

SINGHEALTH INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC) ROADSHOW

1st October 2009

**Get to know what we do?
Applications – Do's and Don'ts**

**Q and A
Suggestions**

IACUC FUNCTIONS

- Review of IACUC Applications
- Annual review of activities of IACUC protocols
- Bi-annual Facility Program Review, e.g. SEMC, NCC, Duke-NUS GMS
- Annual AVA reporting
- AAALAC accreditation review (site visit every 3 years)
- Annual AAALAC reporting
- Follow-up on animal welfare concerns

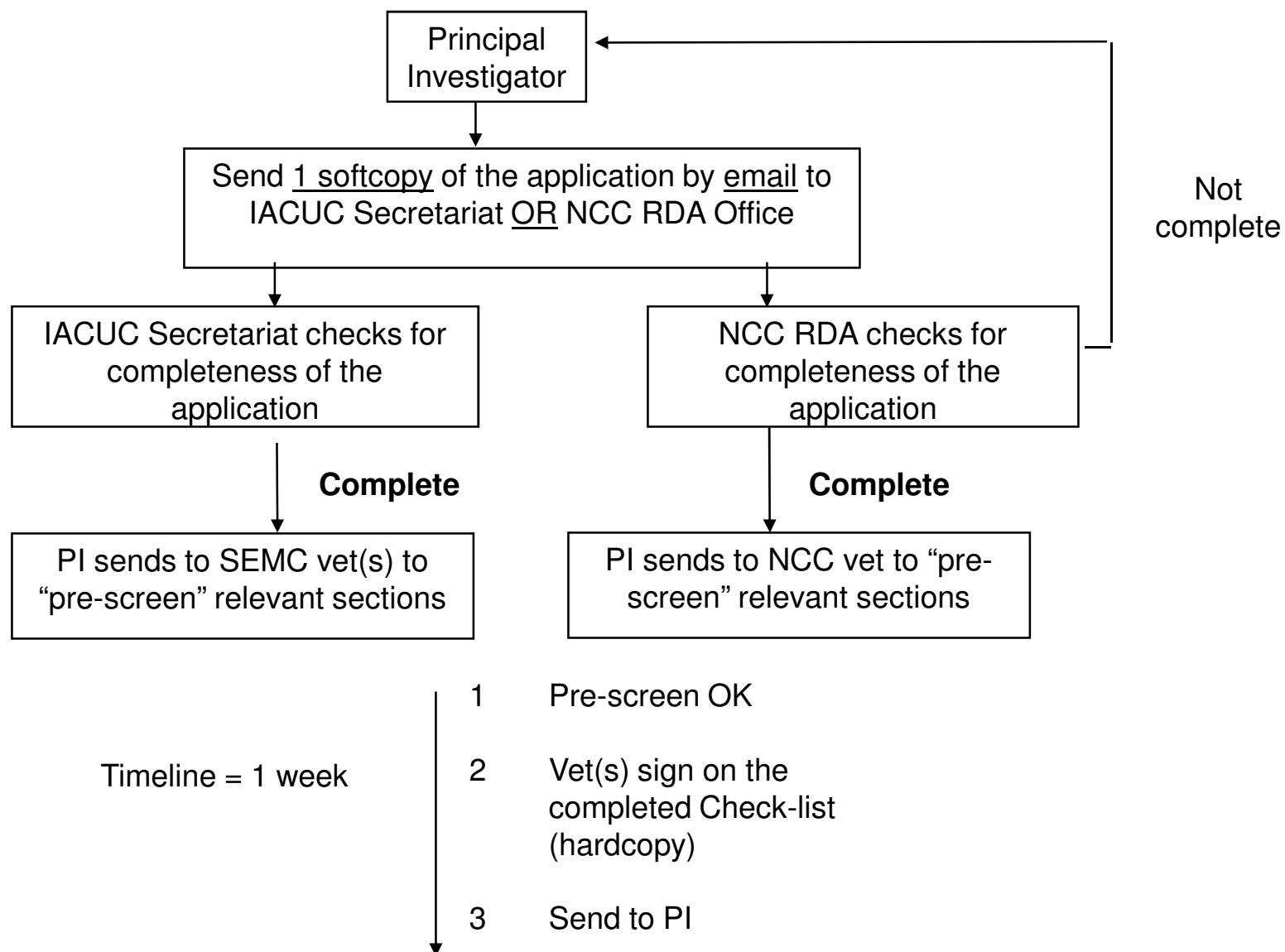
IACUC MEMBERS

- | | | |
|-----|-----------------------|------------------------------|
| 1. | Prof Kanaga Sabapathy | (Chairman) NCC |
| 2. | Ms Kuah Boon Theng | Legal Clinic LLC |
| 3. | Dr Douglas Ong | Douglas Ong Clinic for Women |
