

INSTITUTIONAL BIOSAFETY COMMITTEE MEETING

July 26, 2017

1 PM, Plant Biotechnology Building, Room 410

MEMBERS PRESENT: Chair, David White; Vice Chair, Elizabeth Fozo; Marc Caldwell, Tamara Chavez-Lindell, Lori Cole, Doris D'Souza, Reza Hajimorad, Brittany Isabell, Melissa Kennedy, Jae Park

Ex-Officio – Linda Hamilton, Scott Moser, Brian Ranger, Jessica Woofter

MEMBERS ABSENT: Paul Dalhaimer, Reginald Millwood, Deidra Mountain, Ling Zhao, Jun Lin

OTHERS PRESENT: None

Opening:

The meeting was called to order by the Chair, Dr. David White at 1:00 PM. Dr. Marc Caldwell was introduced to the committee as a new member. The minutes of June 21, 2017 were reviewed and approved as written with one abstention.

IBC Applications:

#IBC-05-240-1 (Albrecht von Arnim) Recombinant DNA, III-E-2-a, 3-year rewrite

Dr. von Arnim's research covers the use of transgenic *Arabidopsis thaliana* to study the mode of action of plant genes involved in light signal transduction, development, protein translation, and regulation. His work involves the use of standard cloning hosts (*E. coli* and nonpathogenic yeasts) and Agrobacterium-mediated DNA transfer. The committee approved the registration pending clarification of the storage of the mature seeds. Containment was set at BSL-1.

#IBC-08-331-1 (Brad Binder) Recombinant DNA, III-E-2-a, 3-year rewrite

Dr. Binder's research examines ethylene regulation and signaling in plants. Specifically, he will be elucidating the molecular basis for ethylene responses and regulation of growth and development in *Arabidopsis thaliana*. Dr. Binder's work involves the use of standard cloning hosts (*E. coli* and *S. cerevisiae*) and Agrobacterium-mediated DNA transfer. The committee approved the registration as written. Containment was set at BSL-1.

#IBC-15-428-2 (Colleen Jonsson) Recombinant DNA, Infectious Agents, & Human-Derived Materials, III-D-1-a; 2-a; 3-a; Amendment

Dr. Jonsson's registration was amended to include a memorandum of understanding that Dr. Heidi Goodrich-Blair will serve as Co-Principal Investigator for this approved registration. The committee approved the amendment as written.

#IBC-16-434-3 (Colleen Jonsson) Recombinant DNA, Infectious Agents, & Human-Derived Materials, III-D-2; Amendment

Dr. Jonsson's registration was amended to include a memorandum of understanding that Dr. Heidi Goodrich-Blair will serve as Co-Principal Investigator for this approved registration. The committee approved the amendment as written.

#IBC-11-364-1 (Cong Trinh) Recombinant DNA, III-E-1, 3-year rewrite

Dr. Trinh's research covers the use of *Escherichia coli* BL21, nonpathogenic yeasts (e.g. *S. cerevisiae*), and other low-risk bacterial hosts (e.g. *Clostridium butyricum*, *Bacillus subtilis*) as a hosts for creating recombinant biosynthetic pathways, primarily ethanol production. The goal of his research is to generate biocatalysts for producing biofuels and biochemicals from renewable and sustainable lignocellulosic biomass. The containment level was set at BSL-1. The committee approved the registration pending clarification of the production volumes and biosafety cabinet certification dates.

#450 (Cong Trinh) Recombinant DNA & Infectious Agents, III-D-1-a, New registration (revisit)

Dr. Trinh's registration proposes the development of a virulent pathogen resistance (ViPaRe) technology to inactivate pathogens using CRISPR genome editing. Briefly, the ViPaRe system expressing guide RNAs and heterologous Cas nuclease (especially when a target pathogen does not possess it) will be designed to specifically disrupt vital machinery of the pathogen (e.g. *Staphylococcus aureus*). The committee tabled the registration pending details on the strain of *S. aureus* (antibiotic resistance profile, toxin production, etc.), specific genes that will be targeted, sgRNA design, and procedural details. The committee agreed that the Chair and/or Vice-Chair as well as the Biosafety Officer should meet with Dr. Trinh to clarify the committee's concerns and provide guidance on completing the registration with the necessary details.

Old Business:

Administrative Report

i. Contingencies

Following up on June 21, 2017, IBC meeting, Dr. Jiangang Chen's registration (#422-17) was corrected to include minor clarifications of procedural objectives in the technical summary. Dr. Stacy Stephenson's registration (#423-17) was corrected to include a clarification of human derived materials sources, lentiviral vector titers, as well as IRB and IACUC approval numbers.

ii. Administrative Approvals

Dr. Xuemin Xu's registration (#309-16) was administratively transferred to Dr. Mei-Zhen Cui, who is approved for similar biological hazards/rDNA and containment. Dr. Jon Wall's registration (#342-15) was approved by the IBC Chair to include the addition of silencing RNA (siRNA)-coated nanoparticles designed to knockdown the production of the human $\lambda 6$ light chain protein in Wil $\lambda 6$ light chain-producing mice.

iii. Administrative Terminations

None.

iv. Administrative Exemptions:

None.

v. Accidents, Injuries/Exposures:

None reported, but Brian will reach out to Dr. Robert Donnell to discuss sharps injuries associated with the CVM Necropsy unit. Reviewing safety procedures and reducing injuries is a programmatic goal for FY2018. The committee recommended for Dr. Donnell to attend the next meeting if at all possible.

vi. Laboratory Report

None.

iMedRIS Update, Manual Reviews, & System Orientation (Woofter)

None.

Committee Appointments

Drs. Marc Caldwell and George Dizikes have joined the committee. Brian will reach out to Dr. Buchanan, Knox County Public Health Director, for additional recommendations.

New Business:

Assignment of Technical Review

Brian notified the committee that at least one member will be assigned to each registration to perform an in depth review of the registration for the full committee meeting.

Charter-Strategy and Framework for Revising the Charter, Committee Bylaws and SOPs

Dr. Fozo notified the committee that the Charter is outdated and needs to be revised. She called for volunteers to serve on a Charter review subcommittee. Dr. Cole volunteered to serve on the subcommittee.

NIH Symposium/Guidelines Workshop - Lessons Learned

Brian attended the NIH Symposium that covered the past, present, and future of the *NIH Guidelines*. Discussions included: 1) reducing oversight and procedural stringency for low-risk hosts/projects (e.g. protein expression in *E. coli* BL-21); 2) designing a flexible framework to adapt to risk, particularly relative to emerging technologies (e.g. genome edition and synthetic biology); 3) establishing better coordination with regulatory agencies (USDA, EPA, and FDA); and 4) future role(s) of the Recombinant Advisory Committee. If/when the *NIH Guidelines* will be revised was not established.

FY17 Biosafety Program Annual Report

Brian notified the committee that he is still working on the FY17 Annual Report and will circulate it for review/comment as soon as possible.

FY18 IBC Meeting Schedule

Dr. White will not be present for the August 16, 2017 meeting. The committee requested to have a poll distributed to determine members' availability for the next meeting.

The meeting was adjourned at 2:44 PM. The next meeting is tentatively scheduled for 3 pm on August 16, 2017 in the Plant Biotechnology Building, Room 410.