November 10, 2023

H. Dele Davies, MD
Senior Vice Chancellor for Academic Affairs
University of Nebraska Medical Center
987810 Nebraska Medical Center
Omaha, NE 68198-7810
dele.davies@unmc.edu

Dear Dr. Davies:

I have received the request for establishing a new Doctor of Nutrition and Dietetics degree (DrDN) in the College of Allied Health Professions at the University of Nebraska Medical Center (UNMC). Based on the information provided, I understand this will fill a workforce need and advance the profession and practice of Registered Dietitian Nutritionists (RDNs) by providing additional knowledge and competencies to fill leadership roles through an advanced practice course of study including advanced clinical nutrition and nutrition science, leadership, advocacy, education in higher learning institutions, and scholarly activity.

I concur with this decision and that it be forwarded to the Board of Regents.

Sincerely,

Jeffrey P. Gold, M.D.
Chancellor

University of Nebraska Medical Center
Jeffrey P. Gold, MD, Chancellor
986605 Nebraska Medical Center | Omaha, NE 68198-6605 | 402.559.4200 | jeffrey.gold@unmc.edu
unmc.edu

UNMC ACADEMIC AFFAIRS

MEMO

TO: Jeffrey P. Gold, MD
Chancellor

FROM: H. Dele Davies, MD, MS, MHCM
Senior Vice Chancellor for Academic Affairs
Dean for Graduate Studies

DATE: October 26, 2023

RE: College of Allied Health Professions Doctor of Nutrition and Dietetics proposal

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Attached is a proposal for a Doctor of Nutrition and Dietetics program, which will allow practicing health care professionals to obtain an advanced degree through a distance format. This program will allow practicing professionals to further develop competencies and advance their careers.

I have reviewed the revised document and I am in support of the request to submit to the Board of Regents.

July 25, 2023

David Jackson, PhD
Vice Provost
University of Nebraska
3835 Holdrege
Lincoln, NE 68583-0743

Dear Dr. Jackson:

I am writing in support of the development of a new professional program, Doctor of Nutrition and Dietetics in the College of Allied Health Professions (CAHP) at the University of Nebraska Medical Center (UNMC). Specifically, I want to address the budget for the proposed program.

Should the proposal to develop a Doctor of Nutrition and Dietetics program be approved, the start-up of the program would have no negative financial impact on other programs in the CAHP. Tuition revenue for the proposed program is expected to commence with the first cohort of 8 students, anticipated in the Fall of 2024, with incremental enrollment growth in the ensuing years. The program will generate tuition revenue sufficient to cover associated expenses.

The mission of UNMC and the CAHP, as Nebraska's only public academic health science center, is to offer health professions education programs to serve both the students and ultimately the citizens of Nebraska and the region. The CAHP is committed to educating the most highly qualified allied health workforce and believes there is a need in Nebraska and the region for professionals with a Doctor of Nutrition and Dietetics, and that this need will only increase in the years ahead.

As such, we are committed to the development of the proposed program, and the investment required to ensure the highest level of success.

Sincerely,

Kyle P. Meyer, PhD, MS, PT, FASAHP
Dean

University of Nebraska Medical Center
College of Allied Health Professions
Office of the Dean
984000 Nebraska Medical Center
Omaha, NE 68198-4000 | 402.559.7428 | unmc.edu/alliedhealth/

University of Nebraska Lincoln

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Nutrition and Health Sciences

November 29, 2023

Kyle P. Meyer, PhD
Dean, College of Allied Health Professions
University of Nebraska Medical Center
Omaha, NE 68198-4000

Dear Dr. Meyer,

This letter is to convey that the Department of Nutrition and Health Sciences and the College of Education and Human Sciences at the University of Nebraska-Lincoln (UNL) support the development of the Advanced Practice Doctor of Nutrition and Dietetics Practice proposed by the College of Allied Health Professions (CAHP) at the University of Nebraska Medical Center (UNMC).

This program complements the accredited nutrition and dietetics program at the University of Nebraska-Lincoln. The Advanced Practice Doctorate degree will allow practicing graduates from the UNL Professional Studies in Dietetics Future Education Model program the option to pursue a practice-based professional doctorate. UNL and UNMC provide the only nutrition and dietetics programs in the State of Nebraska and have historically worked together to meet the needs in the state for Registered Dietitian Nutritionists.

