

RFA 34305-22319 CMP Reinvestment  
Program Application Checklist

Applicants Name: \_\_\_\_\_

Page(s) #:	Required Element:	PASS	FAIL
_____	Cover letter is included and addressed to: Vincent Davis, State Survey Agency Director 665 Mainstream Drive, 2nd Floor Nashville, TN 37243	_____	_____
_____	Cover letter is signed by facility administrator if nursing home or signed by project administrator if other.	_____	_____
_____	CMS Fillable Application ( <b>Attachment 1</b> ) is included and is signed by an individual who can legally sign a contract with the State of Tennessee.	_____	_____
_____	All applicable blanks are completed in CMS application including Tax Identification number, and if applicable, Medicare/Medicaid numbers.	_____	_____
_____	Submitted the completed Excel budget spreadsheet and budget details page ( <b>Attachment 2</b> ) for the project, along with a narrative explanation of the costs.	_____	_____
_____	Job descriptions for key personnel are included (one page limit).	_____	_____
_____	Biographical sketches/Curriculum Vitae for currently employed key personnel are included (one page limit).	_____	_____
_____	Project organizational chart is included and significant collaborators are identified.	_____	_____
_____	Project Title information is included per CMS application.	_____	_____
_____	Required Abstract information is included per CMS application.	_____	_____
_____	Statement of Need information is included per CMS application, and addresses possible problems and contingency plan.	_____	_____
_____	Project Description information is included per CMS application and includes projected outcomes, the timeline, deliverables, benchmarks, and dates.	_____	_____
_____	Results Measurements information is included per CMS application and identifies what data will be measured, how and when it will be measured, and who will measure it.	_____	_____
_____	Description of how the nursing home community and governing body will assist and provide support for the project which is included per CMS application.	_____	_____
_____	Identification and list of all organizations and subcontractors that will receive funds from this grant are included per CMS application (i.e., specific nursing homes, hospitals, local community agencies, etc.).	_____	_____

RFA 34305-22319 CMP Reinvestment  
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\_\_\_\_\_  
\_\_\_\_\_  
Letters of commitment/agreement from all organizations and subcontractors that will receive funds from this grant are included per Request for Application.

\_\_\_\_\_  
\_\_\_\_\_  
General Assurances form is included and signed per Request for Application.

Primary Evaluator Signature and Date:

\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



CENTER FOR APPLIED SCIENCE  
IN HEALTH & AGING

Vincent Davis, State Survey Agency Director  
665 Mainstream Drive, 2<sup>nd</sup> Floor  
Nashville, TN 37243

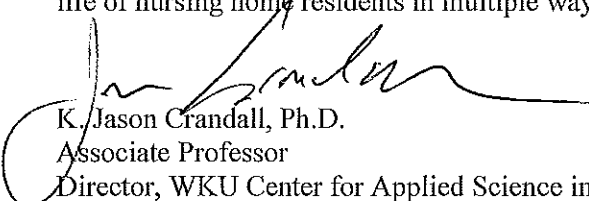
Dear Vincent Davis:

Since 1906, Western Kentucky University (WKU) has provided research, service, and life-long learning opportunities for students, faculty, and the community with the hope of enriching the quality of life for those within its reach. In 2018, the WKU Center for Applied Science in Health and Aging (CASHA) was created to specifically focus on advancing aging science. The proposed Civil Money Penalty (CMP) project, *Bingocize*<sup>®</sup>: *An evidence-based health promotion program to improve the quality of life of Tennessee certified nursing facility (CNF) residents*, is an example of WKU and CASHA's commitment to community outreach and preparation of future health professionals.

A lack of social engagement and physical activity may contribute to a continued decline in functional mobility, activities of daily living (ADLs), and an increase in fall risk in CNF residents. Therefore, there is a significant need for easy-to-use and enjoyable CNF activities capable of increasing daily social engagement, improving functional health, decreasing social isolation, and increasing residents' quality with life. *Bingocize*<sup>®</sup>, a strategic combination of exercise and the game of bingo, is an evidence-based program capable of fulfilling this need.

Recognizing the potential for *Bingocize*<sup>®</sup> to create a culture change within CNF, the U.S. Center for Medicare and Medicaid and the Kentucky Office of Inspector General awarded WKU a 3-year CMP to implement the *Bingocize*<sup>®</sup> program in 28 CNF across Kentucky. In addition, WKU facilitates partnerships between faculty and students at 10 Kentucky universities and CNF staff. Only half-way through this project, over 950 residents, 350 university students, and 50 CNF staff have participated.

The purpose of the proposed 3-year project is to use our experience and expertise to implement *Bingocize*<sup>®</sup> in 40 Tennessee CNF by partnering with six Tennessee universities. We are requesting \$503,803 to help participating CNF residents in three ways. First, the exercise portion of the program will help maintain ADLs and reduce fall risk. Second, the residents will have the opportunity to socially engage and communicate with other residents as well as staff and university students. Finally, the program will educate university students, who are the future workforce, in best practices for working with older adults in long-term care; thus we believe the proposed project will positively impact the quality of life of nursing home residents in multiple ways.



K. Jason Crandall, Ph.D.  
Associate Professor  
Director, WKU Center for Applied Science in Health and Aging

# REQUEST

Date of Application:      /      /       
MM DD YYYY

## PART I: Background Information

Name of the Organization: \_\_\_\_\_

Address Line 1: \_\_\_\_\_

Address Line 2: \_\_\_\_\_

City, County, State, Zip Code: \_\_\_\_\_

Tax Identification Number: \_\_\_\_\_

CMS Certification Number, if applicable:   -

Medicaid Provider Number, if applicable:   -

Name of the Project Leader: \_\_\_\_\_

Address: \_\_\_\_\_

City, County, State, Zip Code: \_\_\_\_\_

Internet E-mail Address: \_\_\_\_\_

Telephone Number:    -    -

Mobile Number:    -    -

Have other funding sources been applied for and/or granted for this proposal?  Yes  No

If yes, please explain/identify sources and amount.

\_\_\_\_\_  
\_\_\_\_\_

**PART II: Applicable to Certified Nursing Home Applicants**

Name of the Facility: \_\_\_\_\_

Address Line 1: \_\_\_\_\_

Address Line 2: \_\_\_\_\_

City, County, State, Zip Code: \_\_\_\_\_

Telephone Number:    -    -

CMS Certification Number:   -

Medicaid Provider Number:   -

Date of Last Recertification Survey:  $\frac{\quad}{MM} / \frac{\quad}{DD} / \frac{\quad}{YYYY}$

Highest Scope and Severity Determination: (A - L) \_\_\_\_\_

Date of Last Complaint Survey:  $\frac{\quad}{MM} / \frac{\quad}{DD} / \frac{\quad}{YYYY}$

Highest Scope and Severity Determination: (A - L) \_\_\_\_\_

Currently Enrolled in the Special Focus Facility (SFF) Initiative?    
Yes No

Previously Designated as a Special Focus Facility?    
Yes No

Participating in a Systems Improvement Agreement?    
Yes No

Administrator's Name: \_\_\_\_\_

Owner of the Nursing Home: \_\_\_\_\_

CEO Telephone Number:    -    -

CEO Email Address: \_\_\_\_\_



Name of the Management Company: \_\_\_\_\_

Chain Affiliation (please specify) Name and Address of Parent Organization: \_\_\_\_\_

Outstanding Civil Money Penalty?  Yes  No

Nursing Home Compare Star Rating: \_\_\_\_\_ (can be 1, 2, 3, 4 or 5 stars)

Date of Nursing Home Compare Rating: \_\_\_\_/\_\_\_\_/\_\_\_\_  
MM DD YYYY

Is the Nursing Home in Bankruptcy or Receivership?  Yes  No

If an organization is represented by various partners and stakeholders, please attach a list of the stakeholders in the appendix.

**NOTE:** The entity or nursing home which requests CMP funding is accountable and responsible for all CMP funds entrusted to it. If a change in ownership occurs after CMP funds are granted or during the course of the project completion, the project leader shall notify CMS and the State Agency within five calendar days. The new ownership shall be disclosed as well as information regarding how the project shall be completed. A written letter regarding the change in ownership and its impact on the CMP Grant application award shall be sent to CMS and the State Agency.

