and will add Ethics in Animal Agriculture to the schedule this fall. Johnston also serves as Coach for the Horse Judging Team, coaches and advises Intercollegiate Horse Show Association Equestrian Club teams, which compete in both Western and Hunt Seat disciplines, and serves as advisor for the Tennessee Collegiate Horsemen's Association.

Johnston attended the University of Tennessee at Knoxville and earned her Bachelor of Science degree in Animal Science (2008), where she was actively involved with the Intercollegiate Horse Show Association team. Interested in equine reproductive physiology, she interned at Peterson & Smith's Equine Reproduction Center in Summerfield, Florida (2009). Upon completion of the internship, she returned to east Tennessee and was employed as an emergency veterinary technician at a mixed practice clinic. Her strong interest in horses led her to Middle Tennessee State University where she earned a Master of Science degree in Horse Science (2013) under the direction of Dr. Warren Gill and Dr. Rhonda Hoffman. Concentrating on Education, Extension, and Coaching, Johnston's research explored the effects of extra-curricular activities on student success and retention.

After completing her master's degree, she moved to Fort Drum, New York with her late husband, Staff Sergeant James Johnston. There, she worked at Honey Dew Acres as a riding instructor while also volunteering as the Jefferson County 4-H Horse Club Leader. After moving back to Fort Campbell, Johnston worked for Vanderbilt University's Division of Animal Care, also volunteering with as the Montgomery County 4-H Horse Club Leader. As an active member of the National Association of Equine Affiliated Academics, Equine Science Society, and the Certified Horsemanship Association, and the Appaloosa Horse Club.

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Name: Lacey Johnston **University:** University of Tennessee

Key Teaching Activities/Interests Relevant to Bioethics:

- ANSC 495: Ethics in Animal Agriculture; additional courses where bioethics are discussed
- Previous work with Vanderbilt University (DAC)
- Current work with IACUC

Previous or anticipated challenges:

- Overwhelming number of students who have limited agricultural backgrounds
- General lack of understanding/misconceptions of animal agriculture
  - Social media or organization driven emotional responses

Your expectations from this workshop:

- Collaboration to develop a more uniform standard for teaching ethics courses
- Gain ideas for activities/discussion to effectively share information to encourage research driven debates

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J. Scarlett Kingsley

Graduate Student
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Scarlett is a graduate student at the University of California, Davis in the Community and Regional Development program, part of the Department of Human Ecology. Scarlett's research centers on the intersection of people and animals in urban spaces. Much of her current research is devoted to analyzing the trends in urban agricultural animal husbandry. She enjoys teaching and developing curriculum related to animal welfare topics and recently contributed a chapter to the forthcoming *Advances in Agricultural Animal Welfare.* Scarlett brings to her research 10 years of animal welfare experience.

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Name: Scarlett Kingsley **University:** University of California, Davis

Key Teaching Activities/Interests Relevant to Bioethics:

The current faculty handling bioethics courses is leaving. I have been asked to take over the course but I do not have a background in the topic. I have taught undergraduate courses on societal genetics topics that touched on issues such as GMO animals and done work in Costa Rica around setting up aquacultural projects.

Previous or anticipated challenges:

Meeting the needs of veterinary, animal science, philosophy, and sociology students in one course.

Your expectations from this workshop:

To leave with a working knowledge of the basics in animal bioethics.

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Dr. Tammi Krecek

Professor of Global One Health
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With more than 30 years international experience at building sustainable One Health research, education and outreach programs in Africa, the Caribbean and the USA, my focus has been a collaborative and interdisciplinary approach for diagnosis and interventions to prevent and manage zoonotic parasitic and infectious diseases which impact resource-poor communities. I established a successful international agricultural consultancy in Sub-Saharan Africa, which addresses societal issues through novel One Health solutions. Two of my overall strengths are establishing international sustainable strategic partnerships, and leading teams to successfully achieve their goals. In 2005, I was recruited as Associate Dean for Research, and Professor of Parasitology at Ross University School of Veterinary Medicine on St. Kitts to create a research program which was completely lacking. I established and led a credible and sustainable research program with a One Health focus endorsed by all global, international, national, regional, and island stakeholders (i.e., World Association for Animal Health (OIE), World Health Organization (WHO), Food and Agriculture Organization (FAO), Centers for Disease Control and Prevention (CDC), etc.) Under my research and administrative leadership Ross established a One Health research program with several "firsts": a Memorandum of Understanding signed between St. Kitts-Nevis Ministries of Agriculture and Human Health and Ross, which strengthened partnerships across diverse disciplines; developed a strategic plan and attracted comprehensive institutional funding to build research and animal facilities, develop operating policies and attract research faculty to support the One Health approach; established the Ross graduate program which was awarded accreditation from the St. Kitts-Nevis Ministry of Education; and awarded funding for the Ross Merial Veterinary Scholars Program. In 2011, as a result of this 6-year strategic effort, Ross achieved accreditation by the American Veterinary Medical Association Council on Education (AVMA COE) and was awarded a full 7-year accreditation, becoming the first veterinary school in the Caribbean and the 5th foreign school to achieve this global benchmark. Leading strategic partnerships and working critically in team efforts are proven strengths, as evidenced by the awarding of a 2015 U.S. Department of Homeland Security contract for a novel collaborative multidisciplinary training program. This "Bench to Shop" program (http://vetmed.tamu.edu/benchtoshop) develops an international curriculum for next generation scientists to take bench discoveries for high consequence transboundary diseases to commercialization. Significant achievements during my tenure as Interim Assistant Dean of One Health at Texas A&M from 2015-2017 advanced the One Health initiative to the next level (http://onehealth.tamu.edu). Examples were 3 grant awards for the establishment of new interdisciplinary programs (e.g., comparative genomics of agricultural, animal, human pests and microbes; porcine cysticercosis biosafety and biosecurity international capacity training initiatives collaborating in 21 countries, etc.). A critical process has been to compile performance metrics for campus-wide One Health research, demonstrating positive outcomes in various research, education and outreach programs.

