

UNIVERSITY OF KENTUCKY COLLEGE OF NURSING  
**OFFICE OF NURSING RESEARCH**  
Annual Report 2020-2021



**University of Kentucky, College of Nursing  
Office of Nursing Research  
Annual Report FY 21**

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## Research Report

This University of Kentucky (UK) College of Nursing (CON) Office of Research report provides highlights and trends in CON extramural and intramural researching funding during Fiscal Years (FY) 2017-2021.

### *Types of Grants*

CON principal investigators (PIs) submit various types of grants, generally to one of two types of award programs– extramural research (research dollars are awarded from an organization external to the University of Kentucky, examples include the National Institute of Nursing Research, the National Cancer Institute, the Health Resources & Services Administration, the Patient Centered Outcomes Research Institute, the Kentucky Department for Public Health, American Nurses Foundation) and intramural research [research dollars are awarded from a program internal to the University of Kentucky; examples include the Center for Clinical and Translational Science (CCTS) awards, the Office of the Vice President for Research (VPR) awards, and UK Women & Philanthropy]. Grant awards provide funding for the cost of conducting the research (i.e., direct costs) as well as the cost to the institution to support the facilities and administration of the research (indirect costs). Funding for the indirect, or facilities and administration (F&A), costs of research vary among funding sources as well as the type of award mechanism within funding sources. Intramural research awards, for example, do not generally provide funds for indirect costs.

When applying for extramural funding, PIs in the CON cast a wide net, targeting federal and state agencies, private foundations, and professional associations. Awards to UK vary by funding type. The National Institute of Health (NIH) awards multi-year grants, but funds are distributed on a year-to-year basis, and funding amounts each year can change from that committed at the time of the initial award. As such, the college is credited for only the amount of the award that is funded in given year, rather than the anticipated cumulative total over the full duration of the award. Funds for contracts, however, are guaranteed when the contract is initially awarded. Therefore, the total amount of the award over the life of the contract is counted as occurring at the time the initial contract is awarded. A good example of this would be Patient Centered Outcomes Research Institute (PCORI) contracts – the total amount of funding for a multi-year PCORI contract is credited to the college at the time the contract is awarded.

At the present time, 23 (59%) of the College of Nursing’s tenure-eligible faculty serve as PI (or Multi-PI) on funded research.

### *Information on Indirect (Facilities & Administrative) Costs*

Facilities & Administrative (F&A) costs are real expenses incurred by the university in support of sponsored projects, but which by federal regulation cannot be charged directly to a specific grant, contract, or other sponsored agreement. F&A costs stem from the institutional need to maintain a

shared infrastructure that supports the research and scholarly activities of all investigators. F&A costs are divided into facilities costs (e.g., building depreciation, operation and maintenance, utilities) and administrative costs (e.g., sponsored projects administration, purchasing, accounting, legal services). These funds are important to the College of Nursing because a portion of the funds is returned to the College to support grant development.

The federal F&A cost rate is negotiated periodically with the university's audit agency, the Department of Health and Human Services. The F&A rate varies by type of project (e.g., research, instruction, career development) and location of the work (on-campus vs. off-campus). For research projects that are conducted on the UK campus, which is the most common type of extramurally sponsored project received by the CON, the F&A rate is 53%. F&A support for research projects conducted off campus is 26%. Federal awards involving instruction have a lower F&A rate (46%), and career development awards (e.g., 'K' awards) have an even lower indirect rate (8%). Private foundations, associations and state agencies may or may not separately reimburse F&A costs, and the rates are generally set by the funding agency. PCORI, an independent, nonprofit, nongovernmental organization, has an F&A cost rate limit of 40%. Some foundation awards (e.g., Robert Wood Johnson Foundation's Future of Nursing Scholars; Jonas Scholars) do not provide any F&A reimbursement.

F&A payments are driven by grant expenditures, rather than awards. If UK received a grant for \$100,000, but only spent \$70,000 of that award on research, UK, in turn, would receive an F&A payment based on the \$70,000 that was spent. Due to the amount of time needed for F&A calculations, it takes two years for the F&A to return to the College. In other words, in FY 21, the College of Nursing is receiving F&A distributions from grant expenditures that occurred in FY 19.

### *Unique Facts about the University of Kentucky College of Nursing's Research Portfolio*

When looking at the total number of research dollars generated by an academic unit per fiscal year, it is important to consider the number of faculty members who are supported by the unit that are able to compete for extramural funding. At the University of Kentucky, the College of Nursing has a smaller number of Regular Title Series (RTS) and Special Title Series (STS) faculty (i.e., tenure-eligible faculty) than many other colleges at UK. Within the faculty workforce, RTS faculty members typically receive the greatest amount of institutional support for research and are, in turn, called upon to compete for extramural research funding. The number of faculty members (particularly the number of RTS faculty) within an academic unit is thus a critical resource in competing for grant awards. STS faculty members typically have special assignments (e.g., administrative, clinical or educational assignments) that restrict time for research activities; these faculty members typically receive less institutional support for research. STS faculty members are expected to contribute scholarship, often in association with their special assignments, and are expected to compete for extramural awards to support their special assignments, but are not expected to compete for extramural research funding.