**Part III:  
Project Category**

Please place an "X" by the project category for which you are seeking CMP funding.

- Direct Improvement to Quality of Care
- Resident or Family Councils
- Culture Change/Quality of Life
- Consumer Information
- Transition Preparation

- Training
- Resident Transition due to Facility Closure or Downsizing
- Other: Please specify \_\_\_\_\_

**Part IV:  
Funding Category**

Please specify the amount and place an "X" by the funding category.

Amount Requested: \$ 503,803

- |   |   |
|---|---|
| <input type="checkbox"/> \$2,500 or less    | <input type="checkbox"/> \$10,001 – \$25,000      |
| <input type="checkbox"/> \$2,501 – \$5,000  | <input type="checkbox"/> \$25,001 – \$50,000      |
| <input type="checkbox"/> \$5,001 – \$10,000 | <input checked="" type="checkbox"/> Over \$50,000 |

**Part V:  
Proposed Period of Support**

**From:** 09 / 01 / 2019 (e.g. 06/01/2010)    **To:** 08 / 31 / 2022 (e.g. 12/01/2010)  
MM / DD / YYYY

**Part VI:  
Purpose and Summary**

Cheryl D. Davis    5/10/19  
Dr. Cheryl D. Davis, Authorized Organizational Representative    Date

**PROJECT TITLE**

Include a cover letter to the State Agency Director with the application. The cover letter should introduce your organization, explain the purpose of the project and contain a summary of your proposal. The letter should include the amount of funding that you are requesting, the population it will serve, and the need it will help solve. Make a concerted effort to bring your project to life in the cover letter and actively engage the reader.

ADDITIONAL IDENTIFICATION INFORMATION AS NECESSARY				
APPLICABLE PERIOD: The grant budget line-item amounts below shall be applicable only to expense incurred during the period beginning 9/1/2019, and ending 8/31/2022.				
POLICY 03 Object Line-Item Reference	EXPENSE OBJECT LINE-ITEM CATEGORY <sup>1</sup> (detail schedule(s) attached as applicable)	GRANT CONTRACT	GRANTEE PARTICIPATION	TOTAL PROJECT
1	Salaries <sup>2</sup>	\$205,881.00	\$0.00	\$205,881.00
2	Benefits & Taxes	\$40,290.00	\$0.00	\$40,290.00
4, 15	Professional Fee/ Grant & Award <sup>2</sup>	\$110,494.00	\$0.00	\$110,494.00
5	Supplies	\$55,920.00	\$0.00	\$55,920.00
6	Telephone	\$0.00	\$0.00	\$0.00
7	Postage & Shipping	\$0.00	\$0.00	\$0.00
8	Occupancy	\$0.00	\$0.00	\$0.00
9	Equipment Rental & Maintenance	\$0.00	\$0.00	\$0.00
10	Printing & Publications	\$500.00	\$0.00	\$500.00
11, 12	Travel/ Conferences & Meetings <sup>2</sup>	\$20,917.00	\$0.00	\$20,917.00
13	Interest <sup>2</sup>	\$0.00	\$0.00	\$0.00
14	Insurance	\$0.00	\$0.00	\$0.00
16	Specific Assistance To Individuals <sup>2</sup>	\$0.00	\$0.00	\$0.00
17	Depreciation <sup>2</sup>	\$0.00	\$0.00	\$0.00
18	Other Non-Personnel <sup>2</sup>	\$24,000.00	\$0.00	\$24,000.00
20	Capital Purchase <sup>2</sup>	\$0.00	\$0.00	\$0.00
22	Indirect Cost (10% of total direct costs)	\$45,801.00	\$0.00	\$45,801.00
24	In-Kind Expense	\$0.00	\$0.00	\$0.00
25	<b>GRAND TOTAL</b>	<b>\$503,803.00</b>	<b>\$0.00</b>	<b>\$503,803.00</b>

<sup>1</sup> Each expense object line-item shall be defined by the Department of Finance and Administration Policy 03, Uniform Reporting Requirements and Cost Allocation Plans for Subrecipients of Federal and State Grant Monies, Appendix A. (posted on the Internet at: <https://www.tn.gov/assets/entities/finance/attachments/policy3.pdf>).

<sup>2</sup> Applicable detail follows this page if line-item is funded.



**ATTACHMENT 2 (continued)**  
**GRANT BUDGET LINE-ITEM DETAIL**  
**(BUDGET PAGE 2)**

SALARIES										# of Years	AMOUNT
Project Manager - Jason Crandall	84672	x		0.2	x		3	+	1538	added 3% increase/year	\$52,341.00
Project Director - Kristeen Owens	39000	x		0.33	x		3	+	1170	added 3% increase/year	\$39,780.00
Graduate Assistants (3) - Academic Year	10000	x		3	x		3				\$90,000.00
Graduate Students (3) - Summer	2640	x		3	x		3				\$23,760.00
ROUNDED TOTAL											\$205,881.00

FRINGE BENEFITS											AMOUNT
Fringe Benefits for contract faculty (38% x \$52,341)											\$19,890.00
Fringe Benefits for professional staff (45% x \$39,780)											\$17,901.00
Fringe Benefits for graduate assistants (0.6% x \$90,000)											\$540.00
Fringe Benefits for hourly graduate students (8.25% x \$23,760)											\$1,959.00
ROUNDED TOTAL											\$40,290.00

PROFESSIONAL FEE/ GRANT & AWARD											AMOUNT
Subaward - Roane State College (\$11,418 salary & fringe + \$7,152 travel mileage + \$930 indirect costs)											\$19,500.00
Subaward - Middle Tennessee State University (\$17,721 salary & fringe + \$1,773 indirect costs)											\$19,494.00
Subaward - University of Tennessee at Chattanooga (\$17,603 salary & fringe + \$124 supplies + \$1,773 indirect costs)											\$19,500.00
Subaward - Carson-Newman University (\$13,872 salary & fringe + \$690 travel)											\$14,562.00
Subaward - Volunteer State Community College (\$15,000 salary & fringe + \$1,410 travel + \$1,641 indirect costs)											\$18,051.00
Subaward - East Tennessee State University (\$17,624 salary & fringe + \$1,763 indirect costs)											\$19,387.00
ROUNDED TOTAL											\$110,494.00

SUPPLIES											AMOUNT
Bingocize® in a Box (\$48/unit with shipping x 40 CNF)											\$1,920.00
Prizes for Games (\$300/CNF x 40 CNF x 3 years)											\$36,000.00
T-shirts for CNF Residents (retention incentive)											\$18,000.00
ROUNDED TOTAL											\$55,920.00

PRINTING/ PUBLICATIONS											AMOUNT
Printing Costs for brochures/training materials											\$500.00
ROUNDED TOTAL											\$500.00

TRAVEL/ CONFERENCES & MEETINGS											AMOUNT
(3) individuals taking 7 trips for regional onsite training (YR1)											\$6,013.00
(1) individual taking 12 trips to check fidelity each year (\$414/trip x 12 trips/yr x 3yrs)											\$14,904.00
ROUNDED TOTAL											\$20,917.00

OTHER NON-PERSONNEL											AMOUNT
Bingocize® Online Training Fees (\$10/user x 600 users)											\$6,000.00
Background Checks for Students (450 background checks x \$40/person)											\$18,000.00
ROUNDED TOTAL											\$24,000.00

INDIRECT COSTS											AMOUNT
Indirect Costs at 10% Total Direct Costs											\$45,801.00
ROUNDED TOTAL											\$45,801.00

**\$503,803.00**

## KEY PERSONNEL JOB DESCRIPTIONS

### **K. Jason Crandall, Ph.D.**

Dr. Crandall will be the Project Manager. His responsibilities on this project will include coordinating the partnerships between NHC and universities, as well as designing and assessing the Bingocize<sup>®</sup> program. He will help with data analysis and dissemination of results to CMS and TDPH.

