Brown University
Department of Emergency Medicine
Providence, RI 02903-4923

RESPONSIBLE CONDUCT OF RESEARCH

Course Syllabus
Aug 2015 – Jun 2016
2nd Thursday of the month
11:00 AM – 12:00 PM
Claverick Building

	Co-Director		Co-Director
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Course Description

Brown University Scholars in EM, K Grant recipients and EM fellows will actively participate in the Department of Emergency Medicine Responsible Conduct of Research Course. The course is open to all trainees, faculty, and researchers in the Department of Emergency Medicine. This comprehensive course addresses many of the human subject protection issues in biomedical, behavioral, clinical, and translational research, particularly those of importance to emergency medicine. The course director is Gregory Jay, MD, PhD, Professor of Emergency Medicine and Engineering, Alpert Medical School of Brown University. Dr. Jay is Vice Chair for Research of Emergency Medicine at the Rhode Island Hospital and is an attending physician in the Anderson Emergency Department. Co-Directing is James Linakis, MD, PhD, Professor of Emergency Medicine and Pediatrics, Alpert Medical School of Brown University. Dr. Linakis is also Director of the Rhode Island Hospital IRB.

Course Outline

The course consists of eleven 1-hour sessions offered once a month. The sessions include didactic presentations, case studies and group discussions and have been adapted from On Being a Scientist: A Guide to Responsible Conduct in Research. The topics of the course include (but are not limited to): (a) human subjects research policies and guidelines; (b) vertebrate animal research policies and guidelines; (c) safe laboratory practices; (d) data acquisition, management and record keeping; (e) detecting and managing conflict of interest in research; (f) mentor/mentee responsibility and relationships; (g) collaborative research concerns (including collaborations with industry); (h) data ownership and sharing; (i) peer review concerns; (j) authorship and publication ethics; (k) the scientist as a member of society; (l) ethical considerations in internet-based research; (m) emergency waiver of consent and community consent provisions; (n) vulnerable populations research; (o) risks to confidentiality, certificates of confidentiality, recruitment ethics, and ethics of participant follow-up. As part of the course, BUSEM scholars will be the guest of Dr. Linakis to one Rhode Island Hospital Institutional Review Board meeting per year they are enrolled in the program.

Lecture Schedule

Date **Lecture**

8/20/15 **Grants 101**

Suzanne Araujo, MPA, CRA
Senior Research Administrator, Department of Emergency Medicine

The foundation for any successful grant proposal must be in place prior to submission. Beginning with selecting the appropriate funding opportunity, grant-writers must thoughtfully consider whether a funding mechanism can adequately support their project. The investigator will then establish the research team at the home institution and may seek co-investigators and collaborators at other institutions or agencies to round out the proposal with specialized expertise or patient populations that aren't available within the department. The investigators, consultants, institutions, and agencies involved must provide letters approving the proposed work and committing any resources necessary to the project. The timeline of a grant submission will be discussed, including time built in to receive necessary approvals from partnering institutions, agencies, and consultants. The various budget categories will be explained, including indirect (facilities and administration) cost calculations. Post-award issues such as effort reporting, cost sharing, and cost transfers will also be discussed, in order to educate investigators on areas of increased audit risk.

9/10/15 **Authorship and Publication Ethics**

Michael Mello, MD, MPH
Director of the Injury Prevention Center
Professor, Departments of Emergency Medicine & Health Services, Policy & Practice

The issue of publication ethics applied to research is a multidimensional concern as well as one that affects a wide array of groups – authors, editors, reviewers, researchers and other scholars, learned societies and organizations, policy makers, practitioners and clinicians, funders, and numerous other stakeholders. Every journal that is an outlet for research findings and the dissemination of other new knowledge must, therefore, assume as much responsibility as possible for assuring that the papers it publishes represent high quality and integrity. Understanding the concept of the scientist as a member of society is a nuance that is unique to investigators. The importance of this cannot be understated. The activities, for example, of the NIH Office of Scientific Misconduct will be presented, which will illustrate what happens when this trust breaks down.

10/8/15 **Emergency Waiver of Consent and Community Consent Provisions**

Lisa Merck, MD, MPH
Director of Neurological Emergencies Research Program
Assistant Professor, Department of Emergency Medicine

A core ethical principal for the approval of any proposed human subject research is ensuring that respect for persons is being upheld through the voluntary informed consent process. Institutional Review Boards (IRBs) are required to ensure that informed consent will be sought from each prospective subject or the subject's legally authorized representative and that it will be appropriately documented. Depending on the level of risk of the study, the regulations make provisions for waiving and altering consent and the requirement to document consent. However, until about a decade ago, a waiver of consent was not allowable for any research that was considered greater than minimal risk. This lack of ability to allow a waiver for greater than minimal research created an obstacle to scientific advances in the care of traumatic injuries. In 1996, the Food and Drug Administration (FDA) codified, in 21 CFR 50.24, the exception from informed consent requirements for emergency research.