### *Grant Productivity*

The research and scholarship portfolio of the College is influenced by the number of RTS and STS faculty contributing this mission. Tables A thru D below show a breakdown of extramural research

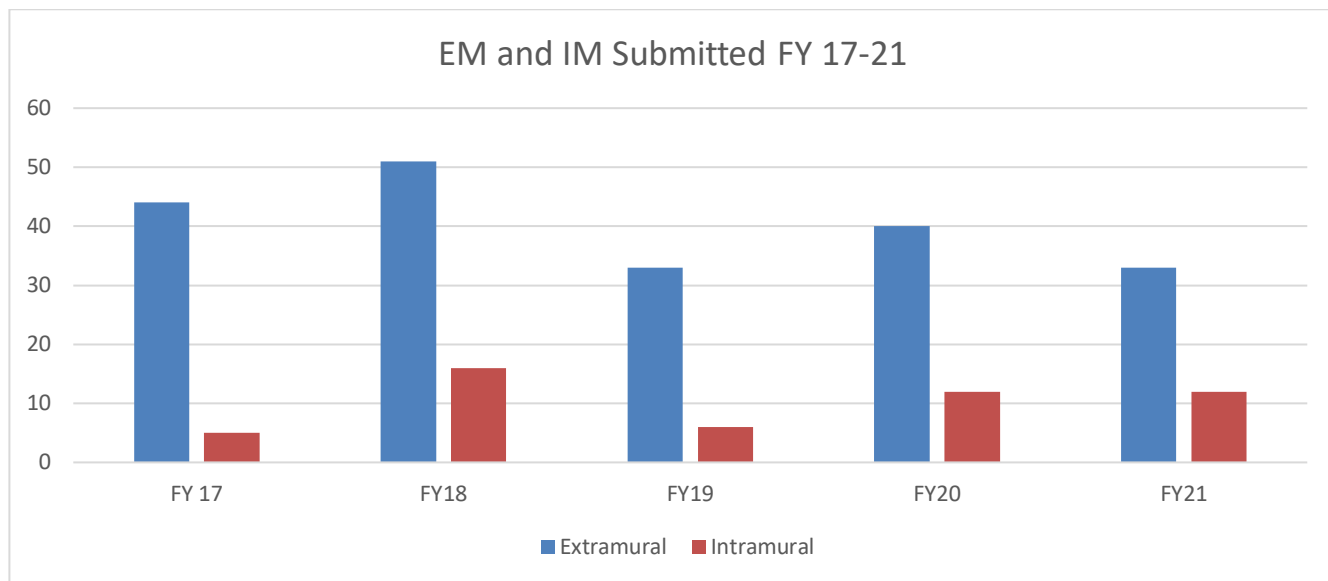
activity and funding trends within the College of Nursing over the previous five years. Table A provides the number of RTS and STS faculty in the College of Nursing since FY17, as of October 1 of the given fiscal year. Over the past five years, the total number of RTS and STS faculty in the College of Nursing has remained relatively stable (38 in FY 17; 39 in FY 21), although the relative number of RTS and STS faculty has changed over time based on the pedagogical needs of the College.

**Table A. Total Number of CON Faculty**

	<b>FY 17</b>	<b>FY 18</b>	<b>FY 19</b>	<b>FY 20</b>	<b>FY21</b>
<b>Regular Title Series (RTS) Faculty*</b>	18	18	17	16	18
<b>Special Title Series (STS) Faculty</b>	20	18	19	23	21
<b>Other Full-Time Faculty</b>	30	29	31	32	32

\*The Dean of the College of Nursing is not included in the RTS totals.

Figure 1 and Table B provide data on total number of grant submissions and on the number of grants submitted per faculty member over the past five years. The total number of grant applications has remained stable across time.



**Figure 1. CON Grant Proposals Submitted FY 17-21.**

The number of intramural grants submitted per year has also remained relatively stable and is generally lower than the total of the number of extramural grants submitted per year. In FY 21, College faculty submitted 12 intramural grant applications.

