



Pandemic Induced Paradigm Shifts: CaRE² Cancer Education and Research Adapts to Meet the Challenges

Bereket Mochona*, and Kinfe K. Redda, Florida A&M University (FAMU), Tallahassee, FL
Ite Offringa, University of Southern California (USC), Los Angeles, CA
Debra Lyon and Allen John, University of Florida (UF), Gainesville, FL

Research Education Core (REC)

Florida-California Cancer Research, Education & Engagement (CaRE²) Health Disparity Center

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CaRE²: Cancer Disparity Training Program Through a TRIAD Partnership



Florida A&M University (FAMU), Tallahassee, FL
(Minority-Serving Institution)



USC University of
Southern California

University of Southern California (USC), LA, Ca.
(Norris Comprehensive Cancer Center
& Keck School of Medicine)



University of Florida (UF), Gainesville, FL
(Comprehensive Medical & Academic Center)

CaRE² Long-term Goals

Website: (<https://care2healthequitycenter.org>)



- ❑ **Identify and study health disparities** in Black and Latino populations in Florida, California and nationally;
- ❑ **Train and increase** the pool of Black and Latino scientists conducting health disparity research;
- ❑ **Increase cancer research capacity** at FAMU;
- ❑ **Increase cancer disparity research** at USC & UF.

CaRE²: Research Education Core (REC)

Designed to coordinate the training of URM candidates at multiple academic & Professional Levels.

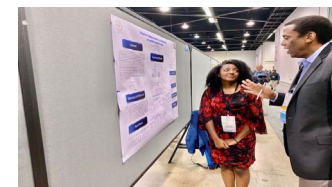
- ❑ **12-week Summer Undergraduate Cancer Training at FAMU**
- ❑ A Year-long **Postbaccalaureate (Postbac)** academic & research mentoring at UF, USC & FAMU
- ❑ Academic & Professional development for **Graduate, Postdoctoral & ESIs** at UF, USC & FAMU

REC Activities: Face-to-Face Mentoring

(Summer Undergraduate Cancer Research Training at FAMU)

In year-1, (Pre-pandemic) Funding Cycle:

- Individualized Research Mentoring
- Seminar Series
- Professional Development Series
- Community Outreach Programs
- Conference Presentations



REC: Designing Virtual Training Program (Summer 2020 & 2021)



COVID-19: Challenges

- ❑ Absence of emotional elements associated with face-to-face research training;
- ❑ Lack of hands-on mentoring and supervision;
- ❑ Designing effective virtual research training that align with CaRE² mission.
(Abrupt transition to Virtual training).

REC: Innovative Virtual Training Strategy (Summer 2020 & 2021)



Structured in two sessions:

- I. Morning Session: Research Related Activities
- II. Afternoon Session: Research Enrichment Activities

Morning Session: Trainees were placed into three virtual research classes.

I-Public Health Research

Epidemiology
Biostatistics

II-Genomics Class

Bioinformatics
RNA Seq

III-Biomedical Class

Drug Design
Molecular Modeling

Active Learning Strategy: *Canvas Learning System / Zoom Conferencing Technologies*

Mentor Guided – Trainee Centered – (Research design, Data Collection & Analysis)

Weekly Group Meetings - Research Progress Reports

Biweekly Mini-presentations (Literature Review & Findings)

Online Short Course:

CITI-Responsible Conduct of Research Training - Certification;

Harvard School of Public Health Course on Pandemics - Certification;

FAMU CANVAS based Chemical safety training - Certification.

REC: Resources & Strategies (Morning Session) Summer 2020 & 2021)



PART-1: Programs & Tools Used for Data Gathering & Analysis

- ❑ Florida Department of Health, [Cancer Data System](#);
- ❑ Dept of Health [Covid19/Analysis of Real Time](#) State of Florida incidence Data;
- ❑ Bioinformatic data mining of [the Cancer Genome Atlas \(TCGA\)](#) Program;
- ❑ RNA Seq sample data analysis using [R-biostats packages](#);
- ❑ *Molecular Docking Studies* ([NIH Protein Data Bank](#), [UC San Francisco Computational Resource](#));
- ❑ calculation of important molecular properties as well as prediction of bioactivity score: [Molinspiration Cheminformatics](#);
- ❑ [Spectroscopic Data Analysis](#) /Chemdraw application.