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Name: Rosina C Krecek **University:** Texas A&M

Key Teaching Activities/Interests Relevant to Bioethics: Developing national and international training programs such as
Good Practices in Animal Bioethics Module

Previous or anticipated challenges: Gauging audience and level for designing agricultural bioethics courses

Your expectations from this workshop: Learn different pedagogical methods and strategies for teaching agricultural bioethics

Dr. Maja Makagon

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Before earning a PhD (2010) in Animal Behavior from the University of California, Davis, Maja Makagon received a bachelor's degree in general biology from the University of Virginia (2001) and a master's degree in psychology from Cornell University (2005). She completed post-doctoral training in the Department of Animal Science, Michigan State University and spent 3 years as an Assistant Professor in the Department of Animal Sciences, Purdue University. In 2015 she returned to the University of California, Davis, as a member of the faculty in the Department of Animal Science. Maja takes an integrative approach to research, drawing from theoretical and applied perspectives and methodologies in animal behavior to find solutions to issues in modern poultry production systems. Her research program centers on the ways in which poultry perceive and interact with their environments, and the implications these interactions have on poultry management, well-being and productivity. Her teaching responsibilities include serving as the lead instructor for two courses: Animal Welfare and Ethics of Animal Use.

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Name: Maja Makagon **University:** University of California, Davis

Key Teaching Activities/Interests Relevant to Bioethics:

- Ethics of Animal Use- an upper division undergraduate course with a heavy writing expectation
- Animal Welfare- an upper division undergraduate course

Previous or anticipated challenges:

Ethics of Animal Use is a large course (enrollment well over 100) with a discussion session, and heavy writing requirement. It is taught within the constraints of a quarter system (10 weeks of instruction). Anticipated challenges include 1) how best to allocate the time I have, 2) how to prioritize content, and 3) how to engage students in active learning given the outlined constraints.

Your expectations from this workshop: To help structure the content of my course I would like to 1) gain insight as to what experts in bioethics deem to the most important course outcomes for an ethics of animal use course, and 2) discuss how to create opportunities for students (very large course) to engage with this type of information.

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Dr. Trent McEvers

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I am a native Texan from the small panhandle town of Dalhart. I grew up in a family involved in multiple facets of agriculture including farming, ranching, irrigation services and natural gas distribution. My academic experience began at WT in the fall of 2003 upon high school graduation. Upon completion of an undergraduate degree in animal science, I made the decision to pursue a master's degree in animal science with an emphasis in meat science. My master's thesis focused on determination of red meat yield utilizing video image analysis technology. Upon graduation in 2010, I began a career as a fed cattle salesman based in Amarillo, TX. During my tenure, I had the opportunity to evaluate and market cattle on a daily basis in the feedlot as well as troubleshoot issues on the harvest floors and sales coolers of beef processing facilities in Kansas and Texas. In 2011, I made the decision to return to WT to earn a PhD in agriculture while instructing animal science courses. The experiences I've had in the fed beef industry have sparked my interest in many facets such as growth and development, utilization of genetic information for sorting fed cattle, marketing, and beef carcass composition. My dissertation topics included the transfer of live and carcass components of Holstein steers fed zilpaterol, modeling of composition of gain, estimation of carcass composition, and quantification of empty body fat, protein, moisture, and ash over time. Currently, I co-advise the West Texas A&M University Beef Carcass Research Center and Meats Laboratory. We employ 20+ students currently whom collect carcass data and are actively engaged in the handling, harvest, fabrication, and cooking of beef, pork, and lamb.

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Name: Trent McEvers **University: West Texas A&M University**

Key Teaching Activities/Interests Relevant to Bioethics: Instructor of record for Meat Science, Meat Animal Welfare Management, Meat Animal Carcass Evaluation, and Food Science. Specific interest in bioethics of cattle utilized for research and production.

Previous or anticipated challenges: Improvement of course offerings through industry exposure and other experiential learning opportunities.

Your expectations from this workshop: Improve upon the current course curriculum I utilize in my undergraduate and graduate instruction. In addition, I am looking to incorporate bioethics topics and implement relevant case studies.

Dr. Erdoğan Memili

Professor
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Dr. Memili is an associate professor (full professor, effective July 1, 2017) at the Department of Animal and Dairy Sciences with both research and teaching responsibilities. Courses he teaches include Scientific Writing, Endocrine Secretions, Goat and Sheep Production, and graduate and undergraduate research.

Overall goal of Dr. Memili's research is to enhance livestock reproduction, production and product quality using systems biology approaches within the concept of systems physiology. Using functional genomics approaches, Dr. Memili's research team has identified biomolecular markers and mechanisms regulating bull fertility. His research interests also include genomics of the other economically important traits including growth and development, resistance to heat and diseases, feed efficiency, and meat and milk quality in cattle and small ruminants.

Originally trained as a veterinarian at the University of Istanbul, Dr. Memili pursued graduate research on mammalian embryo development and genetics in the Laboratory of Dr. Neal First at the University of Wisconsin-Madison where he received his Ph.D. He then did research on epigenetics of stem cells during his postdoctoral research at Harvard University in Boston, Massachusetts and then did basic and applied research on cloning at the GTC Biotherapeutics, formerly Genezyme Transgenics, and now rEVO Biologics in Framingham, Massachusetts. In fall of 2015, Dr. Memili did sabbatical research at Cornell University in Ithaca, NY.

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Erdoğan Memili **University:** Mississippi State University

Key Teaching Activities/Interests Relevant to Bioethics: Goat and Sheep Production (undergraduate); Scientific Writing, and Endocrine Secretions (graduate).

Previous or anticipated challenges: Lack of science- or evidence-based knowledge on animal welfare, animal science students are not empowered well with livestock bioethics for the real-world to face animal-rights activists and to educate/inform the public.

Your expectations from this workshop: Develop better understanding of animal welfare, current and emerging challenges, effective ways of teaching, and course materials.

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Dr. Don Mulvaney

Animal Sciences
Upchurch Hall
Auburn, AL 36849
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Email: mulvadr@auburn.edu