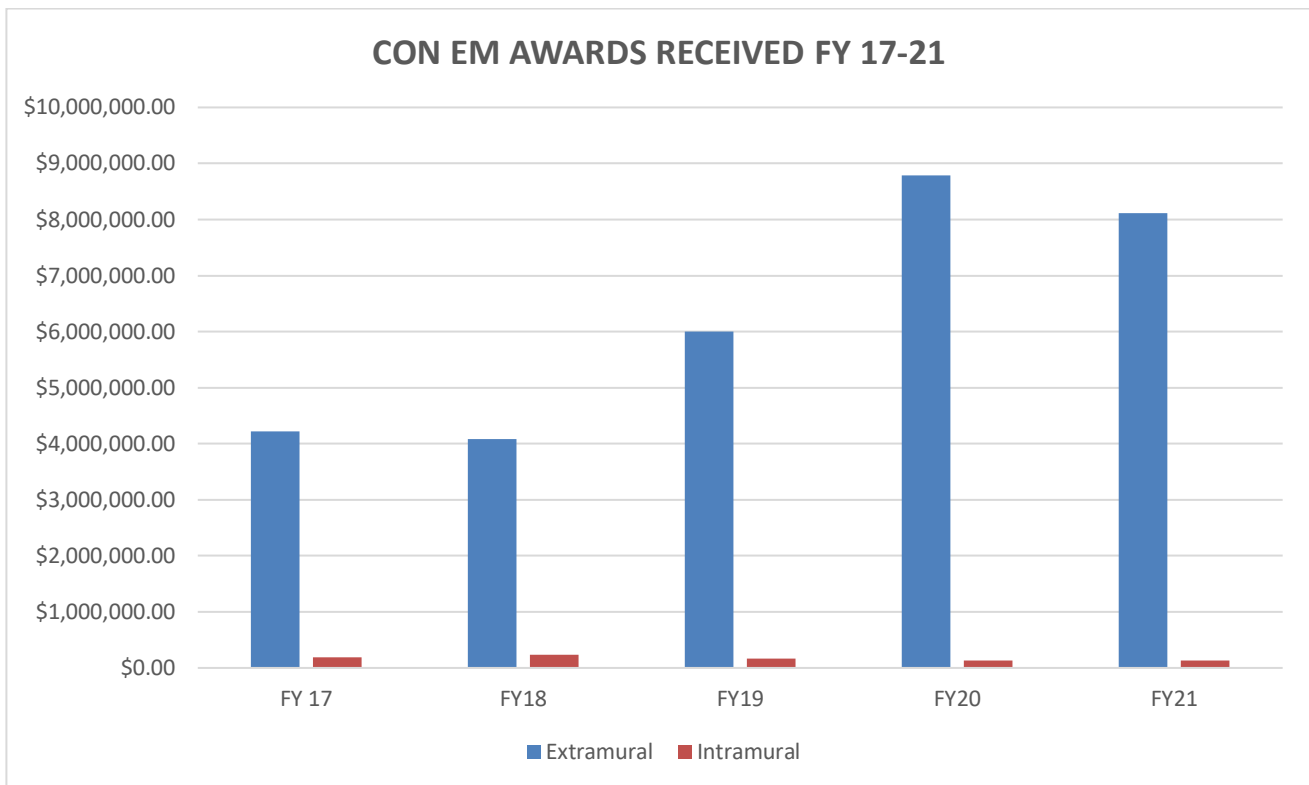
**Table B. Extramural (EM) Grant Applications**

	FY 17	FY 18	FY 19	FY 20	FY 21
<b>Total # of EM grant applications submitted by CON PIs</b>	44	51	33	40	33
<b>Average # of grant applications per RTS faculty member</b>	2.42	2.83	1.94	2.5	1.83

**Table C. New Extramural Grant Funding; Directs Costs Only**

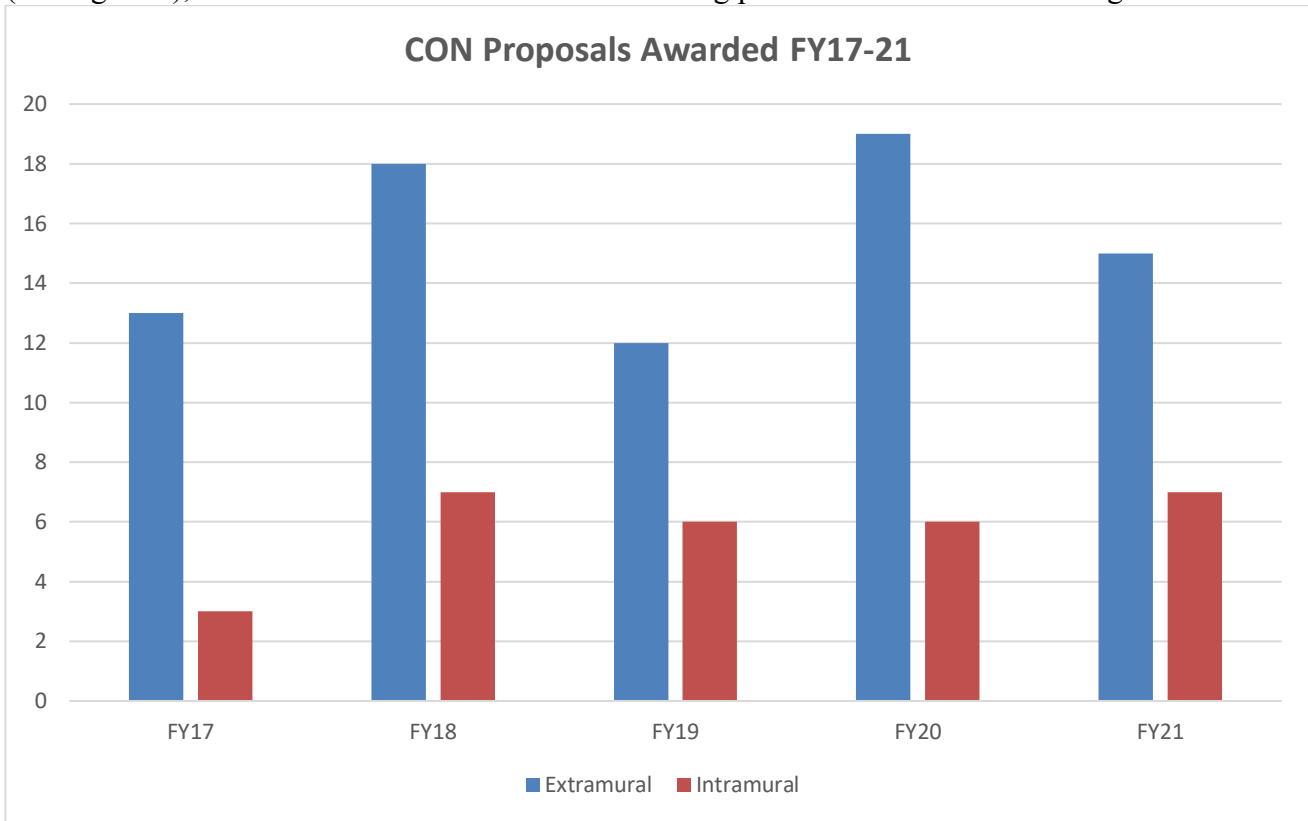
	FY 17	FY 18	FY 19	FY 20	FY 21
<b>Total EM Funding</b>	\$4,221,848	\$4,080,684	\$6,007,136	\$8,782,467	\$8,113,459
<b>Average # of grant \$ per RTS faculty member</b>	\$ 234,547	\$ 226,705	\$ 353,361	\$ 548,904	\$ 450,747

