Principal Investigators proposing new research or are currently conducting research with synthetic nucleic acids that are subject to the newly amended NIH Guidelines will need to be registered with the IBC by the March 5, 2013 deadline.

The following informational sections have been taken from the Frequently Asked Questions document created by NIH/OBA to address the NIH Guidelines revisions that will include research involving synthetic nucleic acid molecules as of March 5, 2013. The complete list of questions can be found at http://oba.od.nih.gov/oba/faqs/Synthetic_FAQs-Sept-2012.pdf.

SUMMARY OF WHAT HAS CHANGED:
The scope of the NIH Guidelines has been modified to cover explicitly certain types of basic and clinical research with nucleic acid molecules created solely by synthetic means. Certain classes of basic and clinical research with synthetic nucleic acids will be exempt.

The new language in Section I-A of the NIH Guidelines states “The purpose of the NIH Guidelines is to specify the practices for constructing and handling: recombinant nucleic acid molecules, synthetic nucleic acid molecules, including those that are chemically or otherwise modified but can base pair with naturally occurring nucleic acid molecules, and cells, organisms, and viruses containing such molecules.”
Throughout the NIH Guidelines, the term “recombinant DNA molecules” has been replaced as appropriate with “recombinant or synthetic nucleic acid molecules” which encompasses research with both recombinant and/or synthetic nucleic acids. As a result, the amended NIH Guidelines apply (unless otherwise exempted by other sections of the NIH Guidelines, e.g. III-F) to research with recombinant or synthetically derived nucleic acids, including those that are chemically or otherwise modified analogs of nucleotides (e.g., morpholinos), or both.

**Definition of Synthetic Nucleic Acids under the Amended NIH Guidelines**

In the amended NIH Guidelines, recombinant and synthetic nucleic acid molecules are defined as: molecules that

a) are constructed by joining nucleic acid molecules and  
b) can replicate in a living cell (i.e. recombinant nucleic acids); nucleic acid molecules that are chemically or by other means synthesized or amplified, including those that are chemically or otherwise modified but can base pair with naturally occurring nucleic acid molecules (i.e. synthetic nucleic acids); or molecules that result from the replication of those described in (i) or (ii) above.

**Basic research with synthetic nucleic acids that is covered under the amended NIH Guidelines**

The amended NIH Guidelines apply to research with synthetic nucleic acids that presents biosafety risks equivalent to recombinant DNA research that is subject to the NIH Guidelines. For example, research with a genetically modified virus or a vector derived solely by synthetic techniques is subject to the amended NIH Guidelines.

**Chemical Synthesis of Nucleic Acids**

The amended NIH Guidelines do not cover the chemical synthesis of nucleic acids. While the scope of the amended NIH Guidelines refers to “constructing” nucleic acids, the amended NIH Guidelines exempts research with nucleic acids that are not contained in cells, organisms, or viruses. Therefore, the chemical synthesis of nucleic acids is exempt. **The amended NIH Guidelines only apply once synthetic nucleic acids are placed in a biological system.**
RISK ASSESSMENT FOR RESEARCH WITH SYNTHETIC NUCLEIC ACID MOLECULES

The risk assessment framework of the NIH Guidelines uses the risk group of the parent organism as a starting point for determining the necessary containment level. For example, genetic modifications of a Risk Group 3 organism (defined as agents that are associated with serious or lethal human disease for which preventive or therapeutic interventions may be available) would generally be carried out at Biosafety Level 3 (BL3) containment but the containment level might be raised or lowered depending on the specific construct and the experimental manipulations.