Dr. Mulvaney holds a B.S. degree from the University of Illinois in Animal Science & Ag Education and the M.S. and Ph.D. in Animal Growth Biology from Michigan State University. In addition to research and teaching in areas of animal biology, he has developed multiple courses in leadership and communication leading to the development of a minor in leadership studies in the College of Agriculture and a campus wide Leadership minor. Dr. Mulvaney's current teaching program includes instruction of Animals and Society, Practicum in Animal Welfare and Management, Issues in Animal Agriculture, Introduction to Meat Science., Modern Livestock Systems, and Leadership. A multiple certified leadership trainer, he is a keynote speaker, workshop facilitator, leadership consultant and holds professional memberships in teaching and leadership associations. He currently serves as AU Senate Secretary, has chaired the university Teaching Effectiveness Committee, served as Associate Director of the Biggio Teaching Center, and Assistant Dean roles as Coordinator of Student Leadership and Development. His many leadership and agvocacy outreach efforts include: Youth in Praxis Leadership Program (YIPs), leadership development work with Alabama Junior Cattlemen, execution of the Agriculture Leadership Education Academy (ALEA), Beef Education, Leadership Institute for Tomorrow's Entrepreneur (B-ELITE), Alabama Beef Ambassador Program (ABAP ; workshops or contests), Partners For Social Change – Learning to lead more effectively in ever-changing contexts (PFSC), Frameworks For Learning Leadership Program (FFL), the annual Beef Cattle Conference and as coordinator/training-facilitator of Alabama Cattlemen's Association Young Cattlemen Leadership Program (YCLP). Dr. Mulvaney's research interests lie within regulatory biology of muscle through fetal programming and on student development, teaching, leadership and communication analytics supporting advocacy strategies to address contemporary ag industry issues. He is co-PI on AFRI Grant no. 2013-68004-20357 "Addressing Gaps Between Knowledge And Practice In Production And Distribution Of Local And Regional Foods For A More Secure Food Supply Chain."

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Don Mulvaney **University: Auburn University**

Key Teaching Activities/

Developed over 30 courses including
Current involvements:
ANSC 2910 Animal Welfare and Management;
ANSC 2010 Animals and Society
ANSC 2720 The Meat We Eat;
HONR 3007 Human Animal Studies;
ANSC 4800 Issues in Animal Agriculture;
ANSC 4810 Professional Discourse;
ANSC 4000 Modern Livestock Systems;
LEAD 4000 Leadership Practicum;
AGRI 4960 Practicum in Ag Communications and Leadership

Pedagogical Exercises: Discussion panels, presentations, papers, journaling, conundrums, case analysis, CEO roles, mock corporation, team projects

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AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Don Mulvaney **University: Auburn University**

Interests Relevant to Bioethics: Desire to help students be more capable of thinking critically about science and technology and communicate more effectively to less informed and experienced segments of the citizenry.

Previous or anticipated challenges: Overcoming previously established mindsets; getting some millennials to think and act on their own

Your expectations from this workshop: Exhilarating discussions, creation of a professional network of collaborators, enhanced capacity to teach animal bioethics

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Dr. Katy Proudfoot

Assistant Professor
The Ohio State University College of Veterinary Medicine
Ph: 614-292-7570

Email: Proudfoot.18@osu.edu

Dr. Katy Proudfoot is an assistant professor at the Ohio State University's College of Veterinary Medicine, and Extension specialist in animal behavior and welfare. She completed her PhD and MSc at the University of British Columbia's Animal Welfare Program, where her research focused on housing and managing dairy cows before calving. She currently teaches animal behavior and welfare to veterinary students, conducts research to improve housing for dairy cows and their calves, and provides Extension education on animal welfare assessments.

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Katy Proudfoot **University:** Ohio State University

Key Teaching Activities/Interests Relevant to Bioethics:

1) Introduction to Animal Welfare core course for 2nd year veterinary students (n = 160)
2) Contemporary Issues in Animal Welfare elective for 3rd year veterinary students (n = 40)

Previous or anticipated challenges:

1) Incorporating bioethics into large Animal Welfare course (~160 students)
2) Creating activities that help students empathize with people with different values about animals

Your expectations from this workshop:

1) Learning novel strategies for incorporating bioethics into existing animal welfare courses

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Dr. Yolande Seddon

Assistant Professor of Swine Behavior and Welfare
Western College of Veterinary Medicine
University of Saskatchewan, Canada
Ph: +1-306-966-7151

Email: yolande.seddon@usask.ca

Yolande Seddon is an Assistant Professor of Swine Behaviour and Welfare at the Western College of Veterinary Medicine (WCVM), University of Saskatchewan, Canada. Yolande joined the WCVM in January 2016, having previously completed four years as a post-doctoral fellow at the Prairie Swine Centre. Yolande originates from the UK, where she trained in animal behaviour and welfare during her BSc and MSc. Choosing to specialise in pigs, she received her PhD in 2011 from the University of Newcastle, UK, researching management strategies to promote health in finisher pigs. In her role at the WCVM, Yolande has a research intensive position, with the mandate contribute scientific findings to support development of lasting solutions to welfare challenges encountered in modern swine production. Yolande supervises graduate and undergraduate students and teaches a number of lectures within different courses offered at the University of Saskatchewan, of which includes behavioural aspects of pain, Codes of Practice for farm animal care, swine handling, and ethics of reproductive technologies. She is working to develop a special topics course in animal behaviour and welfare for graduate students, and animal welfare curriculum for veterinary education. Yolande sit on the Saskatchewan Veterinary Medical Association animal welfare committee, a role which includes educational outreach on animal welfare issues in Saskatchewan. She is also involved in swine welfare knowledge transfer to the Canadian swine industry. Yolande is on editorial boards for Animal Welfare, and the Journal of Swine Health and Production. She lives on an acreage with her partner Rob and their five dogs. Her hobbies include exploring nature, training in dog agility and horse riding.

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Yolande Seddon **University:** University of Saskatchewan

Key Teaching Activities/Interests Relevant to Bioethics: Lecture topics: Welfare challenges in swine production, ethics of reproductive technologies, developing animal welfare curriculum for veterinary school, public outreach on animal welfare issues within Province.

Previous or anticipated challenges: Preconceived attitudes from students, targeting different learning techniques – so I can reach everyone through the course.

Your expectations from this workshop: Leave with new skills to deliver course content effectively, including range of training examples. Greater insight into curriculum materials for bioethics.

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Dr. Julie Smith

Research Associate Professor
305B Terrill Building
University of Vermont
Ph: 802-656-4496

Email: Julie.m.smith@uvm.edu

Julie has been with UVM since 2002 and has applied her veterinary background to programs in the areas of herd health, calf and heifer management, and agricultural emergency management.

She has conducted trainings for Extension educators, livestock producers, and community members on the risks posed by a range of animal diseases, whether they already exist in the United States, exist outside of the United States, or pose a risk to both animal and human health. In all cases, she emphasizes the importance of awareness and prevention.

As a veterinarian and spouse of a dairy farmer, Julie is well aware of the animal health and well-being concerns of dairy animals. She has been guiding undergraduate students in thinking critically about animal welfare (in the required course, ASCI 122) since Fall 2014. Coordinating the educational component of Vermont Breakfast on the Farm since 2015 extends these efforts to a wider audience.