Table C and Figure 2 present extramural grant funding for the College over the past five years. From the low of approximately \$4 million dollars in direct funding awarded in FY18, the CON has been awarded over \$8 million dollars in the most recent fiscal year. On average, during the most recent fiscal year, each RTS faculty member has generated nearly ½ million dollars in direct research funding per year.



**Figure 2. CON Extramural Awards Received FY 17-21**

Figure 3 presents the number of extramural and intramural grants that were funded in the College since FY 17. The total number of awards received each year has remained relatively constant, between 16 in FY 17 and 25 in FY 18 and FY 20. Given the increase in award funding over time (see Figure 2), it is clear that the total amount of funding per award has been increasing over time.



**Figure 3. CON Proposals Awarded FY 17-21**

Table D presents the amount of extramural grant expenditures, per fiscal year, from CON PIs. Of note, grant expenditures are a more direct way of tracking research effort, as expenditures are driven by actual research activity. Table D demonstrates a significant increase in research effort in FY19 and FY20 which is consistent with the increases in total research funding awarded to the College that year. Research expenditures for FY21 were not available at the time of this report.

**Table D. Extramural (EM) Grant Expenditures (Total/Total per RTS) from CON PIs**

	FY 17	FY 18	FY 19	FY 20	FY 21
<b>EM Grant Expenditures</b>	\$4,225,617	\$4,233,489	\$6,008,078	\$5,997,114	Not Available
<b>Average EM Grant Expenditure per RTS faculty member</b>	\$ 234,756	\$ 235,194	\$ 353,416	\$ 374,819	Not Available

Table E presents the standing of the University of Kentucky College of Nursing in total NIH funding relative to other academic units of Nursing in public universities as of October 18, 2021. The CON currently ranks 15<sup>th</sup> among all public academic units of nursing.

**Table E: Top 20 NIH Funded Public Academic Nursing Units**

ORGANIZATION	AWARDS	FUNDING
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO	30	\$13,152,764
UNIVERSITY OF ALABAMA AT BIRMINGHAM	17	\$8,372,700
UNIVERSITY OF ILLINOIS AT CHICAGO	20	\$8,151,359
UNIVERSITY OF WASHINGTON	20	\$7,860,609
WASHINGTON STATE UNIVERSITY	9	\$7,441,917
UNIVERSITY OF MICHIGAN AT ANN ARBOR	21	\$7,164,268
UNIV OF NORTH CAROLINA CHAPEL HILL	19	\$6,136,920
OHIO STATE UNIVERSITY	16	\$5,638,498
UNIVERSITY OF MINNESOTA	12	\$5,506,953
ARIZONA STATE UNIVERSITY-TEMPE CAMPUS	7	\$4,965,635
UNIVERSITY OF FLORIDA	12	\$4,959,033
UNIVERSITY OF MARYLAND BALTIMORE	9	\$3,868,884
INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	9	\$3,377,742
UNIVERSITY OF CALIFORNIA LOS ANGELES	8	\$2,848,226
<b>UNIVERSITY OF KENTUCKY</b>	<b>6</b>	<b>\$2,716,191</b>
UNIVERSITY OF TEXAS ARLINGTON	8	\$2,658,202
UNIVERSITY OF ARIZONA	5	\$2,618,430
UNIVERSITY OF UTAH	9	\$2,563,229
UNIVERSITY OF CALIFORNIA-IRVINE	6	\$2,290,934
UNIVERSITY OF WISCONSIN MILWAUKEE	3	\$2,287,744

*Intramural Funding Sources*

CON PIs have received funding from several intramural sources such as the UK Office of the Vice President for Research Support Grants Program, the Center for Clinical and Translational Sciences (CCTS), and UK Markey Cancer Center’s pilot funding opportunities [e.g., the Cancer Center Support Grant (CCSG) and Kentucky Lung Cancer Research Program awards]. Table F provides the number of IM applications submitted and funded, as well as the amount awarded, for FY17-21.