The regulations allow for an exception to the requirement to obtain informed consent from each subject, or the subject's legally authorized representative, prior to enrollment in a clinical investigation. The exception applies to emergency research involving human subjects who cannot give informed consent because of their emerging, life-threatening medical condition, for which available treatments are unproven or unsatisfactory, and where the intervention must be administered before informed consent from the subjects' legally authorized representative is feasible. Studies involving an exception from informed consent requirements may proceed only after a sponsor has received prior written permission from FDA, and the IRB has found and documented that specific conditions have been met.

The emergency research permitted under 21 CFR 50.24 involves a particularly vulnerable population: persons with life-threatening conditions who can neither give informed consent nor actively refuse enrollment. This lack of autonomy creates a special need for the FDA, study sponsors, IRBs, and clinical investigators to work closely together to ensure that the interests of this vulnerable population of subjects are protected to the maximum extent possible. The regulations for emergency research therefore contain specific human subject protection requirements to account for these concerns. These include specific requirements that representatives of the community in which the research will take place and from which the subjects will be drawn be consulted about the study and that information about a study be publicly disclosed before the study may proceed. This is often referred to as the community consultation and disclosure process. Understanding this unique attribute to emergency research is key to understanding why emergency research is on the cutting edge of research ethics.

11/12/15 **Human Subjects Research Policies and Guidelines**

Karina Bertsch, MSW, CCRP
Clinical Research Program Administrator, Department of Emergency Medicine
Teaching Associate, Department of Emergency Medicine

Research involving human subjects when the project has been certified by a responsible body must be in compliance with the federal government's "Common Rule" for the protection of human subjects. The regulations give grantee institutions the responsibility for setting up "Institutional Review Boards" (IRBs) to review research protocols and designs and ensure the protection of the rights of human subjects. The fundamental principle of human subjects protection is that people should not (in most cases) be involved in research without their informed consent, and that subjects should not incur increased risk of harm from their research involvement, beyond the normal risks inherent in everyday life. The laws that govern medical research and public expectations are constantly evolving. This lecture presents the history of protecting human research subjects and events that shaped current practice.

12/10/15 **Vertebrate Animal Research Policies and Guidelines**

Adam Chodobski, PhD
Director of Neurotrauma and Brain Barriers Research Laboratory
Associate Professor (Research), Department of Emergency Medicine

Joanna Chodobski, PhD, MS
Assistant Professor (Research), Department of Emergency Medicine

In the United States, animal testing on vertebrates is primarily regulated by the Animal Welfare Act of 1966 (AWA), which is enforced by the Animal Care division of the Animal and Plant Health Inspection Service (APHIS) of the United States Department of Agriculture (USDA). The AWA contains provisions to ensure that individuals of covered species used in research receive a certain standard of care and treatment, provided that the standard of care and treatment does not interfere with "the design, outlines, or guidelines of actual research or experimentation." Currently, AWA only protects mammals. In 2002, the Farm Security Act of 2002, the Fifth Amendment to the AWA, specifically excluded purpose-bred birds, rats, and mice (as opposed to wild-captured mice, rats, and birds) from regulations. Thus, relatively few animals used in research in the U.S. are covered by this legislation. The AWA requires each institution using covered species to maintain an Institutional Animal Care and Use Committee (IACUC), which is responsible for local compliance with the Act. Methods to ensure compliance with these standards are critical of animal research. Preparation of the IACUC document is the first part of this process. It is also important to understand how investigators conform to these laws in an ethical but creative

manner.

1/21/16 **Detecting and Managing Conflict of Interest in Research**

Gregory Jay, MD, PhD
Vice Chair for Research
Professor, Departments of Emergency Medicine, Medicine & Engineering

Employees, in performing official duties, are expected to act on behalf of and in the best interests of the organization that employs them. A conflict of interest arises for an employee, officer or director of an organization when that person acts, or appears to act, on behalf of someone other than the organization; and has, or appears to have, a self interest of which the organization is unaware and that is actually or potentially adverse to its best interests. If a conflict of interest results in economic or financial loss to the organization through fraud, waste or abuse, then administrative, civil or criminal remedies may be pursued, as circumstances or policy dictate. Understanding why this has become such an important issue is timely and an integral component of translational research.