Julie grew up in a suburb of New York City, but knew her heart belonged in the country. She credits 4-H experiences with helping her develop leadership skills and the commitment to attain a veterinary degree. Julie received her B.S. in Biological Sciences, D.V.M., and Ph.D. in Animal Nutrition from Cornell University.

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Julia (Julie) M. Smith DVM PhD University: University of Vermont (UVM)

Key Teaching Activities/Interests Relevant to Bioethics: I teach a required sophomore (and above) course in which I challenge students to explore their own views on animal use and understand scientific approaches to assessing animal welfare.

Previous or anticipated challenges: I am uncomfortable discussing philosophical viewpoints regarding animal use.

Your expectations from this workshop: Pick up some tips and tools I can implement.

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Dr. Stephen Smith

Professor of Aquatic Medicine/Fish Health/Wildlife and Exotic Animal Medicine
Department of Biomedical Sciences and Pathobiology
Virginia-Maryland College of Veterinary Medicine

Email: stsmith7@vt.edu

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Stephen A. Smith **University: Virginia Maryland College of Vet. Medicine**
Virginia Tech, Blacksburg, VA

Key Teaching Activities/Interests Relevant to Bioethics:

a. Teach 3 non-domestic species courses – Aquatic, Pocket Pet and Wildlife Medicine

b. How bioethics relates to Animal Welfare, Euthanasia, IACUC and Aquaculture

Previous or anticipated challenges:

No obvious background or experience with "bioethics"

Your expectations from this workshop:

Provide necessary background and understanding to deal with questions of bioethics

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James Templeman

PhD Candidate in Canine Nutrition
University of Guelph
50 Stone Rd. East
Guelph, Ontario
N1G 2W1, Canada
Animal Science & Nutrition Building, Rm. 229

Email: jtemplem@uoguelph.ca

I grew up on a hobby farm in British Columbia, Canada, and while I was constantly around animals of all shapes and sizes, I was always partial to the working dogs we had around the farm. In 2010 I moved out East to the University of Guelph to pursue an undergraduate degree in animal biology. During my 3rd year, I took a course on animal welfare and ethics taught by Dr. Ian Duncan that really sparked my interest in animal research. I got the opportunity to be a teaching assistant for Dr. Duncan the following year and was lucky enough to once again experience firsthand how he could convey a subject matter that was so challenging to comprehend, yet do so in a manner that simply drew students in. He opened my eyes to teaching and ultimately set me on the path to where I am today. Upon graduating in 2014, I moved on to a Master's degree in animal nutrition with Drs. Vern Osborne, John Cant and Brian McBride, a research team that led to my introduction to Dr. Anna-Kate Shoveller. I completed my Master's degree in 2016 and immediately began a PhD with Dr. Shoveller where I was reunited with my long lost love: working dogs. I am less than a year into my PhD where we will be investigating the respective effects of level of exercise, dietary supplementation of tryptophan, and the combination of both treatments, upon: exercise capacity, metabolic response, the gut microbiome, behavioural motivation, and holistic welfare of working sled dogs.

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
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Name: James Templeman (PhD Candidate in Canine Nutrition) **University:** University of Guelph

Key courses relevant to bioethics that I have recently taken, assisted in teaching or guest lectured for:

- *ANSC*3210 Animal Care and Welfare* – Dr. Ian Duncan
  - Organized and oversaw a seminar series for students involving: A) simulated field assessments of animal welfare
    B) critical analysis of literature on ethics and welfare
    C) formal debates and role-playing exercises (fostering students abilities to justify a moral POV and make objective judgments)

- *ANSC*4100 Applied Environmental Physiology and Animal Housing* – Dr. Vern Osborne
  - Developed a project requiring students to create a new, or modify an existing, housing design for a laboratory, agricultural or companion animal by integrating: A) housing codes of practice
    B) animals' biological responses to environmental factors (eg. thermal, light & air conditions)
  - Guest lectured on the topic of: "Housing conditions and husbandry of Ontario farmed mink"

- *ANSC*6720 Scientific Assessment of Affective States in Animals* – Dr. Georgia Mason
  - Recently completed and excelled in Dr. Mason's graduate course focusing on the use of behavioural and physiological measures to draw objective, defensible conclusions about emotions, moods and affective disorders in non-human animals

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Ways I hope to incorporate bioethics as my academic career transitions from student to instructor:

- Development and modernization of nutritional requirements, housing, training and care standards for working dogs
- The augmentation of current university curriculum with new courses related to topics such as:
  - the inner workings of companion animal care standards in Canada
  - the demonstration of how, when conducting research, animal behaviour, welfare, physiology and nutrition are all tightly interwoven

Previous or anticipated challenges:

- Circumventing the intimidation factor that comes with the task of engaging and educating the public on hotly debated topics on agricultural animal bioethics
- Accelerating the process of introducing new codes of practice or modernizing outdated standards and recommended requirements

Expectations from this workshop:

- To improve my understanding of how codes of practice and standards of care are developed, implemented and conveyed in the United States
  - and how these processes differ from or relate to Canadian standards
- Gain the tools necessary to successfully communicate with consumers and laypeople that may lack specialized knowledge in subjects such as animal science and ethics
- Take the opportunity to learn from, and network with, recognized leaders in the animal agriculture industry

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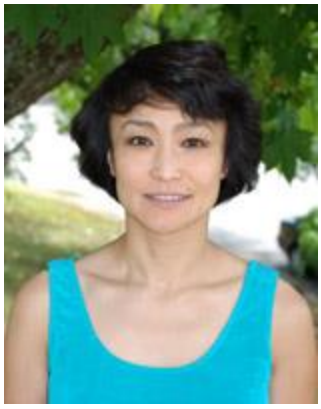
Dr. Cindy Tian



Professor of Biotechnology
University of Connecticut
College of Agriculture, Health and Natural Resources
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Email: xiuchun.tian@uconn.edu

Dr. Xiuchun (Cindy) Tian is a professor of biotechnology at the University of Connecticut. She obtained her MS and PhD from Cornell University where she studied early pregnancy recognition and regulation of steroidogenesis in ovarian tissues. As a recipient of the National Research Service Award from the NIH she did her post-docs in developmental genetics and molecular embryology.

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Xiuchun (Cindy) Tian **University: University of Connecticut**

Key Teaching Activities/Interests Relevant to Bioethics: Embryo Biotechnology and scientific writing.

Previous or anticipated challenges: agricultural sustainability, what part biotechnology plays in providing sufficient, safe and ACCEPTABLE food to the world while not ruining the environment.