**Table F. CON IM applications submitted, funded, and dollar amount by fiscal year**

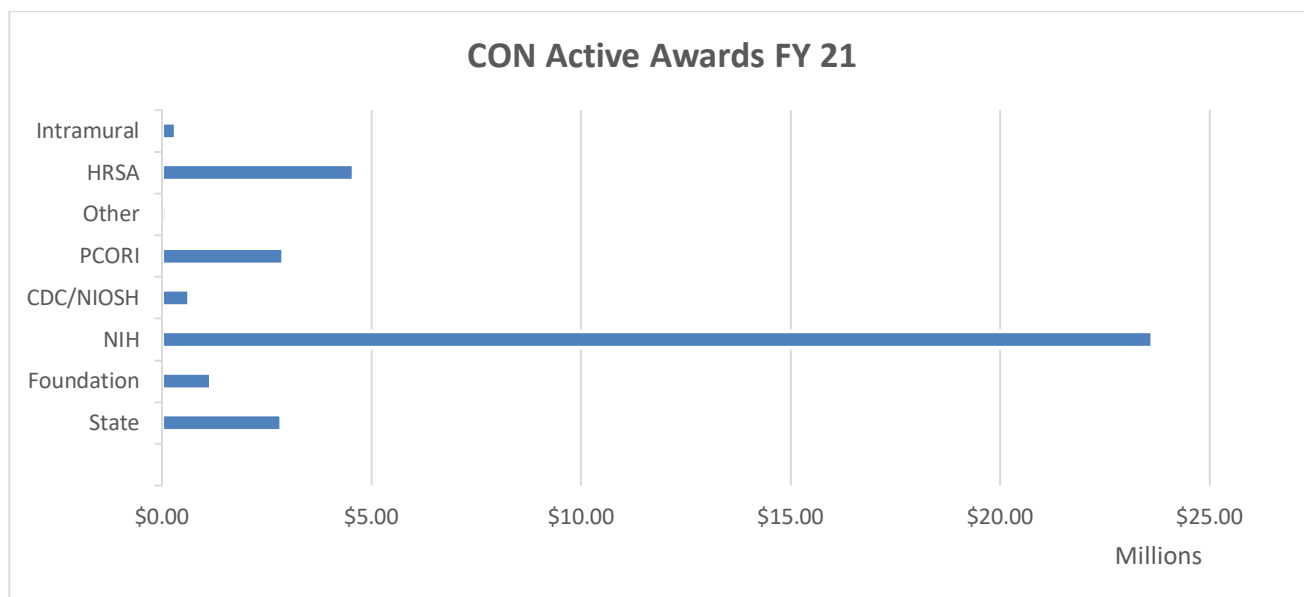
	FY 17	FY 18	FY 19	FY 20	FY 21
# IM Applications Submitted	5	16	6	12	12
# IM Applications Funded	3	7	6	6	7
Total IM Funding	\$186,000	\$238,769	\$165,000	\$133,425	\$129,421



Every year, the CON allocates a portion of the returned F&A funding to support a pilot-funding program for its faculty members. Applications were received and peer-reviewed in February and July, and funds were awarded in March and August. Activities supported by this program are not included in the data provided in Table F. In FY 21, 1 pilot study application was funded and received \$20,000 in funding.

*Sources of research support*

Figure 4 presents the funding sources for all active awards in FY 21. Over the last four years, NIH has been the predominant source of extramural funding agency for CON faculty. Some faculty members have pursued funding from other federal agencies (Health Resources & Services Administration [HRSA], Centers for Disease Control and Prevention [CDC], Patient Centered Outcomes Research Institute [PCORI]), with positive outcomes.



**Figure 4. CON Active Research Awards (total funding) in FY 21**

*UK College of Nursing Funded Faculty in FY21*

The research interests and funding sources and amounts for PIs in the CON are listed in Table F. Twenty-three members of the CON have active funded projects that support research and scholarship focusing on education, health disparities, occupational health, tobacco and drug use treatment and prevention, maternal and fetal health, cardiovascular health, obesity and diabetes prevention, and cancer prevention.