The proposed degree does not represent a conflict or duplication of programs in the Department of Nutrition and Health Sciences and supports the mutual efforts of UNMC and UNL in providing nutrition services to the citizens of Nebraska and beyond its borders (see Appendix A).

Sincerely,

Heather Rasmussen PhD, RDN
Associate Professor
Director, Professional Studies in Dietetics Program
Nutrition and Health Sciences
University of Nebraska-Lincoln
heather.rasmussen@unl.edu

Nicholas J. Pace, EdD
Acting Dean
College of Education & Human Sciences
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Appendix A

Opportunities for Partnership and Synergy between UNMC and UNL

Drs. Rasmussen (UNL) and Hanson (UNMC) have a long history of collaboration and have worked together in the development of this proposal to identify **areas of synergy** and opportunities for **resource sharing** across both institutions. The purpose of this addendum is to provide additional information from these discussions to **clarify collaborations** (existing and future) and **opportunities to expand**.

A. Analysis of synergy and examination of duplication between UNL and UNMC doctoral level programs.

A.1 UNMC DND program overview: The proposed DND program focuses on ***advancing clinical practice*** through accreditation-defined competency-based education. The goal of the DND program is to develop graduates who are competent in the practice of advanced clinical nutrition.

A.2 UNL PhD program overview: The department of Nutrition and Health Sciences at UNL offers a PhD in Nutrition and a PhD in Human Sciences. Both UNL PhD options in are designed for students who hold a strong interest in ***nutrition research.*** *Doctoral students can focus on several specific areas of nutrition research:*

1. *Biochemical and Molecular Nutrition:* This STEM focus area is designed to meet the needs of nutritional specialists with biochemical and molecular knowledge in academia, industry, government, and non-government organizations.

2. *Community Nutrition and Health Promotion:* This focus area prepares students for teaching, outreach, and research careers in Extension, community health, and related areas to lead community-based food, nutrition, and health programs.

3. *Nutrition and Exercise:* This focus area is designed for students with a focus in exercise physiology and performance nutrition.

A.3 Takeaways and Opportunities:

1. Analysis of programs currently available to students identifies a clear gap in doctoral-level education in medical/clinical nutrition. ACEND data indicates that approximately 70% of Registered Dietitian Nutritionists work in the field of medical/clinical nutrition practice (acute and ambulatory health care). This provides a rationale for an advance course of study geared towards students who are engaged in the practice of medical/clinical nutrition therapy.

2. Analysis of doctorate programs and focus areas at UNL and UNMC identifies no duplication with the proposed degree.

3. The UNMC doctorate degree offers an alternate path for UNL masters-level graduates who do not wish to pursue a research-oriented doctorate while **promoting retention of UNL graduates in the NU system.**

4. Ongoing collaboration continues between the programs (PhD and DND) to identify any opportunities which would optimize existing faculty resources and content expertise. Some examples of this may include offering select DND courses to PhD students (see table map below)