### **Kristeen Owens, M.S.**

Ms. Owens will be the Bingocize Project Director (BPD). She will be responsible for ensuring online and on-site training is complete at all facilities as well as random site visits to the 40 CNF during the three-year project period to ensure fidelity of the program. She will directly supervise three graduate assistants (Project Mentors). She will order and distribute equipment, training materials, and assure trainings are scheduled. She will distribute and monitor the online trainings. She will confirm collection of data and complete reporting to the CASHA team. She will complete and submit monthly progress reports to the Project Manager.

### **Graduate Assistants (Project Mentors)**

Graduate Assistants will play a key role to ensure CNF staff are supported before, during, and after program implementation. Specific responsibilities including planning the on-site and online trainings, marketing the program, coordinating resident-informed consent, tracking attendance, reordering game prizes, collecting/reporting evaluation data, and general program troubleshooting.

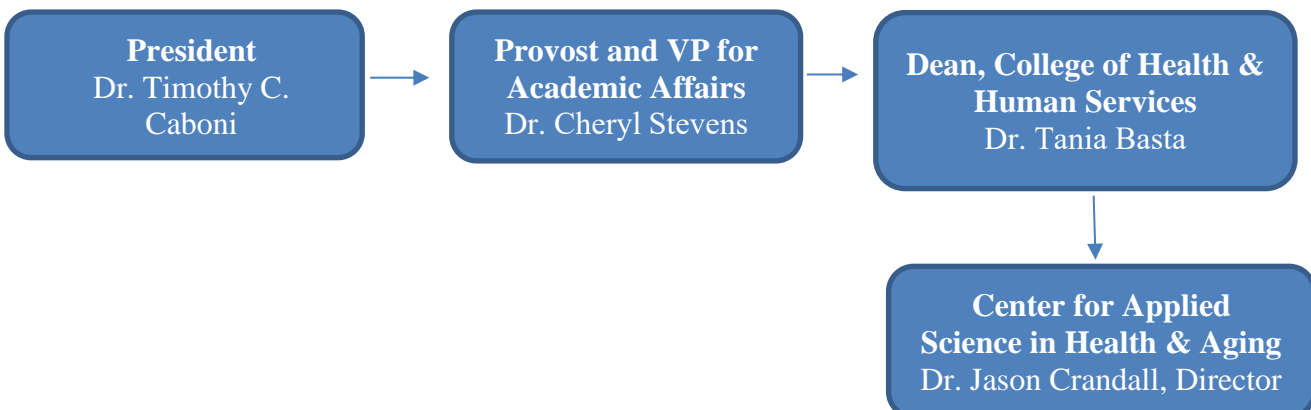
### **Linda Bloodworth, PT, MS, GCS, Ph.D.**

Dr. Bloodworth is the Rehabilitation Regional Manager and Geriatric Physical Therapy Residency Program Director for NHC. She will serve as the liaison between the NHC facilities and the CASHA team. She is responsible for coordinating the regional trainings, ensuring NHC staff are recruited for training, and Bingocize is implemented in each NHC CNF. She will also play a key role in data collection and reporting for the project period for all NHC facilities.

### **Juan Mirand-Enriquez**

Mr. Mirand-Enriquez is the Executive Director at Life Care Center of Jefferson City. He will serve as the liaison between Life Care Center and the CASHA team. He is responsible for coordinating the Jefferson City training, ensuring his staff are recruited for training, and Bingocize<sup>®</sup> is implemented in the facility. He will also play a key role in data collection and reporting for the project period at the Life Care Center facility.

## WKU ORGANIZATIONAL STRUCTURE



## BIOGRAPHICAL SKETCH

NAME: Crandall, K. Jason

Associate Professor, Director-WKU Center for Applied Science in Health and Aging

INSTITUTION AND LOCATION	DEGREE	END DATE	FIELD OF STUDY
University of Northern Colorado, Greeley, Colorado	MA	05/1999	Kinesiology
University of Utah, Salt Lake City, Utah	PHD	05/2004	Exercise Science

### Positions and Employment

1999 - 2002 Graduate Teaching Assistant, University of Utah, Salt Lake City, UT

2003 - 2004 Assistant Professor, Morehead State University, Morehead, KY

2004 - 2010 Adjunct Professor, Kentucky Wesleyan College, Owensboro, KY

2010 - 2013 Assistant Professor, Kentucky Wesleyan College, Owensboro, KY

2014 - Associate Professor, Western Kentucky University, Bowling Green, KY

### Selected Publications

1. Shake MC, Crandall KJ, Mathews RP, Falls DG, Dispennette AK. Efficacy of Bingocize<sup>®</sup>: A Game-Centered Mobile Application to Improve Physical and Cognitive Performance in Older Adults. *Games Health J.* 2018 Aug;7(4):253-261. PubMed PMID: [30089018](#).
2. Falls, D.G., K.J. Crandall., M. Shake., E. Norris, J. Taylor, & S. Arnett. Efficacy of a mobile application for improving gait performance in community-dwelling older adults. *Am Journal of Therapeutic Recreation.* 2018 17 (2):9-19.
3. Neils-Strunjas J, Crandall KJ, Shackelford J, Dispennette K, Stevens LR, Glascock A. Students report more positive attitudes toward older adults following an interprofessional service-learning course. *Gerontol Geriatr Educ.* 2018 Jul 12;PubMed PMID: [30001187](#).
4. Crandall K, Shake M. A mobile application for improving functional performance and health education in older adults: A pilot study. *Journal of Aging Science.* 2016 June 01; 4(2):55-67.
5. Crandall KJ, Steenbergen KI. Older Adults' Functional Performance and Health Knowledge After a Combination Exercise, Health Education, and Bingo Game. *Gerontol Geriatr Med.* 2015 Jan-Dec;1:2333721415613201. PubMed PMID: [28138476](#); PubMed Central PMCID: [PMC5119810](#).

### Honors

- 2013 Distinguished Educator Award, Kentucky Association of Gerontology
- 2014 Junior Investigator Award, Western Kentucky University Office of Research
- 2014 Bucks for Bright Ideas Entrepreneur Award, Kentucky Innovation Network
- 2015 Western Kentucky University Research Mentoring Award-Nominee, Western Kentucky University
- 2015 National Ernest A. Lynton Award for the Scholarship of Engagement for Early Career Faculty-Nominee, New England Resource Center for Higher Education
- 2018 University Research Award Winner, Western Kentucky University

### Selected External Research Support

1. R15AG055906, National Institute on Aging; Crandall (Co-PI) 08/14/18-08/13/21; Bingocize<sup>®</sup>: A Novel Mobile Application for Older Adult Health (\$417,398).
2. 2016-04-KY-1205, United States Department of Health and Human Services; Centers for Medicare and Medicaid Crandall, K. Jason (PI) 05/15/17-04/30/20 Bingocize<sup>®</sup>: An evidence-based health promotion program to improve the quality of life of Kentucky certified nursing facility residents (\$772,202).
3. 201604-KY-1205, United States Department of Health and Human Services; Centers for Medicare and Medicaid Crandall, K. Jason (PI) 05/30/18-05/30/20 Bingocize<sup>®</sup>: An evidence-based health promotion program to improve the quality of life of Kentucky certified nursing facility residents. (\$126,215).

## PART VI: Project Title

*Bingocize®: An evidence-based health promotion program to improve the quality of life of Tennessee certified nursing facility (CNF) residents*

## PART VII: EXPECTED OUTCOMES

### Project Abstract

A lack of social engagement and physical activity may contribute to a continued decline in functional mobility, activities of daily living (ADLs), and an increase in fall risk in certified nursing facility (CNF) residents. According to the Centers for Disease Control, nursing home residents account for about 20% of deaths from falls in adults over 65 years of age. Therefore, there is a significant need for easy-to-use and enjoyable CNF activities capable of increasing daily social engagement, improving functional health, and decreasing social isolation.