Your expectations from this workshop: learn more about animal welfare, how to increase acceptance of biotechnology such as GMO.

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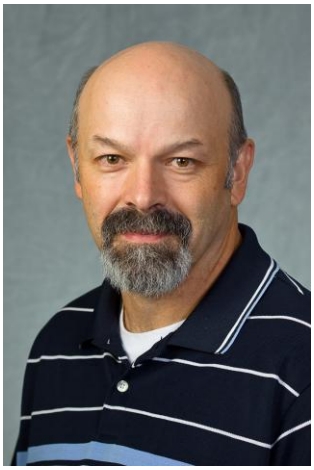
Dr. Eric Vanzant



Associate Professor
Department of Animal and Food Sciences
University of Kentucky Lexington
Ph: 859-257-9438

Email: evanzant@uky.edu

Dr. Eric Vanzant is an Associate Professor in the Department of Animal and Food Sciences at the University of Kentucky. Dr. Vanzant received his M.S. and Ph. D. degrees from Kansas State University in the area of ruminant nutrition. While his primary research focus over the years has been related to the nutrition of grazing and forage-fed beef cattle, more recent efforts have been focused on the use of remote sensing technologies to monitor the health of cattle, and on developing a better understanding of the relationships between animal temperament, health, and productive capacity. At the graduate level, he teaches advanced ruminant nutrition and a course in computer applications for scientists. His undergraduate teaching responsibilities have included animal nutrition courses and the senior capstone course, where the central focus is refinement of critical thinking skills. It is in this course that animal science undergraduates are exposed to some of the ethical frameworks that have been developed to help us gain a deeper understanding of our relationships with, and responsibilities to, nonhuman animals.

AGRICULTURAL ANIMAL BIOETHICS TEACHING WORKSHOP
June 4-6, 2017 INDIANAPOLIS, IN

Name: Eric Vanzant **University: University of Kentucky**

Key Teaching Activities/Interests Relevant to Bioethics:

- **ASC 470 – Capstone for Animal Agriculture**
- **A major focus of the course is an emphasis on tools and strategies to enhance critical thinking skills with an emphasis on evidence-based decision making and use of argument analysis. Thus, while animal bioethics is an important component of this course, there is insufficient time in this course to deal adequately with the complexity of the topic area**

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Previous or anticipated challenges:

- Developing an effective strategy for dealing with the complexities of bioethical arguments
- Engaging the interest of students across a wide spectrum
- Dealing with the diversity and strength of held positions of our undergraduate students
- Increasing student willingness to engage the topic area in a public setting

Your expectations from this workshop:

- Gaining a better understanding of realistic expectations for the "average" undergraduate
- Gleaning ideas from others' experiences to help address the various items noted above
- Stronger arguments to help encourage our faculty to incorporate bioethical concepts throughout our curriculum

Dr. Cynthia Wood

Associate Professor
Animal and Poultry Sciences
Virginia Tech
3020 Litton Reaves Hall (0306)
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Ph: 540-231-6937

Email: piglady@vt.edu

Education:
Iowa State University, PhD, 1986, Animal Breeding and Genetics
Mississippi State University, MS, 1982, Swine Nutrition
University of Florida, BS, 1979, Animal Science

Current Appointment:
Associate Professor, Animal and Poultry Sciences

Courses Taught (Past 5 years):
APSC 1454 Introduction to Animal and Poultry Sciences
APSC 1464 Introduction to APSC Lab
APSC 3684 Youth Swine Day
APSC 3954 Study Abroad "Applied Animal Behavior and Management in the British Isles"
APSC 4444 Swine Production
APSC 4954 Capstone Experience in APSC
APSC 2974, 4974, 4984, 4994 Independent Studies, Special Studies, Undergraduate Research
ALS 1004 Agriculture, the Arts and Society
ALS 2984 Service Learning in Senegal
ALS 3404 Ecological Agriculture
ALS 4974 Employee Management for the Swine Industry (online)
ALS 5984 Graduate Seminar in Applied Animal Behavior and Welfare

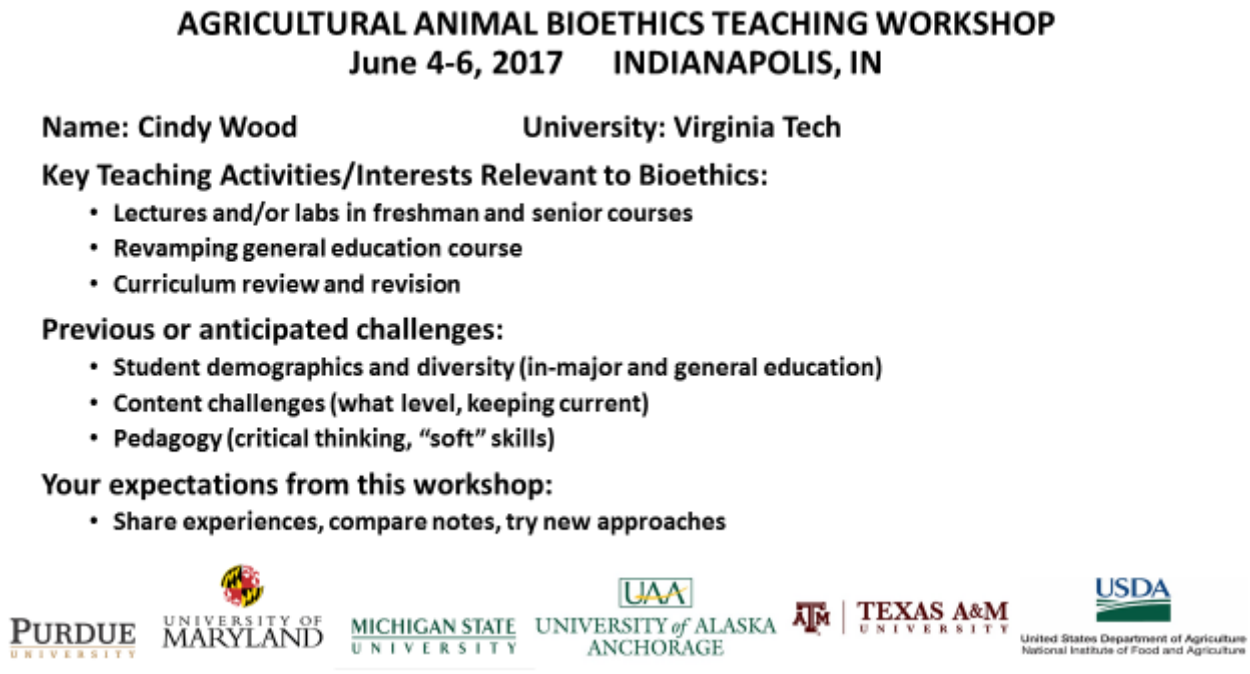
Student Advising:
Undergraduates: 35
MS committees: 1