B. Analysis of courses offered for doctoral-level training at UNMC and UNL

B.1: Crosswalk of UNMC and UNL doctorate level courses

Course	UNMC	UNL	Offered online, asynchronous	Clinical or Healthcare focus	STEM focus	Opportunity for resource sharing*
NTSC 760: Integrative Nutrition and Emerging Concepts in Advanced Nutrition Practice	x		x	x		
NUTR 763: Applied Advanced Nutrition Sciences	x		x	x		
NUTR 766: Advocacy and Global Health in the Advanced Practice of Nutrition	x		x	x		
HPTT 801: Foundations of Health Professions Education	x		x	x		Option for UNL students
HPTT 802: Instructional Design for Health Professions Education	x		x	x		Option for UNL students
HPTT 805: Evaluation and Assessment of Teaching and Learning in Health Profession Education	x		x	x		Option for UNL students
HDS 831: Management in Health Care	x		x	x		Option for UNL students
HDS 852: Design of Quality Improvement Initiatives	x		x	x		Option for UNL students
HPPT 823: Leadership in Health Professions Education	x		x	x		Option for UNL students
HDS 815: Communication and Culture in Healthcare	x		x	x		Option for UNL students
BIOS 806: Biostatistics	x		x		x	Option for UNL students
NUTR 785: Research Methods for Advanced Nutrition Practice	x		x	x		
NUTR 820: Molecular Nutrition		x			x	
NUTR 821: Molecular Nutrition Techniques		x			x	
NUTR 845: Complications of Maternal Obesity		x		x	x	Option for UNMC students who are Nebraska-based with a clinical emphasis in maternal-child health
NUTR 926: Carbohydrate and Lipid Nutrition		x			x	Option for UNMC students who are Nebraska-based
NUTR 950: Integrated Principles of Human Nutrition		x			x	Option for UNMC students who are Nebraska based
NUTR 805: Research Methods		x			x	
NUTR 859: Nutrition: A Focus on Life Stages		x	x	x		Option for UNMC students with a clinical emphasis in a specific life stage
NUTR 860: Health Behavior Theories and Approaches		x	x	x		Option for UNMC students with a clinical emphasis in behavioral therapy
NUTR 976: Organization and Management in Community Nutrition and Health Promotion		x	x			

*All 700-level professional courses based on doctoral-level practice competencies as defined by ACEND.
*All options subject to advisor approval (UNL and UNMC) and competency attainment (UNMC).
*700-level courses used for professional, graduate level courses at UNMC. UNL requires 800 or 900 level courses for graduate level programs. If interest exists, UNMC will explore cross-listing 700 level courses as 800 level courses.

B.2 Takeaways and Opportunities:

1. Analysis of coursework between UNL and UNMC identified minimal areas of duplication.
2. Analysis of coursework between UNL and UNMC identifies opportunities for resource sharing, potentially enhancing uptake of UNL courses.

C. Analysis of research collaborations for UNL and UNMC

C.1 Synergy in research collaborations across UNMC and UNL. Current funded research collaborations include:

1. Nutrition phenotyping: A Novel Tool for Improving Dietary Assessment in Cancer Survivors. Collaborators: Jackson (UNMC), Wang (UNL).
2. Nutrition Phenotyping in Rural Stroke Survivors. Collaborators: Jackson (UNMC), Wang (UNL).
3. Impact of Blueberry Consumption on Intestinal Permeability, Gut Microbiota, and Gut-Derived Inflammation in Individuals with Elevated Risk of a Pro-Inflammatory Gut Milieu. Collaborators: Rasmussen (UNL), Hanson (UNMC).
4. Palmitoleate protects against Zika virus infection in trophoblasts by activating innate immunity. Collaborators: Natajaran (UNL), Hanson (UNMC).
5. High Fiber Wheat for a Healthier Society. Collaborators: Rose (UNL), Hanson (UNMC).
6. Use of Omega-3 Fatty Acids to Inhibit Drug-Induced Inflammation and Synaptic Alterations. Collaborators: Ponce (UNMC), Member of UNL Rural Drug Addiction Research Center (RDAR).

C2. Takeaways and opportunities

1. Multiple areas of research synergy exist which combine UNL's pre-clinical and UNMC's clinical research strengths.
2. Existing research collaborations provide students with opportunities across the spectrum of translational research.
3. Exploring feasibility of in sharing research databases will enhance collaborations and increase student opportunities.

University of Nebraska Medical Center
New Degree

I. Descriptive Information

Name of Institution Proposing New Major or Degree
University of Nebraska Medical Center
Name of Proposed Major or Degree
Doctor of Nutrition and Dietetics (DND)
Degree to be Awarded to Graduates of the Major
Doctor of Nutrition and Dietetics, abbreviation of DrDN
Other Majors or Degrees Offered in this Field by Institution
UNMC Master of Medical Nutrition Program
CIP Code
51.3102 Clinical Nutrition/Nutritionist
Administrative Units for the Major or Degree
The degree will be administered and housed within by the College of Allied Health Professions (CAHP), University of Nebraska Medical Center (UNMC)
Proposed Delivery Site
UNMC Omaha campus; Online
Program will be Offered *[full program, not individual courses]*
_____ On-campus only X Distance only ___Both (on-campus and distance)
Date Approved by the Governing Board
Proposed Date the New Major or Degree will be Initiated
Upon Approval

II. Details

A. Purpose of the Proposed Major or Degree
The College of Allied Health Professions (CAHP) at the University of Nebraska Medical Center (UNMC) proposes to establish an advanced practice degree titled Doctor of Nutrition and Dietetics (DND). The degree will seek accreditation through the Accreditation Council for Education in Nutrition and Dietetics (ACEND).