Bingocize®, a strategic combination of exercise and the game of bingo, is an innovative, structured, and evidence-based program shown to increase older adults' quality of life - an important Civil Money Penalty Grant (CMP) focus area. Recognizing the impact Bingocize® has on *culture change and quality of life* of CNF residents, the Center for Medicare and Medicaid Services (CMS) and the Kentucky Office of Inspector General (OIG) awarded Western Kentucky University (WKU) a 3-year CMP in April of 2017. So far, this project has positively impacted over 1,000 residents, 350 university students, and 50 CNF staff.

The *WKU Center for Applied Science in Health and Aging (CASHA)* team's primary goal for the proposed project is to use the successful Kentucky CMP model to train CNF staff to implement the Bingocize® program in 40 CNF across Tennessee. Our secondary goal is to facilitate strong community partnerships between faculty and students at six Tennessee educational institutions and CNF staff. *With help from the CASHA team, all CNF residents who are non-bedbound will be recruited from each facility to participate in two Bingocize® sessions per week.* The project measures of success will be evaluated by 1) tracking the number of trained CNF staff and faculty/students using results from a post-training assessment, 2) tracking the number of residents in attendance at each of the participating CNF, and 3) assessing CNF residents' direct improvement in the following outcomes: bed mobility (G0110A), transfer (G0110B), toilet use (G0110I), and eating (G0110H). In addition, falls and number of falls since last assessment (J1800, J1900) will be evaluated along with social engagement displayed by residents during a Bingocize® session as measured by the Fun and Social Engagement Evaluation (FUSE). The CASHA team is led by Dr. Jason Crandall, Director and Associate Professor of Exercise Science (EXS). He is currently the Kentucky CMP Project Manager and an accomplished professional in exercise science (EXS), health promotion, aging, and public health. Dr. Crandall will be accountable for the overall project execution and evaluation. Our team will achieve the following three project objectives over the 3-year project period:

**Objective 1:** Two hundred eighty (280) CNF staff will demonstrate skill and knowledge to lead Bingocize® with CNF residents over the 3-year grant period;

**Objective 2:** Twelve (12) faculty and four hundred (400) students from six Tennessee universities will demonstrate skill and knowledge to lead Bingocize® while assisting CNF staff to implement Bingocize® programs over the 3-year grant period; and

**Objective 3:** One thousand eight hundred (1,800) CNF residents from forty (40) CNF will participate in Bingocize® and falls, ADLs, and social engagement will be evaluated over the 3-year grant period.

### Statement of Need

Bingocize® is an innovative, structured program capable of addressing an important CMS focus area-increasing residents' quality of life. Programs like Bingocize® are needed because many of the 19,500 CNF residents in Tennessee lack social engagement and physical activity which can contribute to a continued decline in ADLs (Liu & Hu, 2015) and functional performance (Locks et al., 2012), as well as a serious increase in fall risk (Pfortmueller, Lindner, & Exadaktylos, 2014). Annually, between half and three-quarters of CNF residents will fall at least once and many will fall more than once. Unfortunately, 1,800 CNF residents in the United States die each year from fall-related accidents (National Institutes on Aging, 2015). In addition, at least 50% of residents experience cognitive impairment and reduced socialization and communication (Sprangers, Dijkstra, & Romijn-Luijten, 2015). Increasing daily social engagement and physical activity may improve physical

health as well as decrease social isolation and increase residents' engagement with life (Jansen, Classen, Hauer, Diegelmann, & Wahl, 2014).

Bingocize<sup>®</sup> can also facilitate strong community partnerships between educational institutions and CNF. In our current Kentucky CMP project, this has proven to be an important and productive partnership in several ways. First, the program provides students the opportunity to build the technical knowledge, as well as relationship and empathy building skills, which are essential to working with older adults (Yu & Kirk, 2008). Second, the program leads to students from multiple disciplines (e.g. Social Work, Physical Therapy (PT), Psychological Sciences, Occupational therapy (OT), Communication Sciences and Disorders (CSD), Gerontology, and EXS) to acquire a deep and thorough understanding of complex issues related to aging and long-term care. Thirdly, Bingocize<sup>®</sup> also helps prepare students for future aging-related careers by significantly improving students' attitudes towards older adults after implementing a Bingocize<sup>®</sup> program (Neils-Strunjas, et al. 2018). This is critically important considering the ongoing shortage of qualified CNF staff and high turnover rates among the long-term care workforce.

We did encounter problems during implementation of the Kentucky CMP project. Encountering and solving these problems informed the creation of our contingency plan for the proposed project. One problem we encountered was the need for more trained program leaders due to high turnover in CNF staff. This problem was solved by training more CNF staff and university students using a self-paced online training (described later in more detail). Also, WKU graduate assistants played a valuable role by frequently communicating and supporting new CNF staff and ensuring university students attended sessions on schedule. In addition, university students from participating universities served as program leaders when CNF staff were unavailable. The second problem was residents with lower functional abilities were not able to complete some of the planned exercises. This problem was solved by eliminating the resistance bands commonly used for community-dwelling older adults and adding exercises adapted for residents with less physical and cognitive abilities. A final problem we encountered was difficulty matching students' and CNF schedules. We solved this problem by using an online scheduling calendar (TeamUp) to inform students and faculty when sessions were offered at the CNF.

## **Program Description**

### **What is Bingocize<sup>®</sup>?**

Bingocize<sup>®</sup> is a strategic combination of physical exercise and the game of bingo. The program consists of two 45-60 minute sessions each week. A session begins with a group of CNF residents sitting at tables with individual bingo cards in an area large enough to accommodate the residents. Trained CNF staff members, with help from trained university students, serve as program leaders. The residents complete a series of gentle physical exercises followed by the program leader calling a bingo letter/number combination. This pattern of movement followed by calls of bingo is continued until a participant wins the bingo game. After the first game is completed, additional games of bingo allow for completion of the exercises and to keep the residents' interest in the game. Residents are polled by CNF staff to determine their preferences for incentive prizes awarded to the winner of each game.

The physical exercise component of the program is adaptable for a wide range of resident physical abilities. For example, the needs of any resident are met by modifying the number and type of exercises per session. Each session typically consists of 12 different exercises. Exercises focus on improving components of functional mobility such as strength, range of motion, and balance (American College of Sports et al., 2009). The strength exercises closely resemble functional exercises that can improve ADLs and functional status as well as reduce fall risk. For example, using therapy balls to increase grip strength can lead to improvement in the daily activity of dressing.

### **Bingocize<sup>®</sup> is Evidence-based**

Bingocize<sup>®</sup> is listed on the U.S. Administration on Community Living (ACL) and National Council on Aging (NCOA) evidence-based falls prevention program "pre-approved" list for Title IID funding. For example, the Tennessee Commission on Aging and Disability (TCAD) currently holds a license to use Bingocize<sup>®</sup> throughout the state's senior centers. Multiple investigations, funded by the Kentucky Science and Engineering Foundation, the Retirement Research Foundation, and the National Institutes of Health-National Institute on Aging, confirmed the positive effects of Bingocize<sup>®</sup> on older adults. In one investigation, a group

of older adults attended over 80% of the sessions, and significantly improved muscular strength, flexibility, balance, and cardiorespiratory fitness over 10 weeks (Crandall, Fairman, & Anderson, 2015). In a second investigation, community-dwelling older adults significantly improved on 7 of the 8 measures of functional performance when compared to a waitlisted control group. Just as crucial, our research team achieved a high adherence rate (97%) and retained over 86% of participants in the experimental group (Crandall & Steenbergen, 2015). In our latest investigation, participants improved functional performance, gait parameters, patient activation, and aspects of cognition (Shake et al., 2018, Falls et al., 2018).

We also examined the effects of the program on social engagement in older adults suffering from dementia at a memory care facility. Bingocize® provided a focused activity that tapped into remote memory of bingo games combined with the encouragement to follow movements demonstrated and prompted by university student leaders. Residents displayed more nonverbal (i.e. following commands, gestures directed towards others) and task-related verbal behavior during Bingocize® than during other activities (coloring, listening to music, eating a snack, etc.).