In most instances, this risk assessment framework can be effectively applied to assess the biosafety risks of experiments with synthetic nucleic acids. However, synthetic biology research has the potential to create complex, novel organisms for which identification of a parent organism may be more difficult or may not be as relevant to the risk assessment as it is with more traditional recombinant organisms. The risk assessment may also be complicated by the limitations in predicting gene function from sequence(s) or the synergistic effects from combining sequences from different sources in a novel context. In such cases, the risk assessment should include at least two levels of analysis. The first involves a consideration of the Risk Groups of the source(s) of the sequences and the second involves an assessment of the functions that may be encoded by these sequences (e.g., virulence or transmissibility). It may be prudent to first consider the highest risk group classification of all agents that are the source of sequences included in the construct. Other factors to be considered include the percentage of the genome contributed by each parent agent and the predicted function or intended purpose of each contributing sequence. The initial assumption should be that all sequences will function as they did in the original host context.

The risk assessment should also consider that the combination of certain sequences in a new biological context may result in an organism for which the risk profile could be higher than that of the contributing organisms or sequences. The synergistic function of these sequences may be one of the key attributes to consider in deciding whether a higher containment level is warranted, at least until further assessments can be carried out. A new biosafety risk may occur with an organism formed through the combination of sequences from a number of organisms or due to the synergistic effect of combining transgenes that results in a new phenotype.

Further information is available on the NIH OBA website at: http://oba.od.nih.gov/rdna/nih_guidelines_oba.html
Important Information for Animal Users:

The Association for the Assessment and Accreditation of Laboratory Animal Care, International (AAALACi) Site Visit will occur in February, 2013:
In the upcoming weeks, as we receive more specific information from AAALACi, we will share it with you. We will also share tips for going through the AAALACi site visit process. See below:

AAALACi Tips:
Make sure that a copy of your approved protocol is located in your lab and that personnel are familiar with its terms.

Background:
AAALACi visitors often ask questions about the research projects. They will then compare answers to what is in the protocol during the protocol review phase of their visit.

Simple Prep: Make sure that all personnel have read the protocols on which they are working.

Records need to be maintained and up to date. (e.g. surgical records, drug inventories, euthanasia records, training records, etc.)

Background:
While the first AAALACi visit often focuses on the adequacy and condition of the facilities, the second visit also includes a more in depth look at documentation and records.

Review your current semiannual inspection feedback report along with the prior semiannual report to avoid findings of repeat deficiencies in your lab or other animal use areas.

Background:
Like the IACUC, AAALACi is interested in repeat problems. Repeat citations may be considered significant rather than minor deficiencies in the animal program.

Please see the following IACUC Policies on our website: http://iacuc.uconn.edu/

Policy # AW-05-2011, Use of Non-Pharmaceutical Grade Compounds in Animals
Pharmaceutical Grade Drugs are required by the Guide for the Care and Use of Laboratory Animals. Unless you have received a specific exception for your protocol, you must use pharmaceutical grade compounds in animal research. (Guide, pg. 31.)

Policy # SI-05-2011, Policy Title: Principal Investigator Responsibilities When Developing/Implementing Protocols
What your signature means on a protocol.
When signing the certification statement on the IACUC-1 form, PIs certify that they will comply with the PI Responsibilities policy.

(continued to page 5)
Policy # SI-11-2012, Policy Title: Requirements for Personnel Listed on IACUC Protocols

Who has to take what training? This policy outlines the requirements for individuals listed on animal protocols. We hope that this policy will be a resource for you in ensuring appropriate training for your staff.

Expedite IACUC Review of your Protocol
Use Track Changes and Submit Microsoft Word Documents: To expedite the review of your protocol, submit documents in Word (not PDF) and use the “track changes” feature when making modifications and revisions to the existing protocol. This allows the reviewers to see the prior entry which appears with a strike through, e.g., 400 animals and to see the new entry which is underlined e.g., 500 animals. Reviewers often prefer a hard copy. “Track changes” allows the same view whether viewed electronically or as a hard copy; different colored fonts do not.

If you have any questions, please contact the IACUC Office.

Standard Operating Procedure (SOP) Library
In collaboration with the IACUC, the Office of Animal Care has developed and published a number of SOPs for common procedures used in lab animal research here at UConn. A link to the password protected OAC website is provided below to allow you to access these SOPs. We encourage you to carefully review the SOPs and incorporate them by reference into your future protocols when possible. When you wish to reference an SOP, please attach a copy of the pertinent SOP to your protocol submission.