The DND degree is designed to offer Registered Dietitian Nutritionists (RDNs) additional knowledge and competencies to fill leadership roles through an advanced practice course of study including advanced clinical nutrition and nutrition science, leadership, advocacy, education in higher learning institutions, and scholarly activity. ACEND has proposed the abbreviated degree name to be the DrDN to align with existing credentials recognized in the field. The DrDN credential has the potential to protect the public through assuring the competence of advanced practice nutrition professionals, improve the public's health, increase recognition of RDNs' expertise, attract and retain expert practitioners in advanced clinical and clinical leadership positions, and, and enhance graduates' career trajectories.,

B. Description of the Proposed Major or Degree
The CAHP proposes to develop an accredited post-professional doctorate degree program tailored to meet advanced practice needs of RDNs. The program plans to accept candidates who are credentialed RDNs with a master's degree and 3 years of post-credentialing experience or 5 years of post-credentialing experience without a master's degree. The program of study would require students to complete didactic courses, a scholarly project, and a residency for a total of 48 credit

hours. The DND curriculum will be comprised of 36 credit hours of didactic courses, 6 credit hours of scholarly activity, and 6 credit hours of residency (Table 1). Didactic course work will be offered in a fully online, asynchronous format (see Appendix A, Additional Details for Distance Programs). A summary of the full proposal is provided in Appendix B, Abstract of Proposal). Residency experiences may be completed in the student's home community under the guidance of DND faculty and an onsite mentor. The plan of study and courses for the proposed degree have been reviewed and approved by the CAHP Office of Academic Affairs and Curriculum Committee (see Appendix C, Letter of Support- Dr. Tammy Webster, Chair, CAHP Curriculum Committee).

The mission of the DND program is to prepare advanced nutrition and dietetics practitioners who will create a healthy future for individuals, communities and populations through expert-level knowledge and skills, critical inquiry proficiency, and innovation in scholarly activity.

The goals of the DND program are:

1. Graduates will demonstrate competencies in advanced clinical nutrition and nutrition science, leadership, advocacy, education in higher learning institutions and scholarly activity associated with the advanced practice of nutrition and dietetics.
2. Graduates will demonstrate the skills needed for innovative practice and advancement of the discipline through critical inquiry and scholarly activity.

Core Competencies: The proposed DND curriculum is based on the five ACEND-defined competency domains. Each domain contains specific competency statements and performance indicators and are detailed below:

1. Advanced Nutrition and Related Science: RDNs who complete a practice doctorate discover and integrate established and evolving science into practice.
2. Leadership: RDNs who complete a practice doctorate demonstrate emotional intelligence, creativity, and innovation to lead groups and programs.
3. Advocacy: RDNs who complete a practice doctorate advocate for change and address issues related to the wider social, cultural, and political environment.
4. Critical Inquiry, Research and Scholarship: RDNs who complete a practice doctorate lead and engage in research and scholarly initiatives and activities.
5: Education: RDNs who complete a practice doctorate lead education initiatives or programs.

Residency: An advanced practice residency is required and will have relevant, mentored, and in-depth specialized experiences that address program competencies. Students will meet with a faculty advisor at the time of acceptance to the program to identify residency opportunities aimed at addressing their area of practice/emphasis. The residency will provide new experiential learning opportunities for the student, as well as cumulative and progressive knowledge and skill attainment as the participant learns, integrates, and masters the competencies acquired through the residency.

Capstone Project: A capstone project will develop competencies associated with practice-based research and the ability to direct initiatives to design, develop, or evaluate systems, programs, or protocols. This applied project allows for both the assessment of formative knowledge and skills and the summative preparation for final dissemination as a publishable manuscript.