Scholarship Summary:
1 Book/Monograph
19 Refereed journal articles
8 Papers in conference proceedings
3 Digital resources
7 Book/Chapter reviews
12 Extension publications

37 Other papers and reports
9 Invited presentations
59 Abstracts
65 Popular press
106 Grants and other funds

Professional organizations:
Alpha Zeta
American Registry of Professional Animal Scientists
American Society of Animal Science
Block and Bridle Club
Gamma Sigma Delta
North American Colleges and Teachers of Agriculture
Phi Kappa Phi

Other Activities:
Sabbatical, 2009, Applied Animal Behaviour and Welfare group, Scottish Agricultural College (now SRUC), Edinburgh
Service to university, college, and department committees and organizations

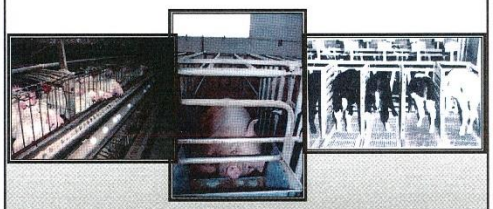


Workshop notes

CHALLENGES AND OPPORTUNITIES IN TEACHING AGRICULTURAL ANIMAL BIOETHICS

C. C. CRONEY*, W. R. STRICKLIN, AND D. SCOTT,

WHAT DO WE DO WHEN THERE IS CONFLICT BETWEEN SCIENTIFICALLY VALIDATED VS. SOCIALLY ACCEPTABLE PRACTICES?



Need for collaborative deliberation

AGRICULTURE'S CHALLENGE IN ADDRESSING ETHICAL ASPECTS OF ANIMAL CARE & WELFARE

Decisions about acceptable agricultural systems and use and treatment of animals based on ethics *And* science

Growing need for curricula to address ethical foundations of animal agriculture.

Most animal science curricula either lack an emphasis on animal welfare or include it only as a current issues topic with little or no specific emphasis on ethics.

AGRICULTURE'S CHALLENGE IN ADDRESSING ETHICAL ASPECTS OF ANIMAL CARE & WELFARE

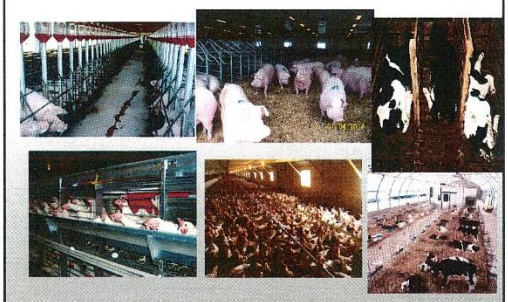
How to incorporate ethics without giving up science?

Most animal scientists untrained in ethics

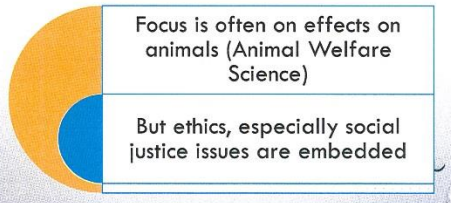
- Lack the tools to critically evaluate current systems (Cherney, 2006; Schillo, 2003)
- Often assume little is wrong with current methods

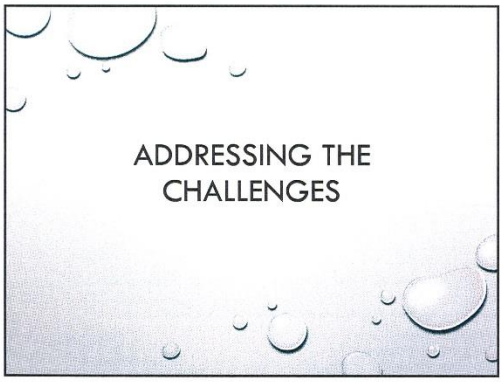
Most comfortable dealing with assumptions supported by scientific data

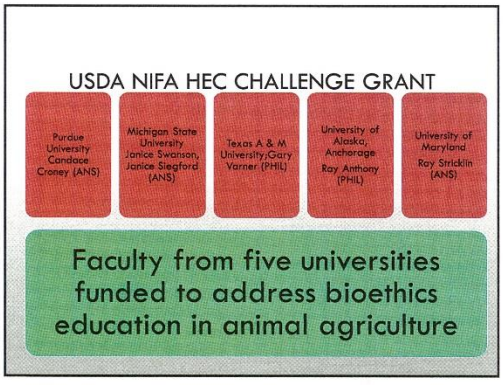
WHICH HOUSING SYSTEMS SHOULD BE ALLOWED?

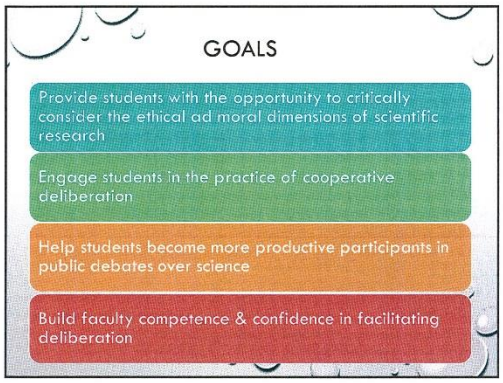


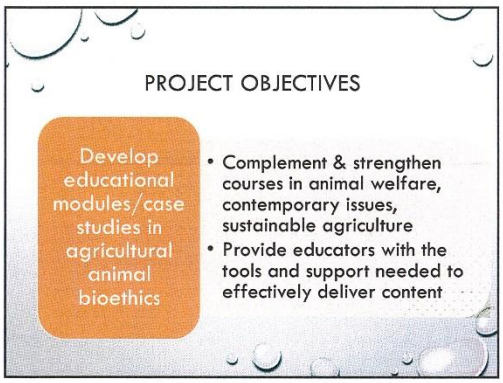
ANIMAL WELFARE AS A MULTI-DIMENSIONAL SCIENCE & ETHICS PROBLEM











FACTORS TO CONSIDER IN ETHICS EDUCATION

- Student participation is essential
- Students learn more when interacting with others of differing opinions/values
- Critical to create a classroom environment in which students feel safe to express opinions
- Well planned exercises combined with rules regarding respect for the views of other persons are needed

DISCUSSIONS CAN EASILY BECOME PROBLEMATIC

THE CASE OF THE MORALLY RELEVANT DIFFERENCES BETWEEN THE DOG AND THE PIG

Question posed to students in ANS 420:

"What is the morally relevant difference between the dog and the pig that allows us to raise pigs in crates that allow them only to stand and lie down, but makes doing the same to dogs abhorrent?"