A few caveats:

Once you have incorporated an SOP, it becomes “part” of the protocol, and we will expect you to follow the SOP accordingly.

The SOPs are very detailed, in some circumstances you may not be able to strictly adhere to every aspect. In those circumstances you should describe in what ways you will deviate from the SOP in the body of your protocol.

Don’t reinvent the wheel! SOPs will be added to the library in the future, so be sure to check this website often.

http://oac.uconn.edu/sops.html

(Note: After clicking the link you will be asked to provide your net-id and password.)
Current Index

OAC SOP 060 Handling BrDU, STZ, and Tamoxifen in the Animal Facility
OAC SOP 108 Mouse Breeding
OAC SOP 1400 Environmental Enrichment Program
OAC SOP 2002 Fish and Aquatic Amphibian Anesthesia
OAC SOP 2014 Surgery Guidelines
OAC SOP 2020 Guidelines for Injection Sites, Volumes, and Needle Gauges
OAC SOP 2021 Blood Collection Guidelines
OAC SOP 2022 Guidelines for Humane Intervention Points/Tumors

A Note on Communication

In the interest of maintaining open lines of communication, the IACUC wishes to remind Principal Investigators that you may question any request made in the IACUC’s letter requiring modifications to secure approval. To do so, please, in your letter of response to the IACUC, address it briefly directly after the item you are contesting. The Chair or another IACUC member will contact you to discuss it. Although the IACUC may not always change its position, the IACUC recognizes your expertise and is willing to consider your perspective on any important matter. Please contact the IACUC office any time about your concerns!

Contact Information:

Nancy Wallach
Director, ORC
nancy.wallach@uconn.edu
Phone: (860) 486-4164

Christine Malloy
Chair, IACUC
christine.malloy@uconn.edu
Phone: (860) 486-9428

Karen Moré
Senior Coordinator, IACUC
Phone: (860) 486-2459

Arlene Jacobsen
Coordinator, IACUC
arlene.jacobsen@uconn.edu
Phone: (860) 486-4110

Office Fax: (860) 486-1044

IACUC Meeting Dates:

Thursday, January 10, 2013
Thursday, January 24, 2013
Thursday, February 14, 2013
Thursday, February 28, 2013
Thursday, March 14, 2013
Thursday, March 28, 2013
Thursday, April 11, 2013
Thursday, April 25, 2013
Thursday, May 9, 2013
Thursday, May 23, 2013
Sherley v. Sebelius

Two scientists who have fought a three year long losing battle to block federal funding for human embryonic stem cell research have now appealed their case to the U.S. Supreme Court. In August 2012 a three judge panel in the U.S. Court of Appeals hearing Sherley v. Sebelius determined that federal support for human embryonic stem cell research did not violate the prohibitions of the Dickey-Wicker Amendment that no federal funds be used for research in which human embryos are destroyed, discarded, or knowingly subjected to the risk of injury. Legal analysts believe that there is little prospect that the Supreme Court will accept the case.
Advance Notification of InfoEd System Upgrade

The IRB would like to advise researchers that InfoEd will be upgraded in the near future. The upgrade will bring some aesthetic changes to the user interface as well as enhanced features, primarily for grant/proposal submission and tracking but also for IRB protocol submissions. Please continue to monitor your email as well as the UConn Daily Digest for further announcements. In the meantime, if you have any questions, please contact Doug Bradway at doug.bradway@uconn.edu.

Collaborating with Researchers at Other Institutions

If you are collaborating with another institution(s) on a project involving human participant research and wish to avoid duplicate IRB review, an IRB Authorization Agreement may be arranged to establish one institution’s IRB as the designated IRB to review and approve the research. Authorization Agreements need to be negotiated by each involved IRB, usually on a case-by-case basis. Please contact Doug Bradway at doug.bradway@uconn.edu or 860-486-0986 to discuss the conditions under which an IRB Authorization Agreement may be an option for your project.

