**Section: Contact Information**

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**Section: Project Requirements and Description**

**Group: Requirements to submit AOI**

A comprehensive review of previously published data has been completed. : Yes 
The specific aims are clear and focused. : Yes  
The investigator has appropriate experience and expertise to develop the concept proposal; if not, has identified a mentor or senior co-investigator. : Yes  
The investigator agrees to develop an initial draft of the concept proposal within 6 weeks of approval of the AOI and to finalize the concept proposal within 6 months. : Yes  
Project Title: Examining the Associations between Frailty and Sleep in Long-Term Survivors of Childhood Cancer  
Planned research population (eligibility criteria):  
**Eligibility Criteria**  
Aim 1: We plan to utilize existing data from the CCSS Cohort  
• Survivors who completed surveys FU5 and FU6 

Aim 2: We plan to collect new data from 150 survivors who meet the following criteria:  
• Diagnosis group: CNS tumors (n=50), non-CNS solid tumors (n=50), or leukemia (n=50)  
• Completed FU5 or FU6 long survey  
• Smartphone (Android or IOS)  
If feasible, we intend oversample frail/pre-frail survivors among each diagnosis group (Aim 3):  
• CNS tumor survivors (n=25 frail/pre-frail; n=25 non-frail)  
• Non-CNS solid tumor survivors (n=25 frail/pre-frail; n=25 non-frail)  
• Leukemia survivors (n=25 frail/pre-frail; n=25 non-frail)  
Proposed specific aims:  
Aim 1: To examine associations between the Fried frailty phenotype (frail, pre-fail, non-frail) and dimensions of self-reported sleep (i.e. sleep quality, sleep duration, sleep timing, snoring, wake after sleep onset, sleep onset latency, and sleep efficiency).  

Aim 2: In a sub-sample from the CCSS cohort (CNS tumors, non-CNS solid tumors, leukemia), to further classify sleep disturbances by obtaining additional self-reported and objective measures of sleep (i.e., sleep behaviors, insomnia, sleep-disordered breathing, daytime sleepiness).
Aim 3: In this sub-sample of survivors, to examine associations between frailty and sleep disturbances.
Will the project require non-CCSS funding to complete? : Yes
If yes, what would be the anticipated source(s) and timeline(s) for securing funding? :
I plan to apply for the CCSS Career Development Award for the funding needed to complete additional data collection in a sub-sample of approximately 150 survivors (Aims 2 and 3).

**Group: Does this project require contact of CCSS study subjects for:**

Additional self-reported information : Yes
Biological samples : No
Medical record data : No
If yes to any of the above, please briefly describe. :
If the proposed project receives funding support, we plan to collect additional self-reported sleep measures (ISI, ESS, SHAPs) and an objective measure of sleep-disordered breathing, which can be measured remotely via a disposal device and mobile app (WatchPat One).

**Group: What CCSS Working Group(s) would likely be involved? (Check all that apply)**
Second Malignancy :
Chronic Disease : Secondary
Psychology / Neuropsychology : Primary
Genetics :
Cancer Control :
Epidemiology / Biostatistics : Secondary

**Section: Outcomes or Correlative Factors**
Late mortality :
Second Malignancy :

**Group: Health Behaviors**
Tobacco : Correlative Factors
Alcohol : Correlative Factors
Physical activity : Correlative Factors
Medical screening :
Other :
If other, please specify :

**Group: Psychosocial**
Insurance : Correlative Factors
Marriage : Correlative Factors
Education : Correlative Factors
Employment : Correlative Factors
Other :
If other, please specify :

**Group: Medical Conditions**
Hearing/Vision/Speech:
Hormonal systems:
Heart and vascular:
Respiratory:
Digestive:
Surgical procedures:
Brain and nervous system:
Other: Correlative Factors
If other, please specify: Frailty

**Group: Medications**
Describe medications:

**Group: Psychologic/Quality of Life**
BSI-18:
SF-36: Correlative Factors
CCSS-NCQ:
PTS:
PTG:
Other: Primary
If other, please specify: Sleep Disturbances

**Group: Other**
Pregnancy and offspring:
Family history:
Chronic conditions (CTCAE v3): Correlative Factors
Health status:

**Group: Demographic**
Age: Correlative Factors
Race: Correlative Factors
Sex: Correlative Factors
Other:
If other, please specify:

**Group: Cancer treatment**
Chemotherapy: Correlative Factors
Radiation therapy: Correlative Factors
Surgery: Correlative Factors

**Section: Anticipated Sources of Statistical Support**
CCSS Statistical Center: Yes
Local institutional statistician:
If local, please provide the name(s) and contact information of the statistician(s) to be involved.
Will this project utilize CCSS biologic samples?: No
If yes, which of the following?:
If other, please explain:

**Section: Other General Comments**
Other General Comments:
I have identified a mentorship team with expertise in sleep and frailty to provide support for this study, Dr. Kevin Krull, Dr. Tara Brinkman, and Dr. Kiri Ness.

I plan to submit this proposal for consideration of the CCSS Career Development Award. I agree to share this information with St. Jude: Yes