SAMPLE RESPONSES

- "IT'S TOO EXPENSIVE TO NOT KEEP PIGS IN CRATES."
- "THERE IS NO OTHER WAY TO DO THINGS."
- "WHO'S GOING TO PAY TO CHANGE THE SYSTEM?"
- "DOGS EMOTE."
- "WE EAT PIGS."
- "PIGS DON'T DO MUCH ANYWAY."
- "WHAT ARE THE DOGS BEING USED FOR?"
- "HOW MUCH ARE THE DOGS WORTH?"
- DOGS ARE SMARTER THAN PIGS.

INTERPRETING ANS 420 RESPONSES

- DO NOT ADDRESS UNDERLYING CONCERNS ABOUT MORALLY CORRECT TREATMENT OF FARM ANIMALS
- ILLUSTRATE POOR GRASP OF THE ISSUES; FAILURE TO LINK MORAL PHILOSOPHY AND SCIENCE
- UTILITARIAN PHILOSOPHY, DOGMATISM AND OFFHAND SELF-JUSTIFICATION PERMIT CONCLUDING "IT IS OK TO RAISE DOGS IN CAGES"
  - REITERATES THAT WHEN ETHICAL AND ECONOMIC CONCERNS COEXIST, ECONOMICS TRUMPS ETHICS

CHALLENGES TO STUDENTS

- MOVING BEYOND DOGMATISM, OFF-HAND SELF-JUSTIFICATION & RELATIVISM (WESTON, 2001)
- PHILOSOPHICAL VIEWS BESIDES UTILITARIANISM
- UNDERSTANDING THE PITFALLS OF UTILITARIANISM
- CONSTRUCTING & CRITIQUING "ARGUMENTS" VERSUS ARGUING
- RELINQUISHING ECONOMICS AS THE SOLE PRIORITY

CHALLENGES

- DEFENSIVENESS
- DO STUDENTS REALLY UNDERSTAND WHAT IS HAPPENING IN ANIMAL AG?
- STUDENT INTEREST IN ETHICS
- FOSTERING CRITICAL THINKING
- PRESENTING FULL SPECTRUM OF VIEWS

CHALLENGES

- CONVINCING COLLEAGUES OF NEED FOR BIOETHICS EDUCATION
- INCORPORATING ETHICS INTO SCIENCE COURSES WHERE PROCEDURES ARE BEING DONE WITHOUT ETHICAL CONSIDERATION
- INFORMATION SOURCES
- MAKING INFORMATION RELEVANT TO NON-AG MAJORS
- SOME STUDENTS DOMINATE DISCUSSIONS

WORKSHOP GOALS

Explore needed curriculum content & delivery

Address existing & anticipated challenges

Improve student engagement

Facilitate teaching collaboration & effectiveness

FACTORS TO CONSIDER IN ETHICS EDUCATION

- Student participation is essential
- Students learn more when interacting with others of differing opinions/values
- Critical to create a classroom environment in which students feel safe to express opinions
- Well planned exercises combined with rules regarding respect for the views of other persons are needed

DISCUSSIONS CAN EASILY BECOME PROBLEMATIC

THE CASE OF THE MORALLY RELEVANT DIFFERENCES BETWEEN THE DOG AND THE PIG

Question posed to students in ANS 420:

"What is the morally relevant difference between the dog and the pig that allows us to raise pigs in crates that allow them only to stand and lie down, but makes doing the same to dogs abhorrent?"

Case Studies

Case studies (see https://vet.purdue.edu/CAWS/bioethics/workshops.php#cases)

1. AquAdvantage
    - Ledford, Heidi. "**Salmon is first transgenic animal to win US approval for food**", *Nature International Weekly Journal of Science.*

2. Enviropig
    - Minard, Anne. "**Gene-Altered 'Enviropig' to Reduce Dead Zones?**", *National Geographic*

Discussion points

- What is the central issue?
- Are there competing ethical principles?
- Are there legitimate concerns?
- What else do you want or need to know?
- Is there a common ground from which to work?
- Who does the decision impact?
- What will be the best course of action?

Ray Anthony

Dane Scott

Can Frankenfish and Frankenpigs Help Save the Planet?

No genetically engineered (GE) animals are currently available to consumers. The public seems to accept at least a limited number of genetically engineered crops, for example, in the United States genetically engineered corn, soybean, cotton, and papaya dominate the acres planted in these crops. However, the public remains skeptical of GE animals. Two GE production animals have been widely discussed and debated in the press, AquAdvantage Salmon and Enviropig. It is likely that the GE salmon will make it to some supermarket shelves, while efforts to bring the GE pig to market have been shelved.

Should it be so difficult to bring GE production animals into the market place?

AquaBounty Technologies, the company that developed the genetically engineered salmon, first approached the Food and Drug Administration (FDA) for approval in the late 1990s. In November of 2016 the FDA finally certified AquAdvantage Salmon as safe to eat. The GE salmon is engineered to be fast growing and they require less feed. These salmon will be raised in land-based, closed containment systems. It is advertised as a technological solution for declining wild fish stocks, an alternative to environmentally problematic open-net cage farming, and a way to meet the rapidly growing demand for salmon, more generally protein. Supporter of GE fish argue that this technology can make a significant contribution to sustainably feeding a growing world population. Many consumer and environmental groups disagree, and have forcefully opposed GE fish as a potential threat to human health and biodiversity. Nonetheless, after years of effort this GE salmon is likely to make it to the supermarket. Advocates for GE fish are keeping their fingers crossed that it will be a success, as its success could open the gates for other GE fish and animals. Opponents are keeping their fingers crossed that it will fail, as its success could open the gates for other GE fish and animals.