2/11/16 **Mentor/Mentee Responsibility and Relationships**

Brian Zink, MD
Frances Weeden Gibson - Edward A. Iannuccilli, MD
Professor & Chair, Department of Emergency Medicine
Alpert Medical School, Brown University

Mentoring is a partnership between two individuals, the mentor and the mentee. In considering the roles of the mentor, he or she must wear many hats throughout the process. A mentee must also perform several roles. The mentee is the student who needs to absorb the mentor's knowledge and have the ambition and desire to know what to do with this knowledge. As a student, the mentee needs to practice and demonstrate what has been learned. A mentee is the "gauge" to measure how interactive the connection between the mentor and mentee will be. This means that the mentee determines the capacity of the mentoring connection. The mentee decides upon the amount of help and guidance he/she needs. As well, the mentee should take the initiative to ask for help or advice and to tackle more challenging assignments. This lecture offers the perspective of both the mentor and mentee, and how best to forge a mutually constructive relationship.

3/10/16 **Collaborative Research & Data Ownership and Sharing**

Bruce Becker, MD, MPH
Professor, Departments of Emergency Medicine & Behavioral and Social Sciences

Over the past 50 years, research collaborations have increased across all disciplines. The term collaboration initially referred to researchers working together within the same discipline, within an institution or in different institutions. Collaborations can be as simple as one researcher sharing reagents or techniques within the same lab or they can be as complex as multi-centered clinical trials that involve academic research centers, private hospitals, and for-profit companies studying thousands of patients in different states or countries. Researchers assume certain additional responsibilities when embarking on collaborative projects. These responsibilities arise from the burdens of:

- Increasingly complex roles and relationships
- Aligning the differing interests of the collaborators
- Meeting institutional requirements
- Managing cultural differences
- Managing regulatory/ compliance differences
- Execution of MTA's and MOU's

Paying special attention to these added burdens can help collaborative projects run smoothly. Data ownership refers to both the possession of and responsibility for information. Ownership implies power as well as control. The control of information includes not just the ability to access, create, modify, package, derive benefit from, sell or remove data, but also the right to assign these access privileges to others. Understanding these definitions in the context of your own interactions with collaborations with colleagues as well as industry sponsors are increasingly important.

4/14/16 **Peer Review and Reviewing**

Roland C. Merchant, MD, MPH, ScD
Associate Professor, Departments of Emergency Medicine & Epidemiology

Peer review, in which experts in the field scrutinize and critique scientific results prior to publication, is fundamental to scientific progress, and the achievements of science in the last century are an endorsement of its value. Peer review influences more than just science. The institute of medicine and other similar advisory groups base their judgments on peer-reviewed literature, and this is part of their success. Many legal decisions and regulations also depend on peer-reviewed science. Thus, thorough, expert review of research results--without compensation--is an obligation that scientists shoulder for both science and the general public. It is important to understand standards of conduct by references that journals typically expect. This lecture provides the prospective of both the reviewing referee and the author. The importance of timely, unbiased and circumspectful

interaction between the referee, author and editor will be discussed.

5/5/16 **Conduct and Ethical Considerations in Technology-based Research**

Andrew Nathanson, MD
Clinical Associate Professor, Department of Emergency Medicine

Megan Ranney, MD, MPH
Director of the Emergency Digital Health Innovation Program
Assistant Professor, Department of Emergency Medicine

There are no definitive sector-wide or country specific ethical guidelines for internet-based research due to changes in the scope and interest of research, rapid advancements in technology and the cross border potential of online research. However, a large number of the ethical considerations that apply to 'real world' research also apply to online research and sources are able to suggest a number of factors, which should be considered before undertaking internet-based research. Likewise methods of effective internet based research do exist and can be used in hypothesis testing. This lecture will be presented by an active internet based investigators who have conducted open injury surveillance studies and a form of opt-in internet based stimulus intervention.

6/9/16 **Vulnerable Populations Research & Risks to Confidentiality, Certificates of Confidentiality, Recruitment Ethics and Ethics of Participant Follow-up**

James Linakis, MD, PhD
Associate Medical Director, Hasbro Children's Hospital Emergency Department
Professor, Departments of Emergency Medicine & Pediatrics
Chair, Institutional Review Board, Rhode Island Hospital

There are a number of research populations described in the Federal regulations as "vulnerable" or that require additional consideration or protection. "Vulnerable" or "special" classes of subjects include: pregnant women, human fetuses and neonates, prisoners, children, cognitively impaired persons, students and employees, minorities, economically and/or educationally disadvantaged, AIDS/HIV+ subjects, and terminally ill subjects. In addition, the regulations outline specific provisions for research involving: fetuses, pregnant women, and *in vitro* fertilization, prisoners, and children.

Certificates of Confidentiality are issued by the National Institutes of Health (NIH) to protect the privacy of research subjects by protecting investigators and institutions from being compelled to release information that could be used to identify subjects with a research project. Certificates of Confidentiality are issued to institutions or universities where the research is conducted. They allow the investigator and others who have access to research records to refuse to disclose identifying information in any civil, criminal, administrative, legislative, or other proceeding, whether at the federal, state, or local level.