### Proposed Project

The primary goal of the proposed project is to implement Bingocize® in 40 Tennessee CNFs to positively affect residents' quality of life. Our secondary goal is to facilitate strong community partnerships between CNF staff and faculty/students from Tennessee educational institutions so they can work together to implement Bingocize® for CNF residents. These goals will be met by achieving the following project objectives.

#### **Objective 1: Two hundred eighty (280) CNF staff will demonstrate skill and knowledge to lead Bingocize® with CNF residents over the 3-year grant period**

A total of 40 CNF will participate in this project. See Figure 1. Dr. Jason Crandall, Dr. Linda Bloodworth, National Healthcare Corporation (NHC) Rehabilitation Regional Manager, and Juan Mirand-Enriquez, Executive Director at Life Care Center (LCC) of Jefferson City, identified 37 NHC CNF and 3 Life Care Center (LCC) CNF for implementation of Bingocize®. NHC and LCC representatives signed letters of commitment authorizing the CNF to participate. Each of the facilities have met the following selection criteria: 1) receives Medicare or Medicaid funding; 2) in compliance with the requirements for long-term care facilities (as defined in 42 CFR 488.301) or have no outstanding Civil Money Penalty debt owed to the US government; and 3) has a letter of support signed by the Corporate Medical Director, which defines his/her role in supporting the program.

*CNF staff are responsible for recruiting residents and*



Figure 1: Participating Tennessee CNF

*leading Bingocize® sessions, so to ensure sustainability during and after the project period, our goal is to train at least 280 CNF staff to lead the Bingocize® program before the end of the project period. Due to high average CNF staff turnover and difficult work schedules, it is important to provide multiple training opportunities at each facility. To accomplish this goal, we will offer 1) on-demand online training and 2) a series of on-site regional trainings. Before the training sessions are scheduled, the Bingocize Project Director (BPD), in consultation with the CNF administration, will identify a member of the CNF staff at each facility to be designated as the Lead Facilitator (LF). This person is typically the CNF activities director, but can be anyone within the facility including restorative therapists. A major benefit of the Bingocize® program is there are no special requirements other than completing the online or onsite training so any staff member can be trained to lead sessions. With help from the BPD and three WKU graduate assistants (GA), the LF will market, promote, and recruit residents using CASHA-supplied flyers and brochures, as well as informing family members and*



family councils (if available). The LF will be asked to share the online training link with other CNF staff and to encourage additional CNF staff to take the online training. We will encourage the LF and their back up facilitator to complete the online training prior to the CASHA-led on-site regional training (described in detail later). Each LF be assigned one GA to help coordinate resident-informed consent, track attendance, reorder game prizes, and collect/report evaluation data. In addition, the GA will help market the program by supplying flyers, brochures, and help posting information on the CNF social media accounts for family members to learn more about the program. The BPD will help CNF staff develop internal policies and procedures for cleaning, storage, and replacement of the program equipment. In case the original LF is no longer available to facilitate the program, another CNF administrative team member will be trained and assisted by the CASHA team to assume the responsibilities.

**Online training:** The CASHA team will provide a link to the online training for each CNF with a goal of training at least four CNF staff per facility by the end of the project period. The online training consists of four self-paced modules (physical activity and aging, preparing for sessions, leading a session, and the exercises) and takes approximately one hour to complete. Each of the four modules can be completed separately allowing staff to leave the training when necessary and returning later to complete the remaining module(s). The training site was created by CASHA faculty, specializing in exercise physiology, speech and language pathology, and physical therapy. [Click here to view the Bingocize® online training.](#) The staff will learn basic exercise information including recruitment/motivational strategies, safety and training principles, falls prevention information, and dementia characteristics that may affect exercise/movement techniques. They will also learn techniques to communicate with residents suffering from varying degrees of dementia. An online assessment is administered at the end of the training and a grade of 80% is required for successful completion. A printable Certificate of Completion is available and copies will be provided to CMS and the Tennessee Department of Public Health (TDPH).

**On-site regional trainings:** After the initial online training period is complete (months 1-2), the BPD and CNF staff will schedule 7 regional on-site trainings (months 3-6): two in Nashville and one in Knoxville, Pulaski, Johnson City, Jefferson City, and Chattanooga. NHC staff will attend one of the six regional trainings closest to their CNF location. One on-site training will be conducted in Jefferson City to train staff from the three Life Care Center facilities. The main objective of the on-site trainings is to “launch” the program by generating excitement among the staff to implement the program, but we will also train staff unable to complete the online training. Specific training activities will include demonstrating a Bingocize® session, discussing procedures for evaluation and reporting to the CASHA team, and delivering program equipment. CNF administrators will advertise the date and time of the trainings and allow staff to complete the training during work hours.

At least three additional CNF staff from each facility will be trained, however, the trainings will be open to all members of the interdisciplinary team responsible for incorporating Bingocize® into each resident’s individual plan of care. For example, we anticipate physical and occupational therapists will complete the training after successfully integrating Bingocize® into therapy sessions during the Kentucky CMP project. A paper-pencil assessment will be administered at the end of the trainings and a grade of 80% is required for successful completion. A Certificate of Completion will be awarded to each trained program leader and copies will be provided to CMS and TDPH. Each CNF will be delivered a “Bingocize® in a Box.” The box includes a training manual for future reference, some prizes for game winners, and therapy balls. The training manual contains all information necessary to ensure fidelity of the program, including detailed program sessions. *Winners of Bingocize® receive prizes, so prior to the first Bingocize® session, each LF will receive an initial “prize order form” listing the most popular prizes from the Kentucky CMP project such as lotions, paper towels, crossword puzzles, or other small*



Figure 2: Residents enjoying Bingocize® t-shirts

*personal/household items. Residents will then be polled by the LF to determine preferred prizes for their facility. Enough prizes for the first three months will be included in the Bingocize® in a Box. Every quarter during the project period, the LF will send the prize order form to their assigned GA who will directly ship prizes to each CNF via Amazon. For the Kentucky CMP Project, CMS requested residents attending at least 12 sessions should receive a Bingocize® t-shirt as a way to motivate them to continue participating and to create group cohesion. Residents in this project will also receive a t-shirt after attending at least 12 sessions. See current residents enjoying their t-shirts in Figure 2.*

After the initial online and onsite trainings are complete, the BPD will be available via email, phone, or video conference to respond to questions or concerns during the project period. The three GAs will also follow up weekly to address program questions and/or concerns. The BPD will host at least one focus group using quantitative and qualitative questions to gather feedback from the CNF staff. The focus group sessions will be recorded for later review. The BPD will be responsible for identifying necessary changes to the program based on focus group results. Monthly newsletters will be distributed to the CNF for the purpose of highlighting residents, faculty, staff, and students' successes, as well as to provide educational information to the CNF staff such as falls prevention and tips for helping residents with dementia. CNF staff will be encouraged to share the newsletters and [social media sites](#) with residents' family members to encourage resident participation.

**Objective 2: Twelve (12) faculty and 400 students from six Tennessee universities will demonstrate skill and knowledge to lead Bingocize® and will partner with CNF staff to implement Bingocize® programs over the 3-year grant period**

Two faculty from each of the six Tennessee universities, certified in a field that typically provides professional services in a CNF, have agreed to assign, supervise, and evaluate students to help the LF administer the Bingocize® program. *Faculty members will also ensure each student has an up-to-date influenza vaccination, background check, and personal or University liability insurance. While attending Bingocize® sessions, the students will help set up and prepare the room for the session, assist staff to bring residents to the session, help residents perform the exercises, and sit with residents to establish social/intergenerational relationships.*

The LF will determine optimal session days and times for weekly sessions and report this information to the BPD. The BPD will add this information to an online calendar application called *TeamUp*. Students and faculty will use *TeamUp* to check when sessions are offered at their local CNF. *The faculty member, with help from the BPD, will assign students to the nearest participating CNF and observe them at least twice during their time at the facility to ensure quality instruction and fidelity of the program. In addition to the Bingocize-specific training, faculty members will also provide discipline-specific training for students. For example, CSD faculty will encourage their students to practice effective communication strategies at the CNF.* The number of days per week and total number of weeks students spend at each CNF will vary depending on their academic disciplines, academic calendar, and faculty schedules, but they will spend no less than a total of 10 hours at their assigned facility. *When students are not available to attend sessions, the CNF staff will administer the program without the help of students.* New students to the project will complete the online training and replace or join students from the previous semester/quarter. This continuous supply of qualified students will help ensure sustainability of the program. Both faculty and students will complete the same online training as the CNF staff. A post training assessment will be administered at the end of the training and a grade of 80% is required for successful completion.