**Table F: Total Intramural and Extramural Funding on Current Active Awards (PI Only)**

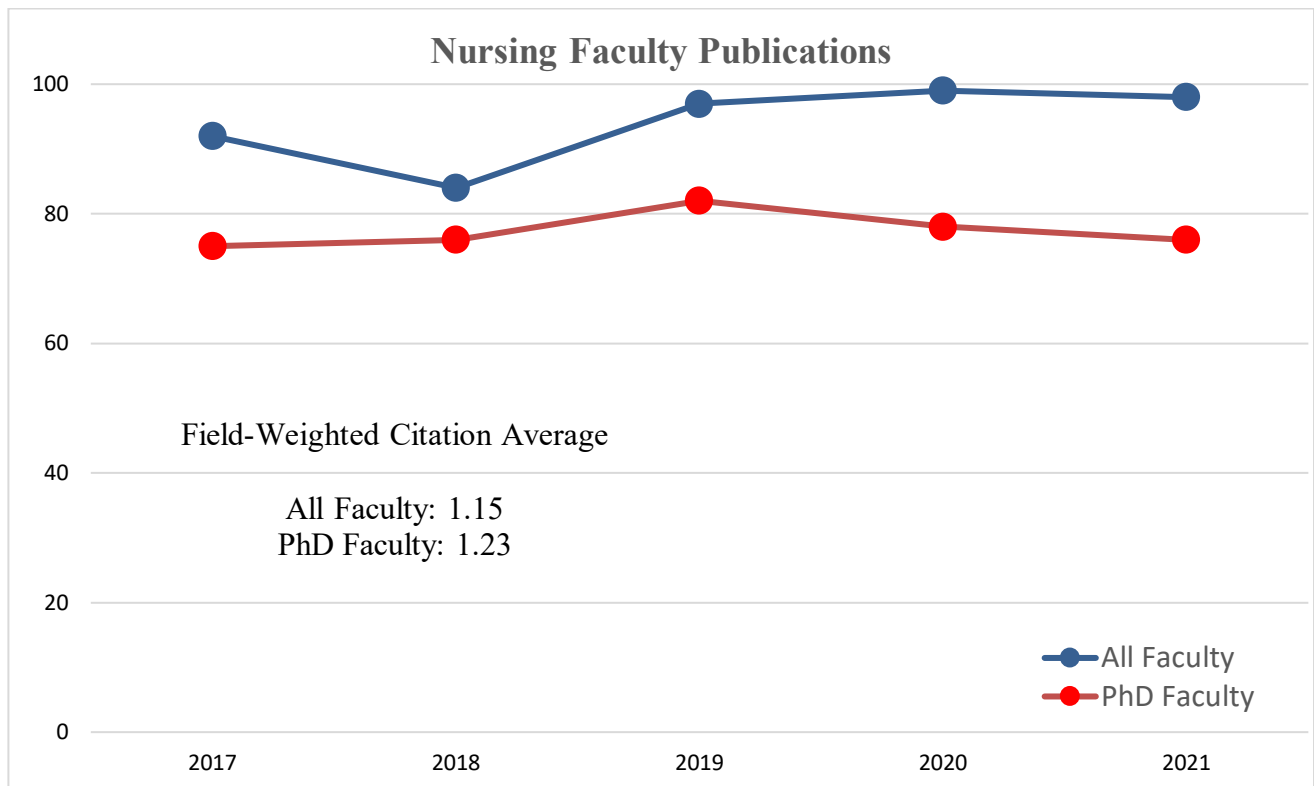
<b>Name</b>	<b>Research Interest</b>	<b>Primary Funding Source</b>	<b>*Total</b>
Karen Butler	Occupational Health Nurse Training	NIOSH	\$628,358
Kristin Ashford	Maternal and Child Health	Ky. Cabinet for Health and Family Services	\$901,500
Camille Burnett	Community Engagement, Health Disparities and Vulnerable Populations	Federation of Virginia Foodbanks; UK CHET Pilot	\$115,000
Misook Chung	Cardiovascular Health: Chronic Patients and Caregivers	NIH-NINR; CON Pilot	\$10,000
Amanda Fallin-Bennett	Tobacco Policy and Substance Abuse	KDPH, CON Pilot, NCI, UK CHET Pilot	\$1,285,997
Jan Forren	PeriAnesthesia Nursing	SNRS/AORN	\$10,000
Ellen Hahn	Tobacco Policy and Environmental Health	NIH-NIEHS (P30 and R01), KDPH, UK CCTS, Interact for Health (Subawards), State Medicaid Grant, Radon	\$11,770,839
Sharon Lock	Nurse Training	HRSA	\$1,770,319
Ana Maria Linares	Intervention to Enhance Breastfeeding and Obesity Risk Reduction	UKCCTS; CON Pilot	\$42,000
Debra Moser	Cardiovascular & Cerebrovascular Health – Risk Self-Management	NIH-NINR, Jonas, RWJF	\$5,516,707
Gia Mudd-Martin	Cardiovascular Health, Diabetes, and the Family Structure	NINR; NIH OD; OBSSR, CCTS	\$5,119,663
Deborah Reed	Occ Health – Kentucky Farmers	Hillman Foundation	\$200,000
Tyrone Borders	Rural Health Research	HRSA	\$2,800,000
Julie Marfell	Nursing Leadership, Rural Health, Farmer Stress, Nursing Workforce Issues	State of Kentucky	\$118,181
Janie Heath	Nursing Workforce and Rural Health	AARP/RWJF	\$50,000
Stacy Stanifer	Tobacco and Radon Prevention	Conference of Radon Professionals	\$4,150
Elizabeth Salt	Chronic Pain Management	Pfizer; CCTS; CON Pilot	\$460,438
Zim Okoli	Tobacco Policy and Substance Abuse	KDPH, State Medicaid Grant	\$1,000,747
Jean Edward	Promoting equitable access to healthcare; Healthcare access and disparities research	CON Pilot; ACS IRG, RWJF	\$594,268
Martha Biddle	CV Health: Secondary Prev of CV Disease	CON Pilot; UK CCTS Pilot	\$37,000
Lovoria Williams	Interventions to reduce health disparities among underserved populations	NIDDK, UK VPR Pilot	\$2,991,335
Jennifer Miller	Palliative Nursing and CV Health	UK CCTS Pilot	\$25,000
Lee Anne Walmsley	Adult Learners and Educational Research	UK Women and Philanthropy	\$50,000
			<b>\$36,237,181</b>

\*Total projected award amounts for the referenced active sponsors

Scholarship

	FY 17	FY 18	FY19	FY20	FY21
<b>Presentations</b>	<b>170</b>	<b>156</b>	<b>147</b>	<b>160</b>	<b>104</b>
<b>Presentations/Faculty</b>	<b>2.5</b>	<b>2.4</b>	<b>2.2</b>	<b>2.3</b>	<b>1.5</b>

Table G lists the number of presentations given by CON faculty since FY 17. During FY 20, College of Nursing faculty gave a total of 160 research-focused presentations at professional conferences (2.3 presentations per faculty member). This reflects a relatively stable rate of presentations over the previous four years period. During FY21, a year in which travel was significantly reduced by the pandemic, presentation productivity dropped off significantly. These data come from the Digital Measures database, which is dependent on faculty reporting of productivity.