NIH Genetic Educational Program for Social/Behavioral Science Researchers

Earlier this year, the National Institutes of Health (NIH) launched a new genetics educational program (http://www.nchpeg.org/bssr/) to provide social and behavioral scientists with sufficient genetics background to allow them to engage effectively in interdisciplinary research with genetics researchers.

According to the NIH information release, “The overarching goal of the course, Genetics and Social Science: Expanding Transdisciplinary Research, is to improve these scientists’ genetics literacy in several key areas, broadly grouped into conversation, imagination, evaluation and integration. The course will provide sufficient knowledge to support the integration of genetics concepts in the behavioral or social scientist’s own research and will allow for collaborative studies with geneticists. The course will provide users with the ability to conceive of progressive but feasible studies. Scientists will develop the skills necessary to assess genetics research for validity and utility. Because behavioral and social scientists have a very large breadth of expertise, the course focuses on core concepts that are applicable to most scientists, no matter where they are in their careers or training. The course was developed by an advisory committee with experts from a wide range of areas, including addiction, psychiatry, anthropology, obesity, clinical genetics, and race and ethnicity. The core areas are: variation (e.g., sources of genetic variation, biological pathways); gene-environment interaction; population issues; clinical issues (e.g., family history) and research issues (e.g., data sharing). The course was developed based on adult learning theory, which focuses on active learning and self-direction, allowing for users to choose their own path through the interactive content.”

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Of particular interest is the section on Research Issues concerning social and ethical issues such as Privacy and Discrimination, Intellectual Property, Direct to Consumer Testing, Social and Cultural Implications as well as topics concerning special issues in research implementation such as Informed Consent in Genetics Research, Data Sharing and Databases, Returning Results, and Impact of Genetics-related Legislation on Research.

In the coming months, the IRB will issue comprehensive policies and procedures relating to its review of genetic research at UConn.

**Amendment Requirements – Changes to Research Protocols**

As a reminder to researchers, all changes to IRB protocols must be submitted for review and approval prior to implementing the change(s) into the research study. Review the IRB’s submission policies and procedure for information regarding the review of amendments submitted for expedited and full board review. To request approval for changes to a protocol, investigators must the IRB-3 Amendment Request form (http://www.irb.uconn.edu/forms.html). Please note that revisions to previously approved documents should be submitted using the track-change feature of Microsoft Word so that additions and deletions from the documents can be easily identified.

**The International Compilation of Human Research Standards**

The Office for Human Research Protections announced that the 2013 edition of the International Compilation of Human Research Standards is now available.

“The International Compilation of Human Research Standards is a listing of over 1,000 laws, regulations, and guidelines on human subjects protections in 104 countries and from several international organizations. The Compilation is designed for use by IRBs, researchers, sponsors, and others. Many of the listings embed hyperlinks to the source document. As in the past, the new edition updates the human research standards based on information provided by in-country experts.”

Researchers can access the Compilation in both Word and PDF formats by going to: http://www.hhs.gov/ohrp/international/index.html. Ecuador is a new country featured in the 2013 Edition.

### IRB Meeting Dates

- Thursday, January 10, 2013
- Thursday, January 31, 2013
- Thursday, February 21, 2013
- Thursday, March 14, 2013
- Thursday April 4, 2013
- Thursday April 25, 2013

**Contact Information:**

- **Nancy Wallach**
  Director, ORC
  nancy.wallach@uconn.edu
  Phone: (860) 486-4164

- **Douglas Bradway**
  Program Administrator, IRB
  doug.bradway@uconn.edu
  Phone: (860) 486-0986

- **Dana Howard**
  Administrator, IRB
  dana.howard@uconn.edu
  Phone: (860) 486-8802

Office fax (860) 486-1044

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