*Each university faculty member will be responsible for students' project deliverables. All participating students will complete written reflections describing how the experience influenced their view of older adults and future health careers. They will also create videos documenting their experiences including resident interviews. [Click here to view examples of student-created videos.](#) The final student projects will be posted online and presented to the CNF staff and residents. Dr. Crandall will also provide CMS and TDPH access to these projects. After the project period ends, university faculty will continue to assign students to the CNF ensuring sustainability of the program.*

**Objective 3: One thousand eight hundred (1,800) CNF residents from forty (40) CNF will participate in Bingocize® and falls, ADLs, and social engagement will be evaluated over the 3-year grant period.**



We expect to improve the quality of life of at least 1,800 residents during the project period and countless numbers of residents beyond the project period. Two weeks after completing Bingocize® on-site training, the CNF staff, the LF, and other CNF administrative team members, will begin recruiting residents using CASHA-provided flyers and brochures, as well as informing family members and family councils (if available). Volunteer residents will be recruited and screened by the CNF staff members and clearance to participate will be given by the Medical Director. Family members are also welcome to participate. Although resident recruitment will be greatest at the beginning of the program, recruitment will be a continual process as new residents will be informed about the program upon arrival at the facility.

Approximately one month after completing on-site training, CNF staff members will begin offering two weekly Bingocize® sessions at their respective facility for the duration of the project period. There will be occasions when sessions must be cancelled due to time conflicts with other activities, therefore, offering at least 80% of the total sessions over the project period will be considered success. This is consistent with our research showing participants functional performance improves if they attend at least 80% of the sessions over a 10-week period. The three GAs will maintain continual communication with the CNF and BPD by sharing required information electronically through online report submission, emails, text messages, and video conferences. In addition, they will provide assistance with entering, storing, and analyzing de-identified resident data as requested by the BDP, as well as contributing to and disseminating the CMP Bingocize® newsletter and social media posts. Finally, GAs will provide assistance planning and implementing the CNF on-site trainings.

**Project Timeline**

<b>OBJECTIVE 1: TWO HUNDRED EIGHTY (280) CNF STAFF WILL DEMONSTRATE SKILL AND KNOWLEDGE TO LEAD BINGOCIZE® WITH CNF RESIDENTS OVER THE 3-YEAR PROJECT</b>				
<i>Project Task</i>	<i>Timeline/Months</i>	<i>Products/Outcomes</i>	<i>Evaluation</i>	<i>Responsible Party</i>
Initial online trainings complete	1-2	Online training for at least 80 CNF staff	Completion of post-training assessment	BPD (Bingocize Project Director)
Remaining online trainings	3-36	Online training for at least 80 CNF staff	Completion of post-training assessment	BPD
Regional on-site trainings and “Bingocize® in a Box” delivered	3-6	At least 120 CNF staff trained to conduct a Bingocize® program	Completion of post-training assessment	Dr. Crandall, BPD, GAs)
Video conferences with CNF	11-12, 23-24, 35-36	Direct observations of Bingocize® sessions; focus group with trained CNF staff	Fidelity of program assessed using manual; focus group data used to improve the program	BPD or GA
Follow-up calls to address program concerns/questions	1-36	Calls to CNF	Addressing CNF questions/concerns	BPD & GA
12 on-site fidelity checks (as needed)	4-36	Address challenges with implementation	Addressing CNF questions/concerns	BPD
<b>OBJECTIVE 2: TWELVE (12) FACULTY AND 400 STUDENTS FROM 6 TENNESSEE UNIVERSITIES WILL DEMONSTRATE SKILL AND KNOWLEDGE TO LEAD BINGOCIZE® OVER THE 3-YEAR PROJECT</b>				
<i>Project Task</i>	<i>Timeline/Months</i>	<i>Products/Outcomes</i>	<i>Evaluation</i>	<i>Responsible Party</i>
On-line training module	1-36	On-line training module completed (400 students)	On-line training module launched and completed	Dr. Crandall, GAs, BPD
Two site visits to CNF to confirm	Will vary based on faculty availability	Direct observations of Bingocize® sessions	Fidelity of program assessed using Bingocize® manual	University faculty

students are assisting CNF staff properly				
<b>OBJECTIVE 3: ONE THOUSAND EIGHT HUNDRED (1,800) CNF RESIDENTS FROM FORTY (40) CNF WILL PARTICIPATE IN BINGOCIZE® AND FALLS, ADLS, AND SOCIAL ENGAGEMENT WILL BE EVALUATED OVER THE 3-YEAR GRANT PERIOD.</b>				
<i>Project Task</i>	<i>Timeline/Months</i>	<i>Products/Outcomes</i>	<i>Evaluation</i>	<i>Responsible Party</i>
Recruit residents; inform family members & councils	3-36	Utilization of program by CNF residents	Number of residents attending each session	CNF staff, BPD, GA
Implementation of program at 40 CNF; residents recruited MDS items recorded	3-36	Utilization by CNF residents; Assessment of falls, ADLs, social engagement	Resident attendance; MDS 3.0 data, FUSE	CNF staff, BPD, & university students
De-identified data sent to WKU by LF	3, 6, 9, 12, 20, 18, 21, 24, 27, 30, 33, 36	Excel spreadsheet	Program utilization and MDS 3.0 data	LF & BPD
Quarterly aggregate results reported	3, 6, 9, 12, 20, 18, 21, 24, 27, 30, 33, 36	Excel spreadsheet	Aggregate results of the project	Dr. Crandall
Follow-up/ final reports	36, 37	Excel spreadsheet	Aggregate results of the project	Dr. Crandall

### **PART VIII: RESULTS MEASUREMENT**

The CASHA team will provide a list of identification numbers to the CNF staff who will then assign each participating resident one of the identification numbers. Residents’ de-identified data will be reported to the CASHA team by the LF using only their assigned identification number. The data will then be sent electronically by the LF to the CASHA team monthly throughout the project period. The BPD and GA will be responsible for ensuring data are collected from each facility by calling, emailing, video conferencing, and making on-site visits if necessary. Project Manager, Dr. Crandall, will be responsible for the overall project execution, reporting quarterly aggregate results of the project to CMS and TDPH, as well as for submitting a follow-up report to CMS and TDPH at the conclusion of the project and a second report within 6 months of the project conclusion. Three objectives will be evaluated throughout the project period. See Table 1 for our results measurement plan.

Objectives 1 and 2 will be assessed by tracking the number of CNF staff, faculty, and students completing the training and scoring at least 80% on the online post-training assessment. By the end of the project period, our goal is to train 280 CNF staff, 12 university faculty, and 400 university students to conduct the Bingocize® program. More students than staff will be trained because we expect university faculty to assign a large number of students to participate in this project. For example, some faculty assigned more than 30 students each semester during the Kentucky CMP project.

Objective 3 will be assessed three ways. First, the LF will be responsible for ensuring accurate resident attendance to track Bingocize® program utilization. Second, four “late loss” ADLs: bed mobility (G0110A), transfer (G0110B), toilet use (G0110I), and eating (G0110H) will be monitored by CNF staff and then reported to their assigned GA. In addition, we will monitor falls and number of falls since last assessment (J1800, J1900). Finally, twice each semester (fall and spring), students will administer the Fun and Social Engagement Evaluation (FUSE) to measure social engagement displayed by residents, with and without cognitive decline, during a Bingocize® session. *If possible, data from residents participating in physical and/or occupational therapy will be segmented to examine the impact of Bingocize® on therapy outcomes.* Students will submit these de-identified data to their supervising faculty who will in turn electronically submit to the CASHA team. As described earlier, residents will complete the FUSE to assess their level of social engagement during a session and students will complete written reflections and create videos highlighting their experiences.