**Figure 5. CON publications and associated field-weighted citation impact ratings**

Figure 5 provides data on CON faculty (all full-time faculty, and the subset of full-time faculty who support the PhD program) peer-reviewed data-based publications since 2017, along with the average field-weighted citation impact of the publications over that period. The impact data are derived from Scopus®, which indexes content from over 5,000 publishers (24,600 active journal and other serial titles) in the health, life and social sciences. Over the past five years, CON faculty have averaged 94 publications per year, with PhD faculty contributing to 77 of these per year. The impact of these publications is significant, with each publication by a CON faculty member being cited 15% more

frequently than a typical publication in the Nursing field (1.15 field-weighted citation index), and each publication from a faculty member supporting the PhD program being cited 23% more frequently than a typical publication in the field (1.23 field-weighted citation index). As of November, 2021, College of Nursing faculty have published 98 data-based articles in referred journals (1.4 publications per full-time faculty member). Faculty who supported the PhD program have contributed to 76 of these publications (3.5 publications per faculty member).

### *Conclusion*

The University of Kentucky College of Nursing faculty members are actively engaged in patient-oriented and public policy focused research that impacts the citizens of the Commonwealth (e.g., cardiovascular health, tobacco smoking, drug abuse, maternal and fetal health, occupational health of farmers). By all reasonable metrics, including grant submissions and funding, and data-based publications and presentations, the CON continues to make significant contributions to the science of nursing and producing new knowledge that advances the health of the Commonwealth of Kentucky and beyond.

## Publications

2020

- Abdalahim, M.S., Khalil, A.A., Alramly, M., Alshlool, K.N., Abed, M.A., Moser, D.K. (2020). Pre-existing chronic kidney disease and acute kidney injury among critically ill patients. *Heart and Lung*. 49, 626-629.
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## New Faculty Research Profile: Adebola Adegboyega, PhD, RN



### *Dedicated Program of Research*

Adebola Adegboyega, PhD, RN, Assistant Professor and member of the Community Health Advocacy iNterventions Generating Equity (CHANGE) Team has interest and experience in conducting health disparities and community engaged research funded by NIH as well as other private non-profit agencies. She is currently the PI of a K01 Career Development Award whose purpose is to develop and pilot test a Cervical Health Program, designed to promote screening and reduce perceived barriers to cervical cancer among African American and Sub-Saharan African immigrant women. Dr. Adegboyega is also the PI or co-I on three other studies. One of these studies focuses on improving uptake of cervical cancer prevention services in Appalachia through the delivery of a clinic-based integrated prevention program designed to target individual, social and community, health system and broader contextual-level barriers related to the burden of cervical cancer.

### *Research Translation*

As a community engaged researcher, Dr. Adegboyega contributes her expertise and service to her community as she leads and coordinates a yearly health fair in her local church (The Redeemed Christian Church of God). This yearly health fair features health talks and screenings for the community.

### *Current Funding (PI and Co-I)*

<b>Sponsor</b>	<b>Title</b>	<b>Total Award Amount</b>
National Cancer Institute (K01)	Promoting Cervical Cancer Screening among African American and Sub-Saharan African Immigrant women	\$767,140

Markey Cancer Center Support Markey Cancer Center Support Grant NCI 3P30CA177558-08S1 (Evers M., PI).  Geographical Management of Cancer Health Disparities Program (GMaP) Supplement.	Black Adults' HPV knowledge, attitudes, and beliefs	\$10,000
P01 CA229143, NIH/NCI (Dignan M., MPI)	Improving Uptake of Cervical Cancer Prevention Services in Appalachia.	\$141,000
Vanderbilt Diabetes Center, Southeast Pilot and Feasibility. (Smalls B., PI, )	Diabetes Reversal Outcomes Program (Drop): An Intervention Tailored For Rural Communities	\$220,000

*Select Publications*

1. Adegboyega A., Desmennu A. T., & Dignan M. (2021). Qualitative assessment of attitudes toward cervical cancer (CC) screening and HPV self-sampling among African American (AA) and Sub Saharan African Immigrant (SAI) women. *Ethnicity & Health*, 1-18.  
<https://doi.org/10.1080/13557858.2021.1980771>
2. Adegboyega A, Dignan M, Sha S, Nkwonta C, Williams LB.(2021). Psychological factors among Appalachian women with abnormal Pap results. *J Rural Health*. doi: 10.1111/jrh.12585. PubMed PMID: 33955052.
3. Adegboyega A, Dignan M, Hatcher J. (2019). Correlates of pap screening among sub-Saharan African immigrant (SAI) women. *Journal of Health Care for the Poor and Underserved*. 30(3):951-67.
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## New Faculty Research Profile: Ty Borders, PhD



