

# Vanderbilt Internal Grants



# Types of Internal Funding

1. Vanderbilt Institute for Clinical and Translational Research (VICTR) Grant
2. Department of Anesthesiology Innovation Grant

### **Who Can Apply for VICTR Resources?**

Vanderbilt Investigators, including Research Fellows and Post-doctoral Fellows, are eligible for funding.

### **Who Funds VICTR Resources?**

Clinical and Translational Science Award (CTSA) (NCRR/NIH **UL1 RR024975**) and other granting agencies.

### **Partial or Full VICTR Funding**

VICTR resources may be requested to supplement funding obtained from other sources.

## Vanderbilt Institute for Clinical and Translational Research (VICTR)

### **Vouchers**

- < \$2,000 qualify for expedited review by a subcommittee.
- Funding decision will be emailed in 2-3 working days.
- Vouchers have a 3 month expiration date with a one-time extension of 3 months for a total award period of 6 months.
- A researcher is allowed 2 voucher requests in a 6 month period.
- May be exceptions to these limitations if you are requesting CRC resources or expert consultations.

## Vanderbilt Institute for Clinical and Translational Research (VICTR)

### **VICTR Resource Requests:**

Requests  $> \$2,000$  but  $\leq \$10,000$  qualify for expedited review (by the SRC Chairperson). If no additional information is needed, a funding decision will be emailed within 2 to 3 weeks.

## Vanderbilt Institute for Clinical and Translational Research (VICTR)

### **VICTR Resource Requests:**

> \$10,000 but  $\leq$  \$100,000 require full VICTR SRC committee review; this includes amendments that increase cumulative budget to >\$10,000.

# Vanderbilt Institute for Clinical and Translational Research (VICTR)

## **VICTR Resource Requests**

Requests > \$100,000 require full VICTR SRC and VICTR Executive committee review; this includes amendments that increase cumulative budget to >\$100,000.

## **Items that are not fundable by VICTR:**

1. Non-human studies or samples
2. Animal purchase, housing and food
3. Salary Support for PI or KSP
4. PI & study team travel for meetings
5. Expert Speaker fees



## **Items that are not fundable by VICTR**

6. Publication fees
7. Meharry direct expenses (salary support)
8. Radio or Television Advertising
9. Computer purchases
10. Petty Cash (Subject participation payments allowable with special consideration as gift cards and checks to participant)

## Vanderbilt Institute for Clinical and Translational Research (VICTR)

### **Resource Request Procedures:**

- Submit proposal to VICTR

<https://starbrite.vanderbilt.edu/funding/src/>

- Pre-review process takes place within 2 weeks
- Study will then be placed on the next available SRC agenda
- PI is usually requested to give a brief presentation to the SRC
- The SRC will give a funding decision recommendation
- Awards are granted for up to 5 years

# **Vanderbilt Pathology Laboratory Services Web Site**

[HTTP://WWW.MC.VANDERBILT.EDU/ROOT/VUMC.PHP?SITE=VPLS](http://www.mc.vanderbilt.edu/root/vumc.php?site=vpls)

# Key Elements to your submission

## VICTR Research Proposal (Limit to 5 pages)

Include:

*Specific Aims and Hypothesis*

*Background and Significance*

*Preliminary Studies/Progress Report*

*Research Design and Methods*

*Sample size justification and statistical analysis plan*

*Literature Cited (Not included in 5 page limit)*

PLEASE NOTE that if your total budget request is less than or equal to \$2,000, you will NOT be asked for any documents.

# Key Elements to your submission

- PI & Co-PI Biosketches
- Detailed Budget

If you request funding for a resource not provided by a core facility resource, you must obtain a quote from the service provider. You will be asked to enter the amount of funding you are requesting in the application.

# Investigator Presentations

- The Principal Investigator or a designee will present a 5 minute overview of the study and what resources are requested from VICTR.
- Approximately 1 hour time commitment is required depending on the number of requests being presented.
- Presenters will be asked to leave during committee discussion, but be available by phone should some clarification be needed.

## Title of the Study

- Names of co-investigators & Affiliations
- Please clarify if your VICTR resource request
  - will support an already funded (NIH etc) project, or
  - will be used to gather data for specific extramural funding (specify a PA/RFA if relevant)
- Please indicate who is/are your mentor/s if you are junior faculty

## Significance, Aims & Overview of the Study

- Include the specific problem the study will address
- Hypothesis
- Aims



# Study Design and Methods

(If amendment highlight specific changes)

## Study Design

- Overview of design
- Measures and variables of interest to answer the question

## Study Population

- Sample size
- Inclusion/Exclusion Criteria
- Where will these participants be identified/recruited?