Improvements to the program will be made based on feedback from CNF staff using a series of quantitative and qualitative questions administered electronically via Qualtrics survey software. The BPD will also make on-site visits when needed to address challenges reported by the LF and ensure fidelity of the program. These visits were especially helpful to the LF during the Kentucky CMP project. For example, the BPD helped LF modify specific exercises for residents with less function, provided ideas for resident recruitment, and helped improve the evaluation process and flow of data to the CASHA team.

Table 1: Results Measurement Plan

Objective	Evaluation	Administered	Reported to CASHA	Responsible Party
Objective 1 & 2	Post-training assessment	Administered immediately after training	Not applicable	BPD, GA
Objective 3	Resident participation	Attendance tracked each session	Quarterly	LF, GA
Objective 3	MDS 3.0: G0110A, G0110B, G0110I, G0110H, J1800, J1900	Quarterly or as needed	Quarterly	LF, GA
Objective 3	FUSE	Twice each semester (Fall & Spring only)	Upon completion	University students

**PART IX: BENEFITS TO NURSING HOME RESIDENTS**

A Bingocize® program will be established and provide current and future CNF residents the opportunity to participate in an evidence-based program capable of producing culture change and improving quality of life in several ways. First, the exercise portion of the program will positively affect functional performance leading to maintenance in ADLs and reduced fall risk. Second, because the Bingocize® program is a group activity, the residents will have the opportunity to socially engage and communicate with other residents as well as staff and university faculty and students. Finally, residents will enjoy playing Bingocize® and winning prizes.

**PART X: CONSUMER/STAKEHOLDER INVOLVEMENT**

While implementing the program for older adults suffering from Alzheimer’s disease and other types of dementia, we observed residents were more socially engaged when family members participated. We will, therefore, invite family members and resident/family councils to participate in Bingocize® as well as provide feedback to improve the program for residents. The CNF administration has provided support for the project by agreeing to assign staff for training and time for implementation of the program.

**PART XI: FUNDING**

WKU and CASHA have the infrastructure needed to undertake and successfully complete this project, including facility space, telecommunications, and computer equipment. WKU is committed to the project and has agreed to help recruit and hire excellent graduate students for the project. The following budget items are critical for completion of this project. To ensure the fidelity and safety of the program, it is imperative that all project personnel are properly trained and monitored; thus, the budget is heavily weighted towards our team personnel and training.

**A. Personnel.** Salary for full-time personnel includes a 3% increase for each subsequent year.

**A.1 Senior Personnel**

- A. Project Manager: 20% Academic year effort Dr. Crandall (FY20 base: \$79,952, plus 3% increase in future years). See Key Personnel Job Description/Project Role.
- B. Bingocize® Project Director (BPD): 33% FTE for Ms. Owens (12-month base: \$39,000, plus 3% increase in future years). See Key Personnel Job Description/Project Role.

**A.2 Other Personnel**

- i. Graduate Assistants: See Key Personnel Job Description/Project Role. Includes (3) graduate assistantships during the academic year (\$5,000/semester) and (3) graduate students in the summer (\$11/hr. x 20hrs/wk).

**B. Fringe Benefits.** Fringe benefits are calculated using established university rates: 38% for academic year faculty, 45% for professional staff, 24.32% for summer faculty, 8.25% for hourly part-time/students, and 0.6% for graduate assistants.

**C. Travel.** Travel for this project is consistent with university polices, state mileage, and U.S. G.S.A. rates.

- a. Travel to regional CNF onsite training in year 1: 7 trips for 3 people based on GSA rates for 3 individuals (mileage: \$1,057 + lodging: \$2,532 + per diem: \$2,424 = total: \$6,013). *All mileage is calculated at a rate lower than the allowed limit for Tennessee at \$0.42. Lodging and per diem are consistent with U.S. G.S.A. rates for each specified location. Below is a breakdown of each of the 7 trips:*

i. TRIP 1 – Nashville (\$966):	Mileage (150 miles x 0.42) = \$63 Lodging (\$179/night x 3 people) = \$537 Per Diem (\$61/day x 3 people x 2 days) = \$366
ii. TRIP 2 – Nashville (\$966):	Mileage (150 miles x 0.42) = \$63 Lodging (\$179/night x 3 people) = \$537 Per Diem (\$61/day x 3 people x 2 days) = \$366
iii. TRIP 3 – Johnson City (\$864):	Mileage (600 miles x 0.42) = \$252 Lodging (\$94/night x 3 people) = \$282 Per Diem (\$55/day x 3 people x 2 days) = \$330
iv. TRIP 4 – Pulaski (\$730):	Mileage (280 miles x 0.42) = \$118 Lodging (\$94/night x 3 people) = \$282 Per Diem (\$55/day x 3 people x 2 days) = \$330
v. TRIP 5 – Knoxville (\$817):	Mileage (452 miles x 0.42) = \$190 Lodging (\$97/night x 3 people) = \$291 Per Diem (\$56/day x 3 people x 2 days) = \$336
vi. TRIP 6 – Chattanooga (\$856):	Mileage (402 miles x 0.42) = \$169 Lodging (\$107/night x 3 people) = \$321 Per Diem (\$61/day x 3 people x 2 days) = \$366
vii. TRIP 7 – Jefferson City (\$814):	Mileage (482 miles x 0.42) = \$202 Lodging (\$94/night x 3 people) = \$282 Per Diem (\$55/day x 3 people x 2 days) = \$330

- b. Travel by the BPD to check fidelity at CNFs during all 3 years: 12 trips for 1 person based on average GSA rates for CNF locations (mileage: \$2,220 + lodging: \$1,284 + per diem: \$1,464 = total: \$4,968 x 3 years). *Since the exact CNF to be visited each year will vary, and is yet to be determined, an average rate has been used to determine the cost of this travel. Consistent with average GSA rates for the state, lodging is estimated at \$107 per night, for one night, and per diem is estimated at \$61 per day for two days. Mileage is included at a rate lower than the allowed limit for Tennessee at \$0.42 per mile for an approximate 440 miles per trip. The estimated cost of each trip is \$414, for a total of \$4,968 per year.*

**D. Supplies.** Each facility with tools necessary to complete the project. All supplies and game prizes will be purchased by the GA on Amazon.com to ensure the most competitive prices. This includes:

- a. Game Prizes (\$300 per facility x 40 facilities = \$12,000 /yr.) – each project year. The prizes are tailored for each group, typically including personal care items (*lotions, paper towels, crossword puzzles, or other small personal/household item*).
- b. **Bingocize® in a Box:** Each CNF will receive a box containing exercise equipment, prizes for bingo winners, and a training manual (\$58 per unit x 40 units)
- c. Bingocize® T-shirts will be provided to CNF residents that complete 12 Bingocize® sessions to promote fidelity (\$10,000 in year one, and \$4,000 in years two and three).

**E. Contractual.**

- i. Subawards to six Tennessee universities (\$110,494 over 3 years): The planning, training, and assignment of university students to CNF will be an additional workload for the faculty. Students must be assigned to CNF and complete the required videos before faculty are compensated. Additionally, other costs include fringe benefits, and indirect costs (10%). Travel will vary between universities based on the distance from

each university to their assigned CNF and the number of participating students. Letters of commitment for each subaward are on file at Western Kentucky University.

