**Research Ethics for Scientists and Engineers in the 21st Century**

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| Organizer : | Associate Professor Tom Børsen, External lecturer Christian Baron and Professor Paola Valero, Department of Education, Learning and Philosophy, Aalborg University. |
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| Lecturers : | Professor Guillermo A. Lemarchand, Center for Advanced Studies, University of Buenos Aires.  |
| ECTS : | 2.5 |
| Time : | November 9-11, 2011 |
| Language:  | English |
| Place: | Aalborg University Copenhagen, Lautrupvang 2B, DK-2750 Ballerup  |
| Cost: | Participants will have to cover their transportation expenses to and from the course venue, and accommodation, if needed, during the course. |
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| Description: |
| The course will address the ethical dilemmas that researchers face in turbulent times, where clear-cut distinctions between pure and applied science can no longer be upheld. The PhD course is aimed at creating a space where PhD students can qualify their reflections on their role as young researchers by drawing on philosophical, sociological, and ethical perspectives in analyzing possibilities and problems of contemporary science. Course participants will be asked to analyze real dilemmas taken from the intersection between science and society – often taking the experiences of individual researchers as the starting point for the analysis. The case analyses will be related to the following four main themes that will be treated during the course:*1. Scientific Social Responsibility in Cases of Life and Death:* Historically, the argument that the pursuit of scientific progress was inherently a morally positive endeavor and thus somehow exempted from other general ethical concerns has been connected with the Enlightenment and the belief that progress in our knowledge will improve the human condition. Not surprisingly, this belief has experienced somewhat of a disenchantment with the realization that science can and has been used in the service of producing not only benefits but also what some consider some of the greatest evils of mankind.Taking up cases where scientific developments apparently has had positive (e.g. the Green Revolution in India)  and/or negative consequences (e.g. The Manhattan Project and the origin of the Atomic Bomb) this theme will convey some of the central ethical dilemmas, concerns and priorities that have informed the debates on the relations between research and environmental, social and ethical responsibility since the Second World War, enabling the students to make qualified reflections on the civil responsibility of scientists. *2. The Conflicting Values of Research in a Post-academic Setting:* In the past decades the classical social contract between science and society (in which the results of scientific inquiry was conceived as ideally free from the interests of political or economic powers) has come under growing pressure by the rise and spread of industrial science. In a situation, where the growth of scientific institutions and communities are approaching their financial limits, competition for funding has become a life-preserving activity for researchers, and a still increasing proportion of scientific research are now being sponsored by private stake-holders, whose financial interests from time to time may come into conflict with the traditional ethos of science. Using case-studies where the interaction between scientists and private stake-holders has led to innovative problem-solving, as well as case-studies where the interests of financial sponsors are in conflict with the public interest of free inquiry as well as case-studies, this theme will familiarize the students with the theoretical attempts to describe and analyze such situations, making it possible for the students to engage in qualified reflections on how to manage private/public research collaboration, here include how to handle the normative conflict that may arise as the result of the post-academic trends in which scientific research in various ways become entangled with the interests of sponsors with strong financial agendas. *3. Post Normal Science and Wicked Problems:* The professionalization of policy making has created an increasing demand for scientific expert advising to help solve complex problems (like, for instance, Global Warming), where political decisions intersect with demographic, economic and environmental problems.This theme will familiarize the students with the theoretical concept of *Post Normal Science* – a concept developed by Silvio Funtowicz and Jerome Ravetz in attempting to describe situations where scientific inquiry is conducted in where “facts are uncertain, values in dispute, stakes high and decisions urgent” (Funtowicz and Ravetz, 1991). Using case studies of so-called “wicked problems” (where urgent decisions are demanded despite incomplete or uncertain knowledge) as examples, this theme will make it possible for students to engage in qualified reflections on the role of science in post normal decision-making.*4. Ethics as a problems-solving activity: Towards a Socially Responsible Scientific Practice for the 21st Century:* Althoughthe Enlightenment ideal that scientific knowledge can be used to improve the human condition has been under siege during most of the 20th Century, it still forms a prominent part of science’s self-justifying *raison d’être*, both among its practitioners and in the public sphere. And no doubt (stories like the Manhattan Project or the Nuremberg Trials aside), there *are* certainly many instances, where science has been employed in the service of the bettering of mankind, whether it be the fighting of hunger (the Green Revolution) or the fighting of disabling and lethal diseases (e.g. the eradication of smallpox).By drawing on perspectives introduced in the previous themes, the final theme of this course challenges the students to make qualified reflections on how to act socially and ethical responsibly in a research setting that is dominated by the co-funding of private sponsors, strategic goal-oriented research and uncertainty in knowledge claims – much like the ones they’re likely to encounter during the rest of their career.Prior to course take-off the course participant will receive an electronic compendium with reading material relevant to the course. Participants are expected to have browsed through the compendium beforehand. |