## Outcomes

- Big picture application
- The “so what”
  - Clarify potential translation / application of outcomes
  - How would this be significant / what kind of impact would be created?
- Future directions

# ***Peri-Anesthetic Imaging of Cognitive Decline: PAICOD – A Pilot Study***

James L. Blair, DO – Assistant Professor, Dept. of Anesthesiology, VUMC

Max Gunther, PhD – Assistant Professor, Dept. of Psychiatry, VUMC

Pratik Pandharipande, MD – Assoc. Prof., Dept. of Anesthesiology and Critical Care, VUMC

Joseph A. Smith, MD – Professor & Chairman, Dept. of Urology, VUMC

Jonathan Schildcrout, PhD – Assistant Professor, Dept. of Biostatistics

Yaping Shi – Fellow, Dept. of Biostatistics

Catherine E. Crenshaw Price, PhD, University of Florida

Baxter Rogers, PhD, Assistant Professor, Radiology, VUIIS

John Gore, PhD – Professor & Head, Vanderbilt University Institute of Imaging Science

Vanderbilt Institute for Clinical & Translational Research

RESEARCH FUNDING REQUEST

# ANESTHETIC TOXICITY?

- CURRENTLY, Anesthetics Considered SAFE...
- Really?
- Anesthetics affect: Gene expression,
  - protein synthesis & processing, cellular function
- PEDIATRIC POPULATION < 1 Year
- GERIATRIC POPULATION > ~60
- Reversible alterations of consciousness...<sup>2</sup>
- ISPOCD – Established “Diagnosis” of POCD
- Mahanna demonstrated variability<sup>1</sup>

## Significance of Study

**Anesthetics may produce** a profound, long-lasting effect on the brain.<sup>2</sup> For some, manifestations of this effect may be **POCD**.

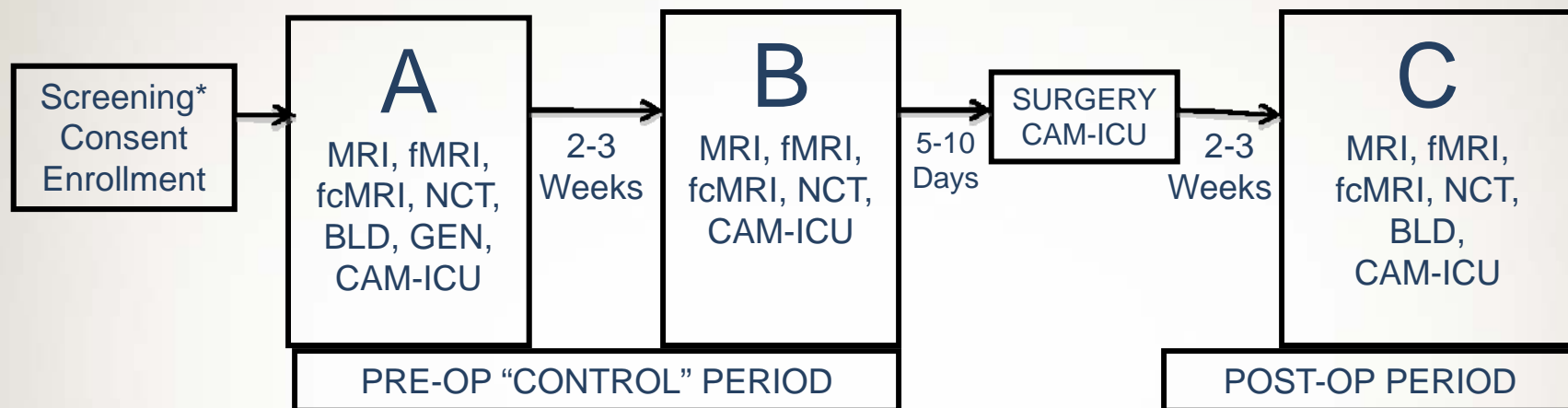
- ALL prior studies (NCT) have produced ***demographic data only***... we know what –
- ***We need to know how and why.***
- Current study ***the first to actually prospectively “look inside” the head*** to evaluate what changes surgery and anesthesia may cause in the brain.

# HYPOTHESES

1. **Physical changes** in brain related to anesthesia & surgery can be shown with MRI.
2. **Functional changes** in brain associated with cognitive decline are intimately related to anesthesia and surgery, and can be demonstrated with fMRI & fcMRI.
3. **Cognitive changes** associated with anesthesia and surgery as measured by NCT *will correlate* with anatomic and functional MRI.