- a. Middle Tennessee State University (\$19,494): Salary/Fringe Benefits for faculty (\$5,907) + Indirect Costs 10% (\$591) = \$6,498 each year.
- b. Roane State University (\$19,500): Salary/Fringe Benefits for faculty (\$3,806) + Travel (\$2,384) + Indirect Costs 5% (\$310) = \$6,500 each project year.
- c. Carson-Newman University (\$14,562): Salary/Fringe Benefits for faculty (\$4,624) + Travel (\$230) = \$4,854 each year.
- d. East Tennessee State University (\$19,387): Salary/Fringe Benefits for faculty (\$5,885) + Indirect Costs 10% (\$589) = \$6,474 in year one. Salary/Fringe Benefits for faculty (\$5,889) + Indirect Costs 10% (\$589) = \$6,478 in year two. Salary/Fringe Benefits for faculty (\$5,850) + Indirect Costs 10% (\$585) = \$6,435 in year three.
- e. Volunteer State Community College (\$18,051): Salary/Fringe Benefits for faculty (\$5,000) + Travel (\$470) + Indirect Costs 10% (\$547) = \$6,017 each year.
- f. University of Tennessee-Chattanooga (\$19,500): Salary/Fringe Benefits for faculty (\$5,785) + Supplies (\$124) + Indirect Costs 10% (\$591) = \$6,500 in year one. Salary/Fringe Benefits for faculty (\$5,909) + Indirect Costs 10% (\$591) = \$6,500 per year in years two and three.

**F. Other Costs.**

- i. Funds are requested to support online training fees at \$10 per person (estimated 400 in year one and 100 in each of years two and three).
- ii. Funds are requested for printing brochures, flyers, and training materials, plus binder costs (\$500 in year 1).
- iii. Funds are requested to run background checks on individuals/students (\$40/individual, 280 in year one and 85 in each of years two and three).

**G. Indirect Costs.** *Indirect Costs are costs that are necessary to support sponsored projects, but cannot be readily or easily assigned to individual projects. These include costs related to facilities operations, libraries, departmental administration, and general administration. Per program guidelines, we have reduced our indirect cost rate to 10%, but WKU has a [federally approved rate](#) of 42% modified total direct costs.*

**PART XII: INVOLVED ORGANIZATIONS**

WKU Org. Chart	Project Role	Description	Email	
Dr. Jason Crandall	Project Manager	See Key Personnel Section	jason.crandall@wku.edu	
Kristeen Owens	Project Director	See Key Personnel Section	kristeen.tice-owens@wku.edu	
CNF Partner	Address	City	State/Zip	Email
NHC TN (37 locations) (POC: Linda Bloodworth)	100 East Vine Street	Murfreesboro	TN/37130	Linda.bloodworth@nhccare.com
Life Care Center (3 locations) (POC: Juan P. Miranda)	336 West Old Andrew Johnson Hwy	Jefferson City	TN/37760	Juan_MirandaEnriquez@lcca.com
University Partner	Address	City	State	Email
Middle Tennessee State University (Jean Caputo)	1301 East Main Street	Murfreesboro	TN/37132	jenn.caputo@mtsu.edu
University of Tennessee at Chattanooga (Amy Doolittle)	615 McCallie Ave	Chattanooga	TN/37403	amy-doolittle@utc.edu
Roane State Community College (Becky Fields)	276 Patton Lane	Harriman	TN/37748	fieldsb@roanestate.edu
Carson-Newman University (Greg Stanley)	1636 Russel Ave	Jefferson City	TN/37760	gstanley@cn.edu
Volunteer State Community College (Connie Martin)	1480 Nashville Pike	Gallatin	TN/37066	connie.martin@volstate.edu
East Tennessee State University (Courtney Hall)	1276 Gilbreath Drive	Johnson City	TN/37614	HALLCD1@mail.etsu.edu

## Conflict of Interest Prohibition Statement & Attestation Statement

Dr. Crandall, members of the project team, the CNF staff, nor the university faculty/students have affiliations with or involvement in any organization or entity, outside of Western Kentucky University, with any financial interest or non-financial interest. Western Kentucky University attests the funds provided by the CMP Grant will be used for the expressed purpose of enhancing quality of care and the intended purpose of the grant proposal.

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## GENERAL ASSURANCES

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*Assurance is hereby provided that:*

1. This program will be administered in accordance with all applicable statutes, regulations, program plans and applications:
  - a. The laws of the State of Tennessee;
  - b. Title VI of the federal Civil Rights Act of 1964;
  - c. The Equal Employment Opportunity Act and the regulations issued there under by the federal government;
  - d. The Americans with Disabilities Act of 1990 and the regulations issued there under by the federal government;
  - e. The condition that the submitted application was independently arrived at, without collusion, under penalty of perjury; and,
  - f. The condition that no amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Agency in connection with any grant resulting from this application.
2. Each agency receiving funds under any grant resulting from this application shall use these funds only to supplement, and not to supplant federal, state and local funds that, in the absence of such funds would otherwise be spent for activities under this section.
3. The grantee will file financial reports and claims for reimbursement in accordance with procedures prescribed by the State of Tennessee Department of Health.
4. Grantees awarded grants resulting from this application process will evaluate its program periodically to assess its progress toward achieving its goals and objectives and use its evaluation results to refine, improve and strengthen its program and to refine its goals and objectives as appropriate.
5. If applicable, the program will take place in a safe and easily accessible facility.

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### CERTIFICATION/SIGNATURE

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I, THE UNDERSIGNED, CERTIFY that the information contained in the application is complete and accurate to the best of my knowledge; that the necessary assurances of compliance with applicable state/federal statutes, rules and regulations will be met; and, that the indicated agency designated in this application is authorized to administer this grant.

I FURTHER CERTIFY that the assurances listed above have been satisfied and that all facts, figures and representation in this application are correct to the best of my knowledge.

**Cheryl D Davis**

Digitally signed by Cheryl D Davis  
Date: 2019.04.09 17:00:28 -05'00'

**04/09/2019**

Signature of Applicant Agency Administrator

Date Signed (Month/Day/Year)



\*Per the 1/16/2019 teleconference, WKU is supplying our requested changes to the grant contract (GR) as outlined below. As requested, this is being submitted at the time of proposal submission. Should the WKU proposal be selected for funding, we welcome the opportunity to discuss this requested change with you further.

- D.28. State and Federal Compliance. The Grantee shall comply with all applicable state and federal laws and regulations in the performance of this Grant Contract.
- D.29. Governing Law. This Grant Contract shall be governed by and construed in accordance with the laws of the State of ~~Tennessee~~ <sup>Kentucky</sup>. The Grantee agrees that it will be subject to the exclusive jurisdiction of the courts of the State of ~~Tennessee~~ <sup>Kentucky</sup> in actions that may arise under this Grant Contract. The Grantee acknowledges and agrees that any rights or claims against the State of ~~Tennessee~~ <sup>Kentucky</sup> or its employees hereunder, and any remedies arising there from, shall be subject to and limited to those rights and remedies, ~~if any, available under Tenn. Code Ann. §§ 9-8-101 through 9-8-407.~~
- D.30. Completeness. This Grant Contract is complete and contains the entire understanding between the parties relating to the subject matter contained herein, including all the terms and conditions of the parties' agreement. This Grant Contract supersedes any and all prior understandings, representations, negotiations, and agreements between the parties relating hereto, whether written or oral.
- D.31. Severability. If any terms and conditions of this Grant Contract are held to be invalid or unenforceable as a matter of law, the other terms and conditions hereof shall not be affected thereby and shall remain in full force and effect. To this end, the terms and conditions of this Grant Contract are declared severable.
- D.32. Headings. Section headings are for reference purposes only and shall not be construed as part of this Grant Contract.

**E. SPECIAL TERMS AND CONDITIONS:**

- E.1. Conflicting Terms and Conditions. Should any of these special terms and conditions conflict with any other terms and conditions of this Grant Contract, the special terms and conditions shall be subordinate to the Grant Contract's other terms and conditions.
- E.2. Debarment and Suspension. The Grantee certifies, to the best of its knowledge and belief, that it, its current and future principals, its current and future subcontractors and their principals:
- a. are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal or state department or agency;
  - b. have not within a three (3) year period preceding this Grant Contract been convicted of, or had a civil judgment rendered against them from commission of fraud, or a criminal offence in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or grant under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property;
  - c. are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) with commission of any of the offenses detailed in section b. of this certification; and
  - d. have not within a three (3) year period preceding this Grant Contract had one or more public transactions (federal, state, or local) terminated for cause or default.

The Grantee shall provide immediate written notice to the State if at any time it learns that there was an earlier failure to disclose information or that due to changed circumstances, its principals or the principals of its subcontractors are excluded or disqualified.