| 4. | Dr Bryan Ogden | SEMC |
| 5. | Dr Darvi Sergio | SEMC |
| 6. | Dr Amutha Barathi | SERI |
| 7. | Dr Keefe Chng | SICS.A-STAR |
| 8. | Dr Fred Chua | NCC |
| 9. | Dr David Ng | SGH |
| 10. | Dr Yee Woon Chee | SGH |
| 11. | Dr Ong Hock Soo | SGH |
| 12. | A/Prof Zhang Xiaodong | Duke-NUS GMS |
| 13. | Dr Paula Lam | NCC |
| 14. | Dr Li Huihua | NCC |
| • | Ms Yvonne Ng | Secretariat |

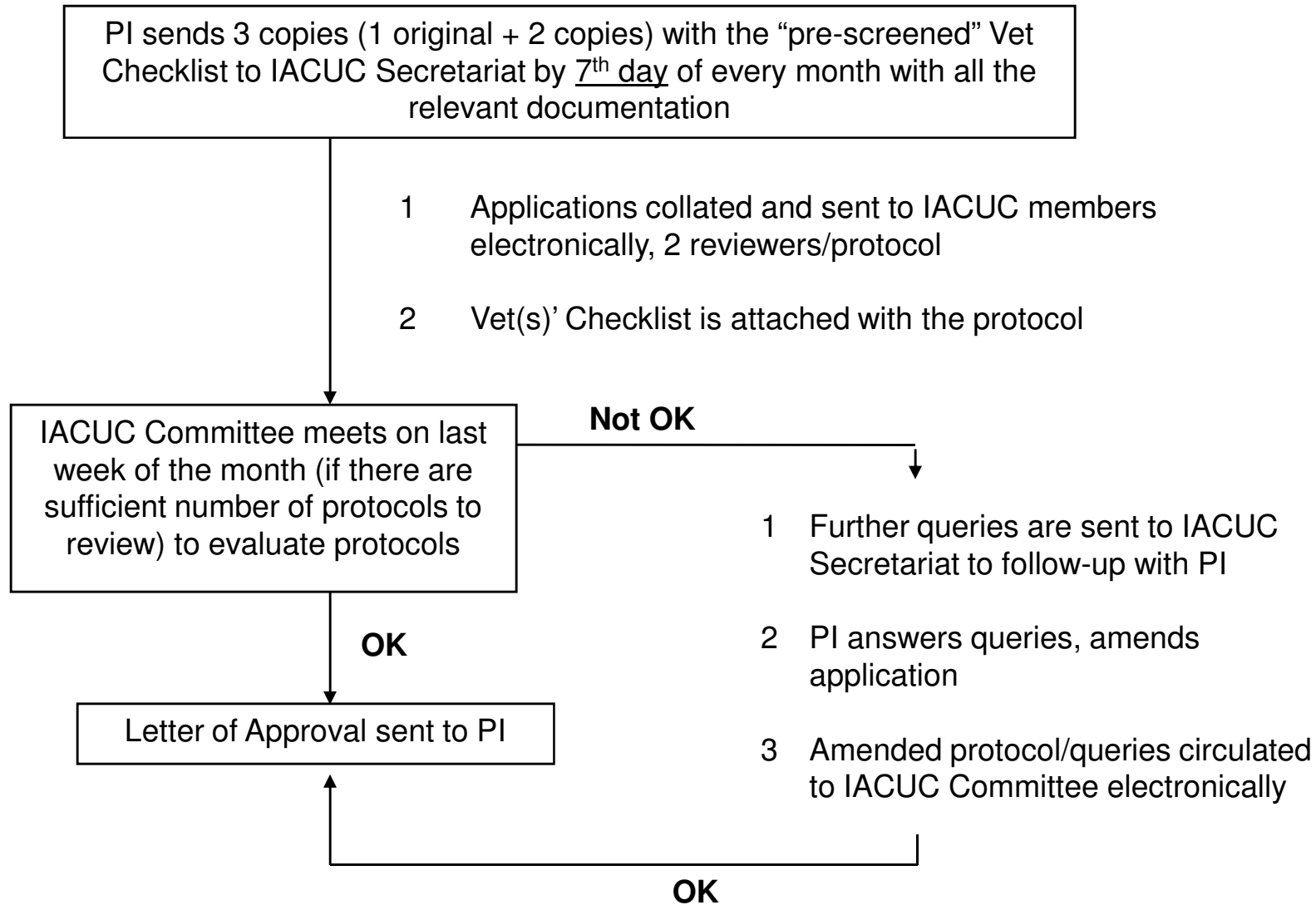
IACUC APPLICATIONS

- Approved IACUC protocol is required prior to commencement of work (Mandated by AVA and NACLAR)
- All applicants and co-workers must have RCULA certification
- Applications that involve biohazardous agents should be cleared by the SingHealth IBC prior to beginning of animal work (IACUC approval will be conditional in this case)