In 2012 researchers at the University of Guelph who developed Enviropigs announced that they were halting research on this GE pig. At the time they were still waiting for the FDA to certify the pork safe for consumption. The researchers lost their funding and no company was willing to invest. Public resistance to GE animals is the most commonly cited reason for the failure, at least for a time, of Enviropig. Consumer and environmental groups opposed to agricultural biotechnology celebrated. The Enviropig is a technological fix. It is designed to mitigate the environmental impacts of phosphorus (P) pollution from industrial pig farms. Phosphorus pollution is a major global concern as it causes algae blooms and can lead to dead zones in aquatic systems. The cereals and grains that are fed to pigs are high in phytate, a P containing compound. Pigs need P as a nutrient but lack the enzyme, phytase, to digest the phytate in feed. The result is P passes through the pigs system and is concentrated in their manure. Farmers either add digestible P to feed for as a supplement or add the phytase enzyme, often from a GE fungus, to cereals and grains at extra costs. In 1998 scientists at the University of Guelph engineered the Enviropig to synthesize phytase in its salivary gland. Depending on the pig's age and diet the manure of an Enviropig can contain up to seventy-five-percent less P than non-GE pigs. Groups opposed Enviropig argue that these efforts are misguided. Their position is that this attempt to "fix" industrial pig farms with biotechnology should be abandoned due to larger environmental and animal welfare concerns. They argue that more sustainable and humane farming practice should be found.

Discussion Questions

1. Are there legitimate ethical concerns that should warrant the public's skepticism?
2. What are the central ethical issues to consider with these two GE animals?
3. What are the competing ethical principles at stake with these two GE animals?
4. Are there legitimate ethical concerns on sides, for and against, of this issue?
5. What else do you want or need to know about what is at stake with these two GE animals?
6. Is there a common ground from which to work?
7. Who does the decision to move forward, or not move forward impact?
8. What should be the best course of action?

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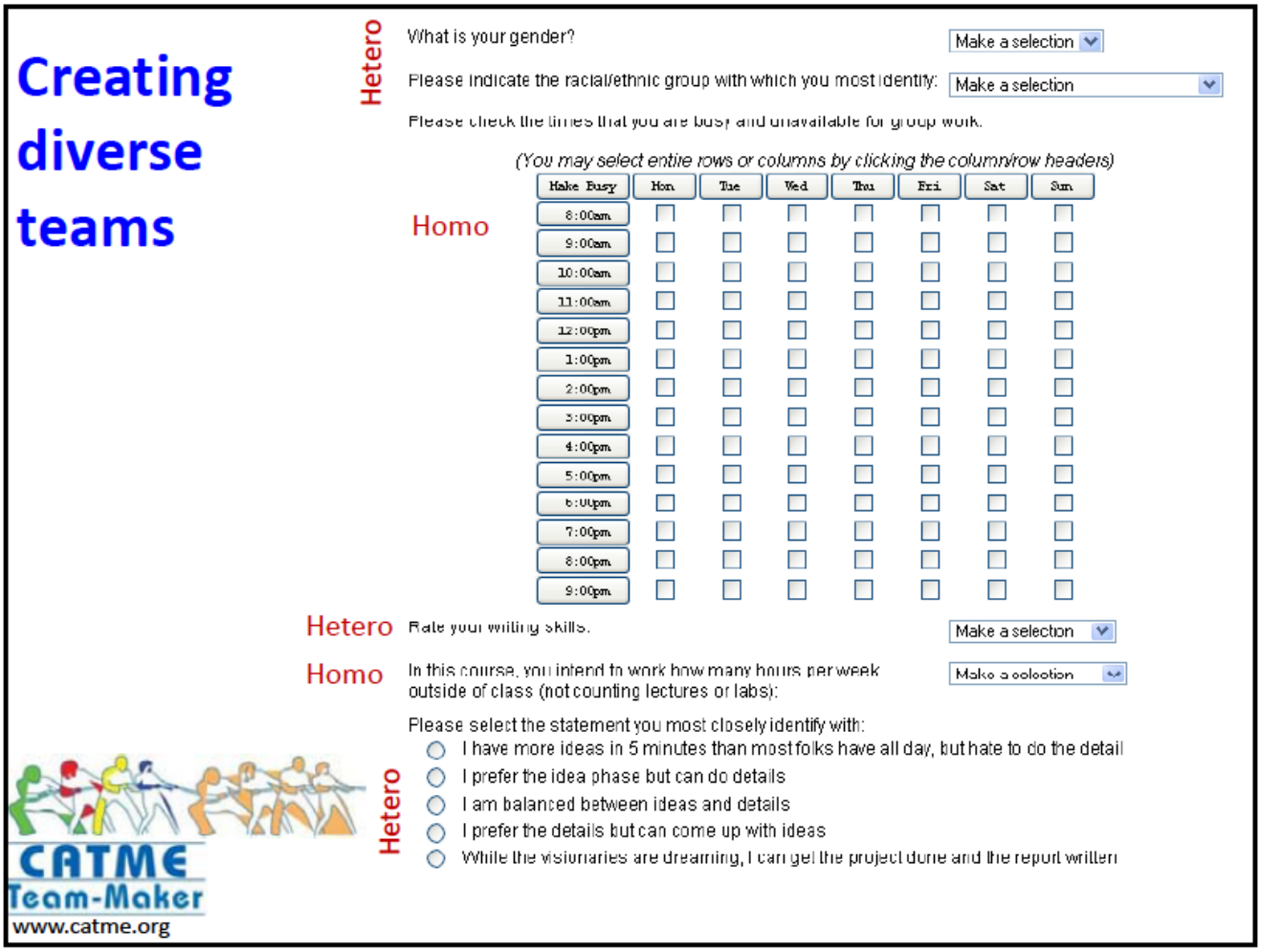
Resources

Team Building

http://info.catme.org



Departments/Organizations

NYU School of Medicine, NYU Langone Medical Center High School Bioethics www.med.nyu.edu/highschoolbioethics/briefs/ethics-animals

National Institute of Health Department of Bioethics. https://www.bioethics.nih.gov

Presidential Commission for the Study of Bioethical Issues www.bioethics.gov

University of Washington Department of Bioethics & Humanities. https://depts.washington.edu/bhdept/

The Department of Medical Ethics and Health Policy, Perelman School of Medicine, University of Pennsylvania www.bioethics.upenn.edu

Animals Used in Reseearch-Latest Government Facts and Figures www.navs.org/animal-testing/latest-facts

University of Alaska Anchorage. Philosophy Department. Ethics Center. https://www.uaa.alaska.edu/academics/college-of-arts-and-sciences/departments/philosophy/ethics- center/faculty-publications.cshtml

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