REC: Resources & Strategies (Afternoon Session) Summer 2020 & 2021)

PART-II: Research Enrichment Activities:

- ❑ **Seminar Series & Trainee-guided Group Discussions**
(Invited Guests (USC,UF), FAMU role models);
- ❑ **Webinar Series (Recorded)**
(The NIH Office of Extramural Research (OER));
- ❑ **Professional Development & Networking**
(Graduate/Professional School Application, Social networking)
Writing personal statement, Application process, Interview skills;
- ❑ **Communication skills**
(Progress Report, Power point & Poster Presentation for FAMU closing ceremony,
AACR, ABRCMS conferences);



U54 CaRE² - REC Partnership Benefits

- ❑ **Bicoastal Partnership with strengthened collaboration;**
- ❑ **FAMU Faculty and Students shared expertise and resources from USC and UF;**
- ❑ **Increased the competitive edge of all trainees to apply to grad./ prof. Schools;**
- ❑ **Developed a hybrid training program & Submitted R25 Research Education Training Proposal to NCI/NIH;**
- ❑ **Submitted Manuscript #2 to J. Can. Ed.;**
- ❑ **Increased number of abstracts submitted to ABRCMS due to virtual submission.**



COVID-19 Innovations: Dignity Therapy RCT for Older Adults with Cancer

Destiny Gordon, B.S.
Cohort 1 CaRE² Postbac

Diana J. Wilkie, PhD, RN, FAAN
MPI CaRE²

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Problem & Solution

- **Problem:** Adapting to the COVID-19 pandemic just as we were starting step 4 of a five-step stepped-wedge RCT conducted at 6 sites across the U.S.
 - Participants were ≥ 55 years of age, receiving outpatient palliative care for cancer
- **Solution:** Converted to an all virtual study



Study Training

- **Training of DT therapist**
 - Trainers used a Combination of asynchronous, pre-recorded videos shipped on external drives and synchronous Zoom sessions with trainers and standardized patient experience, and tracking form.
 - CRC securely monitored Zoom-recorded therapy sessions.
- **Training of CRCs**
 - Interactive Zoom meetings
- All meetings were held via Zoom to guarantee safety of the team.
- To ease the team's stress during COVID, tracking processes were implemented to focus on essential details.





Recruitment & Consenting

- **Referral:** During the patient's telemedicine visit, the provider introduced the study.
- **Recruitment:** CRC contacted the patient about the study via email or phone to initiate virtual recruitment.
- **Consenting:** We introduced our participants to REDCap-delivered eConsent. The participant was able to virtually sign the consent form via phone or computer.



Remote visits

- Patient-centric technologies, including Zoom and text, were used during each visit to collect data or deliver the Dignity Therapy.
- Using zoom, the study team was able to record, and safely monitor all remote visits.
- This ensured the safety of our study team and participants.
- Also it decreased the burden of in person visits, especially with our fragile study population.
- Essential documents were emailed to our participants to establish transparency.





Outcomes

- Enrollments by step:

Site	Step 1	Step 2 (10/18-8/19)	Step 3 (8/19-7/20)	Step 4 (7/20-now)
Site 1 South East	14	23	13	44
Site 2 South Central	27	20	14	28
Site 3 North Central	22	6	15	28
Site 4 North Central	26	32	13	27
Site 5 West	28	18	24	39
Site 5 South East	22	16	23	58

Conclusions

- Going forward, we must connect all lessons learned during this pandemic.
- We have shown a relevant change in the way cancer clinical studies can be conducted. It is a paradigm shift.