PROCESS FLOWCHART FOR REVIEW OF APPLICATIONS



PROCESS FLOWCHART FOR REVIEW OF APPLICATIONS (CONT'D)



KEY DEADLINES TO REMEMBER



Submission of Completed Applications : 7th of the month

Review of Applications:

Last Thursday of month
(8-10X a year)

WHAT'S NEW?

- **Revised IACUC Application Form** for better detail and easy reference
- **Improved Process Flow** for IACUC Submission and Approval Process
- **Primary and Secondary Reviewer System** – whereby two experts are assigned to review proposals in detail and to be presented at IACUC meeting
- **MOU with NUS** – Applicants working in SingHealth need only to submit applications to SingHealth IACUC for approval, even if they are NUS staff (and vice versa) (effective September 1st 2009)



WHERE TO GET THE APPLICATION FORM?

<http://research.singhealth.com.sg/Ethics/IACUC/Pages/Default.aspx>

IACUC - SingHealth Institutional Animal Care and Use Committee - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://research.singhealth.com.sg/Ethics/IACUC/Pages/Default.aspx

Singapore Health Services - www.SingHealth.com.sg

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Home > Ethics > IACUC

ETHICS

- CIRB
- IACUC
- CITI
- Study Volunteer

IACUC - SingHealth Institutional Animal Care And Use Committee

Submission Deadline for IACUC Applications

Complete applications submitted by the 7th of the month will be reviewed in that month.

Instructions/Checklist for Principal Investigator (Research Project) and Principal Course Facilitator (Training Course/Workshop) are provided on page 1 of the relevant IACUC application form.

Incomplete submissions will automatically be rejected and will not be reviewed.

IACUC Application Forms

1. [Research Project](#)
2. [Training/Workshop](#)

IACUC Reports

1. **Annual Project Update**

NACLAR Guidelines 8.2.4 "Investigators must inform the IACUC in writing when each project is completed or discontinued; and the outcome of each project."

It is the Principal Investigator's responsibility to submit the Annual Project Update report one year from the IACUC approval date and yearly thereafter if the project duration exceeds one year and to request for project extension where necessary. Failure to comply will lead to the suspension of the ability to place order for animals and/or the suspension of IACUC approval.
2. **Training/Workshop Report**

The report should be submitted on completion of the Training Course/Workshop. Failure to make this submission will be taken into account in future applications for protocol approval by the IACUC.

Done

start

12:34 PM

FILLING UP THE FORM





Declaration of Ethics/Biosafety Considerations

Please note that approval of this IACUC application is subject to approval by the Institutional Review Board (IRB) and/or Institutional Biosafety Committee (IBC) if your project involves human tissues or using materials requiring biosafety approval.

For more information on IBC and application form, see the following web links:
<http://mysinghealth/singhealth/corporateoffice/ibc>

For more information on IRB and application form, see the following web links:
<http://mysinghealth/singhealth/corporateoffice/research/support/irb.htm>
<http://research.singhealth.com.sg/Ethics/CIRB/Pages/Default.aspx>

Please tick, where appropriate, if your study involves the following:

Human subject	
Use of Human Tissues or Cells	
Requirement for containment Class 2 and above	
Use of infectious material requiring biosafety committee's approval" http://mysinghealth/singhealth/corporateoffice/ibc/aboutus/	

Application requires approval from: IRB IBC

If any of the above is applicable to your IACUC application, please complete the respective application forms for approval from the respective committees.

If your IRB and/or IBC applications have been approved, please indicate the protocol /approval number and date of approval below.