### *Dedicated Program of Research*

Ty Borders, Ph.D., is a Professor of Nursing and leading expert on rural health services and policy. He is a Fellow of the American College of Epidemiology, previously served on the National Advisory Committee on Rural Health and Human Services, and received the 2020 Outstanding Alumni Award for Career Achievement from the University of Iowa College of Public Health

Currently, Dr. Borders is Director/P.I. of the Rural & Underserved Health Research Center (RUHRC), one of seven rural health research centers funded by the Health Resources and Services Administration (HRSA). The RUHRC's mission is to advance understanding about facilitating access and improving population health in rural America, especially highly underserved rural areas and populations. Affiliated RUHRC faculty and staff include researchers from the UK Colleges of Pharmacy, Medicine, and Communication as well as the American Board of Family Medicine and the University of North Carolina at Charlotte. Current projects are addressing health disparities in family medicine settings, comparing hospitals' third-party negotiated pricing in rural and urban hospitals, and comparing rural and urban cancer survivors' follow-up care experiences.

Dr. Borders was recently awarded a grant from the National Institute on Drug Abuse to examine patients' and physicians' experiences using telehealth for the treatment of opioid use disorder (OUD). The COVID-19 pandemic forced federal regulators to rapidly change policies for prescribing medication for OUD, and many primary care professionals (PCPs) quickly changed their practices to allow for telehealth for this type of care. This study aims to examine physician and patient experiences with telehealth by interviewing 50 PCPs (nurse practitioners, physician assistants, and physicians) and surveying 250 patients in Kentucky and Arkansas.

Dr. Borders was also recently awarded a grant from the National Cancer Institute as a supplement to the long-standing Markey Cancer Center P30 (P30CA177558). Childhood cancer survivors residing in rural areas, many of whom travel to urban-based cancer treatment centers, may face particular challenges transitioning to follow-up care when returning to their home communities. This project will examine rural/urban disparities in childhood cancer survivors' organizational barriers to follow-up care by conducting qualitative interviews among 20 rural-serving PCPs (including nurse practitioners) and quantitative surveys among 200 parents (100 rural, 100 urban) of childhood cancer survivors.



### *Research Translation*

A key mission of the RUHRC is to translate findings to rural health policy makers, practitioners, and managers as well as rural citizens. The RUHRC collaborates closely with the Federal Office of Rural Policy to disseminate policy briefs to elected officials and governmental agencies. The RUHRC also works with the UK Institute for Rural Journalism to disseminate findings to rural newspapers and other rural serving media outlets. RUHRC policy briefs have been downloaded more than 12,000 times since the first was published in October 2017. Some of the most-downloaded policy briefs include:

- *Illicit Drug and Opioid Use Disorders among Non-Metropolitan Residents*. Available at [https://uknowledge.uky.edu/ruhrc\\_reports/3/](https://uknowledge.uky.edu/ruhrc_reports/3/)
- *Suicidal Thoughts, Plans, and Attempts by Non-Metropolitan and Metropolitan Residence*. Available at [https://uknowledge.uky.edu/ruhrc\\_reports/9/](https://uknowledge.uky.edu/ruhrc_reports/9/)
- *Risky Substance Use Behaviors among Adolescents Residing in Non-Metropolitan and Metropolitan Counties in the United States, 2017-2018*. Available at [https://uknowledge.uky.edu/ruhrc\\_reports/15/](https://uknowledge.uky.edu/ruhrc_reports/15/)
- *Do Hospital Closures Affect Patient Time in an Ambulance?* Available at [https://uknowledge.uky.edu/ruhrc\\_reports/8](https://uknowledge.uky.edu/ruhrc_reports/8)
- *Spatial Analysis of Health Care Utilization among Medicare Beneficiaries with Coal Workers' Pneumoconiosis and Other Related Pneumoconiosis*. Available at [https://uknowledge.uky.edu/ruhrc\\_reports/17/](https://uknowledge.uky.edu/ruhrc_reports/17/)

Information about all current RURHC projects, presentations, and publications may be found at [ruhrc.uky.edu](http://ruhrc.uky.edu).

### *Selected Peer-Reviewed Publications*

In addition, below are some of Dr. Borders' recent publications in peer-reviewed journals.

- Arif AA, Adeyemi O, Laditka SB, Laditka JN, Borders T. Suicide mortality rates in farm-related occupations and the agriculture industry in the United States. *American Journal of Industrial Medicine*. 2021;64(11):960-8.
- Peterson L, Morgan ZJ, Borders TF. Practice predictors of buprenorphine prescribing by family physicians. *Journal of the American Board of Family Medicine* 2020;33(1):118-23.
- Hilsenrath PE, Borders TF. Ethics and economics of the COVID-19 pandemic in the United States. *Health Services Research and Managerial Epidemiology* 2020;Sep 15;7:2333392820957661.
- Bennet KJ, Borders TF, Holmes MG, Kozhimannil K, Ziller E. What is rural, anyway? *Health Affairs* 2019 38(12): 1985-1992.
- Wen H, Borders TF, Cummings JR. Trends in buprenorphine prescriptions by physician specialty. *Health Affairs* 2019 38(1):24-28.

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