



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
UNITED STATES MILITARY ACADEMY  
WEST POINT, NEW YORK 10996

MADN-DEP

30 October 2017

MEMORANDUM FOR RECORD

SUBJECT: Statement from COL David M. Barnes to highlight discussion of eNose Project

1. The purpose of this memorandum is to provide a statement from COL David M. Barnes to highlight discussion and support of the eNose Project.

2. On 26 October 2017, I had a meeting with Cadet Zachary Andersen to discuss the ethical implications of the eNose project. Zach is part of a team of 8 cadets and 4 faculty who are working on a synthetic biology project to develop a living cell-based biosensor to detect aerosolized chemicals for military applications, DoD applications, homeland security applications, and unique medical applications. Our conversation focused on the ethical implications of the project itself, the use of human and animal subjects in general, and the impacts of this research to society and the environment. We discussed that the creation and testing of instruments detecting chemicals with engineered olfactory receptors through biosensor microelectrode array readings has many great benefits for the military and for many other uses, and it seems to raise minimal ethical concerns.

Nevertheless, there will be those that hold that any research with animals or humans, even those wholly constructed with immortalized cells, are morally problematic. These individuals see the human body as having infinite, intrinsic value; thus, any use of cells or other parts, they believe, should be prohibited. While, I do not believe that this view provides good reason for rejecting this kind of research, we acknowledged that this is a held view.

Finally, we discussed the impact to the environment. I recommended the team address concerns of waste products and disposal, as well as look at the potential for loss of jobs, etc., should society adopt this biotechnological solution.

3. My background. I am a Professor, United States Military Academy (PUSMA) at West Point, NY. I serve as the Deputy Head of the Department of English and Philosophy and Research Associate for the USMA's Center for Innovation and Engineering. I also serve on the Editorial Board for *The Journal of Military Ethics* and on the Board of Directors for the International Society for Military Ethics (ISME). My research interests include the ethics of war, asymmetric warfare, just war, humanitarian intervention, and military privatization, as well as the ethical application of technology.

4. The point of contact for this memorandum is the undersigned, at (845) 938-2058, or david.barnes@usma.edu.

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