D. Animal Requirements:

- Correctness of the species.
- Appropriate age, weight, sex and size.
- Correct and Know Source of Animals
- Know animal holding and procedure location
Consistency of the animal numbers to be used
(don't omit total)

E. Rationale for Animal Use

- Replacement – substituting w/ non-living systems, in-vitro study, non-mammalian vertebrates or animal lower in the phylogenetic tree.
- Reduction- careful experimental design, rational selection of group size (based on previous work done, statistical methods, consult biostatistician)
- Refinement – Pain relieving Drugs, non-pharmacologic techniques

- **Choice of Animal-** proper choice of animal/anatomic compatibility – minimize genotypic & phenotypic variables in their physiological response
- **Justification of the no of animals to be used**
 - pilot studies, statistical methods, previous work
- **Using Pregnant Animals-**
 - care for offspring
 - account for nos. if there's a need to do genotyping

F. Transport of animals

- describe method of containment

G. Description of Experimental Design

- Short and Concise
- Diagram
- Animal Procedure Schedule
- Injections or Inoculations – appropriate site, correctness of volume and schedule, right needle gauge

- **Blood Withdrawals** – withdrawal site and frequency of volume collection
- **Non-survival procedures-**
 - correctness of the concentration of the euthanasia sol'n (mg/kg)
 - use of CO2 – cervical dislocation
- **Radiation** –dose & schedule
- **Methods of Restraint** –physical, chemical
- **Animal Identification** -ear tags, tattoo, cage card
- ***Resultant Effects** – describe anticipated resultant effects of the procedure

H. Humane Endpoint Criteria

- At any given time during the research study, animals that suffer from severe or chronic pain and distress that cannot be relieved with therapeutic intervention, must be painlessly euthanized.
- List the criteria used to determine when therapeutic intervention or euthanasia needs to be administered (if it is called for), and what treatments are allowable without interfering with expected results.
- Death as an endpoint must always be scientifically justified.

- Tumour size (specify growth in cm) – more than 2000 mm³
- More than 20% bodyweight loss over 1 week OR more than 10% over 24 h.
- Inability to eat or drink
- Behavioural abnormalities such as vocalisation, hunch posture, CNS signs, shivering, decreased activity, immobility.
- Clinical symptomatology such as ruffled fur-coat, lameness, paralysis, dyspnea, vomiting, edema, not eating or drinking, abnormal discharge
- Signs of toxicity
- Wound infection or dehiscence
- Haematemesis (vomiting of blood)
- Severe or chronic pain
- Severe bleeding
- Others _____

I. Anaesthesia/Analgesia/Tranquillisation



Specify the anaesthetics, analgesics, sedatives or tranquillisers that are to be used. Include the name of the agent(s), the dosage, route and schedule of administration.

Schedule	Agent	Dose	Route
Tranquillisation	Acepromazine	5 mg/kg *	IM
Induction	Ketamine	40 mg/kg	IM
Maintenance	Isoflurane	1-2%	Inhaled via mask (vs via endotracheal tube)
Analgesia	Buprenorphine	0.1 mg/kg q12h for 3 days	SC
Antibiotics	Enrofloxacin	5 mg/kg bid for 5 days **	SC

* **Begin prior to or at the time of anaesthesia, if possible**

** **Begin \geq 2 hours before surgery, if possible**

J. Survival Surgery:

1. Identify and describe the surgical procedure(s) to be performed. Include the aseptic methods to be utilised, suture materials used and when sutures will be removed
 - **Aseptic methods:** include shave, scrub, drape, sterile instruments, gloves, etc.
 - **Details:** incision site, size, etc.
 - **Suture material:** absorbable vs non-absorbable, pattern, suture removal

2. Who will perform the surgery and what are their qualifications and/or experience?
(Attach record of formal training in animal surgery if any and publication references.)
 - Summarize
 - Plus attach relevant cert and/or publications

3. Where will surgery be performed ?
 - Specific site
 - Major surgery in non-rodents require dedicated surgery suite
 - Rodent surgery in or out of animal facility

J. Survival Surgery (con't):

4. Describe post-operative care and monitoring required, highlight and identify the individual responsible. State parameters to be monitored.
Attach post-operative care check-list
 - Specific individual
 - Parameters
 - Checklist
5. Has major surgery been performed on any animal(s) prior to being placed in this study? If yes, please explain.
 - Major surgery – “penetrates and exposes a body cavity or produces substantial impairment of physical or physiologic function”.
6. Will more than one major survival surgery be performed on an animal while in this study? If yes, please justify.
 - Multiple major survival surgery
 - Scientific justification

K. Pain & Distress Category:

The proper use of animals is imperative. This includes avoidance or minimisation of discomfort, distress and pain consistent with sound scientific practice. Unless evidence to the contrary is established, investigators should consider procedures causing pain and/or distress to human beings will also cause pain and/or distress to animals. For in-depth information on Anesthetic Management, Euthanasia and dosage of drugs, see the following weblinks:

- <http://dcm.info.wustl.edu/pdf/PDF/Welcome.pdf>
- <http://www.uab.edu/uabra/arp/drugandsupply/LabAnimalFormulary>
- http://www.dar.emory.edu/forms/Vet/Analgesic_drugs_05.pdf
- http://www.dar.emory.edu/vet_drug_anesthetic.htm
- <http://www.iacuc.ucsf.edu/Proc/awDosages.asp>
- http://www.avma.org/issues/animal_welfare/euthanasia.pdf

Formulatory for primates.xls will be added as weblink in the SHS intranet

Number of **NEW** animals used per year

Index of Severity	Year 1	Year 2	Year 3
• Minimal, Transient, or No Pain or Distress	5	10	10
• Pain or Distress Relieved by Appropriate Measures	5	15	15
• Unrelieved Pain*			

* For this category, scientific justification is required to explain why the use of anaesthetics, analgesics, sedatives or tranquillisers during and/or following painful or distressful procedure is contraindicated.

- Unrelieved pain
- Scientific justification
- AVA



L. Method of Euthanasia/Animal Disposal at the End of the Study (see above websites at page 10 of this application):

Indicate the proposed method, and if chemical agent is used, specify the dosage and route of administration. If the method(s) of euthanasia include those not recommended by the AVA like decapitation or cervical dislocation without anaesthesia, provide scientific justification why such methods be used. Indicate the method of carcass disposal.

Method	Description
CO ₂ Inhalation	(Rodents only - not for rabbits or large animals)
Injectable Agents	Pentobarbital 85 mg/kg IV
Physical Method	Cervical dislocation under anaesthesia
Others	

- American Veterinary Medical Association (AVMA) Guidelines on Euthanasia, June 2007
http://www.avma.org/issues/animal_welfare/euthanasia.pdf
- Scientific Justification for other methods

INSTITUTIONAL VET'S CHECKLIST



Institutional Vet's Checklist

Proposal #: _____
 Application Date: _____
 Approval Date: _____
 Expiration Date: _____

PI:
Project Title:

		Satisfactory		Remarks
		No	Yes	
Sections				
D	Animal Requirements			
E	Rationale for Animal Use			
F	Transport of Animals			
G	Description of Experimental Design & Animal Procedures			
H	Humane Endpoint Criteria			
I	Anaesthesia/Analgesia/Tranquillisation			
J	Survival Surgery			
K	Pain & Distress Category			
L	Method of Euthanasia/Animal Disposal at the End of the Study			
M	Hazardous Agents			
N	Biological Material/Animal Products for Use in Animals			
O	Special Concerns/or Requirements of Study			

Additional Comments

Institutional Vet:	NCC	SEMC
Name:		
Signature:		

SUBMIT COMPLETED IACUC APPLICATION FORMS



Instructions/Checklist for Principal Investigator

- ◆ Complete all sections in the application form by typing in clearly and attaching additional information and relevant documents where necessary. Indicate 'NA' where not applicable.
- ◆ Consult SEMC/NCC vets before submission for IACUC review to ensure the protocol is professionally put up.
- ◆ Only one PI is allowed per application and the PI and team collaborators must have attended the 'Responsible Care & Use of Laboratory Animals' course. Project team members including research assistants who are expected to handle animals must be included in the list of team collaborators.

◆ Documents for submission:

- 1 hardcopy application form bearing original PI's signature, name-stamp and date.
- 2 sets photocopies of the above endorsed application (photocopy 2-sided to save paper).
- 1 set photocopies of the project team's 'Responsible Care & Use of Laboratory Animals' course certificates.
- Softcopies of the application and the project team's short CVs with recent publication references to be emailed to SingHealth IACUC Secretariat.

SingHealth IACUC Secretariat @ SingHealth Office of Research

7 Hospital Drive #04-02 Block A (former School of Nursing), Singapore 169611

Email: yvonne.ng@singhealth.com.sg

SingHealth IACUC website sited on SingHealth Research Intranet & Internet

RESPONSIBILITIES OF PI

- Know what is being filled up in the form/familiar with project and experimental protocol
- PI should be responsible for submitting completed forms and amendment requests
- All changes to approved protocol **MUST** be submitted as amendments and approved by the IACUC
- All staff involved in the PI's IACUC protocol should know and follow the IACUC protocols
- Time-lines for submission
- Plan your experiments and training courses
- Taking responsibility in communicating with the IACUC office
- Submitting annual reports and end-of-project report



COMMON CONCERNS/MISTAKES

- Using the wrong Application form
- Not submitting on time – and sending enormous amounts of emails to push for review
- Incomplete forms (without RCULA certificates and CVs)
- Non-lay descriptions in IACUC forms (cutting and pasting from grant applications)



THANK YOU