# Study Design

## Study Time Line



\*Screening = MMSE; BLD = Cytokine Draw; GEN = Genetic Sampling;  
CAM-ICU = Confusion Assessment Method (Delirium Screening);  
MRI = *Anatomic* Magnetic Resonance Imaging; fMRI = *Functional* MRI  
fcMRI = Functional Connectivity of MRI; NCT = Neurocognitive Testing

# NCT, MRI, Further

- **Neurocognitive Testing** : Memory, Language, Visuospatial Perception, Processing Speed, Concept Shifting/ Distractability/Inhibitory Function; RBANS
- **Confounders:**
  - Beck Depression; State-Trait Anxiety; VAS Scoring
- **Scanner: MRI:** Brain Volumes, ASL, DTI; **fMRI:** N-Back; Resting Connectivity (fcMRI)
- Blood draw - Later cytokines:  $\text{TNF}\alpha$ , IL-6, IL-8, C5a; Later Genetic Analysis



# Outcomes

- **This is a Pilot Study leading to an RO1 or R21, Seeking to:**
  - Characterize physical brain changes associated with Anesthesia/Surgery AND Cognitive Decline
  - Show a relationship between NCT & MRI
  - *Define* the relationship between Anesthesia & Cognitive Decline
  - Learn how Perioperative Cognitive Decline may be related to dementia, delirium, PTSD, and how/if it differs from MCI
- **Potential Application of Outcomes**
  - Prevention of POCD
  - Reduction of risk for POCD
  - Rank-order anesthetic agents relative to risk of promoting POCD
  - Development of fMRI/Neurocognitive testing paradigm to evaluate:
    - Neurocognitive effects of specific surgical procedures
    - Potential neurocognitive comorbidities associated with anesthesia

# Future Directions

- **ANESTHETICS** - *anesthetic agents may well have Neurotoxicities – especially for the very young and the old* – currently very poorly defined
- **fMRI and NEUROCOGNITIVE TESTING** - synergistic tools that can be extended to genetic studies to personalize anesthetic management
- **INHALATIONAL ANESTHETICS** - General anesthetics may be related to POCD. Contrarily, *there may be drugs that are protective*. fMRI/fcMRI/NCT paradigms may help to separate these effects.
- **TOWARDS A USEFUL DEFINITION** – fMRI will provide a *physical, neuroanatomic description* of POCD previously loosely defined only as neurocognitive change.
- **REFINE POPULATION STUDIES** - Establish evidence-based testing to identify patients at greatest risk for POCD, before surgery, by deploying a
- **SCREENING INSTRUMENT** – In Pre-op Clinic (VPEC) establish a Touch-screen, Computer-based, Neuropsychological Screening Instrument (COMBANSI) for Pre-op neurocognitive screening. By employing *VAPORS\**, develop and deploy an effective, computer-based *POCD Risk Assessment* system useful nationally.

## VICTR Resource Request

- List specifics of request (must match the submitted VICTR application)

## Study Budget & VICTR Resource Request

- **COVERED BY ANESTHESIA INNOVATIONS GRANT:**

• Cognitive Testing (15 Participants x 3 test periods) \$50 x 45 =	\$2,250
• Psychometric Test Purchase Costs (Approximate)	\$1,000
• Initial Participant Payments @ \$75 x 2 x 15 Participants =	\$2,250
• 3 <sup>rd</sup> Testing Participant Payments @ \$150 x 15 Participants =	\$2,250
• Mileage Reimbursement @ \$50.00 x 3 x 15 Participants =	<u>\$1,500</u>
• TOTAL – INNOVATIONS GRANT COVERAGE:	\$10,000

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- **COVERED BY VICTR FUNDS:**

• 3 MRI Scans @ \$675 x 15 Subjects =	\$30,375
• 3 MRI Analyses @ \$600 x 15 Subjects =	\$27,000

- **TOTAL DIRECT VICTR COSTS** **\$57,375**

- **Scans (23) courtesy of Dr. John Gore and VUIIS** **-\$15,525**

- **REMAINDER IN THIS VICTR REQUEST:** **\$41,850**

# Financial Accountability and Compliance Tracking for Research (FACT<sup>R</sup>)

[HTTPS://WEBAPP.MIS.VANDERBILT.EDU/FACTR/INDEX.JSP](https://webapp.mis.vanderbilt.edu/factr/index.jsp)

# Innovation Grants Program

The primary goal of the Anesthesiology Innovation Grant Program is to promote Investigator Initiated research for early stage projects that will lead to publication and, ideally, to extramural funding.

## Innovation Grants will fund:

1. Clinical and translational research that has a high probability of **improving patient care** and leads to publication in top tier journals.
2. High risk and highly innovative basic science **unlikely to be funded** by conventional mechanisms and that has a **high probability of leading to significant extramural funding**.

# Innovation Grant Request Submissions

- Requests under \$5000 can be submitted at any time and will be reviewed by the Anesthesia Research Executive Committee on a continual Basis.
- Requests  $> \$5,000$  but  $\leq \$50,000$  are submitted May 1<sup>st</sup> or November 1<sup>st</sup>.



# Anesthesiology - Biostatistics Collaboration Plan

[HTTP://BIOSTAT.MC.VANDERBILT.EDU/WIKI/MAIN/ANESTHESIOLOGYCOLLABORATION](http://biostat.mc.vanderbilt.edu/wiki/main/AnesthesiologyCollaboration)

Questions?