Plan of Study: The 48-credit hour curriculum is described in Table 1. Of the proposed curriculum, 50% of the credit hours (24/48) are from 800-level (graduate college) courses with the remaining courses being developed specifically for this program and to align with competencies that have been determined to be at the doctoral level by the Accreditation Council for Education in Nutrition and Dietetics. The 800-level courses offered through Graduate Studies that are included in the DND program address content not typically included in nutrition-related entry to practice master's degrees. Additionally, the DND plan of study is uniquely designed to meet a dedicated list of advanced competencies as compared to the professional masters. The combination of the 800-level Graduate Studies courses and the newly created DND courses allow the student to achieve the advanced competencies while minimizing course duplication in the system.

Table 1: DND Curriculum			
Course Number	Course Title & Description	Credit hours	Competency domain
NTSC 760	**Integrative Nutrition and Emerging Concepts in Advanced Nutrition Practice** This course will provide the student with opportunities for critical discussion and directed study of current literature and concepts in how integrative nutrition, genetics, artificial intelligence and other advancing technologies and concepts relate to the advanced practice of nutrition.	3	Advanced Nutrition and Related Science
NTSC 763	**Applied Advanced Nutrition Sciences** This course focuses on developing expertise in advanced clinical nutrition and dietetic sciences centered around the nutrition care process by integrating knowledge from established and evolving nutrition sciences, pharmacology, and social-behavioral sciences. The course aims to layer knowledge, skills and experience onto the existing RDN foundation to foster advanced practice in clinical nutrition and dietetics	3	Advanced Nutrition and Related Science
NTSC 766	**Advocacy and Global Health in the Advanced Practice of Nutrition** This course focuses on developing expertise in advanced nutrition and dietetic sciences centered on creating practitioners who advocate for change and address issues related to the wider social, cultural, and political environment.	3	Advocacy
HPTT 801	**Foundations of Health Professions Education** This course presents the basic concepts and processes of curriculum and instruction, including learning theories, curriculum planning, teaching modalities, and curriculum evaluation. Topics are selected to give students a basic understanding of pedagogy. Evaluation is based on weekly discussion posts and papers.	3	Education
HPTT 802	**Instructional Design for Health Professions Education** This course focuses on the fundamentals of instructional design for developing highly effective instruction. Topics include the science of how people learn, learning situations and characteristics, task and needs analysis, development of goals and objectives, principles of design process, assessment strategies (formative and summative), and concepts of design for a variety of environments and instructional modalities.	3	Education
HPTT 805	**Evaluation and Assessment of Teaching and Learning in Health Profession Education** This course explores the nature, objective, and basic procedures of assessment and program evaluation as applied to the various aspects of health professions education settings. The course will examine technical characteristics of various assessment methods, including both traditional and alternative methods. In addition, the course will analyze and discuss various topics in assessment such as authentic assessment, large-scale assessment, formative assessment, and assessment for program evaluation. Additional topics will include accreditation, program review, benchmarking, and evaluation of teaching in health professions programs.	3	Education
HDS 831	**Management in Health Care** This asynchronous course introduces allied health students and practitioners to the concepts of organizational theory and behavior as they apply to health care settings. The topics to be covered include personality types in the workplace, leadership and management, the principles of employee motivation, team performance and development, organizational culture, planning and implementing organizational change, human resource management practices, continuous quality improvement, financial management, and risk management**.**	3	Leadership
HDS 852	**Design of Quality Improvement Initiatives** Learners will explore and apply strategies and tools from the science of improvement to define, measure, and analyze quality problems in healthcare settings. Topics covered include methods to identity improvement needs and set improvement aims, strategies to evaluate the strength of evidence, selection of the data collection and analysis tools and strategies, selection of appropriate measures and metrics for evaluation and comparison, prioritization of improvement activities, assembly of improvement teams, and justification of improvement goals and efforts	3	Leadership
HPTT 823	**Leadership in Health Professions Education** This course is an in-depth exploration the knowledge, skills, attitudes, and competencies required for leadership in the context of complex health care and health	3	Leadership

	professions education organizations. Leadership theory will be used as a framework for enhancing organizational behavior focusing on both individual and team performance.		
HDS 815	**Communication and Culture in Healthcare** Communication and Culture in Healthcare is an upper-level course for allied health professions students and other interested students that facilitates an understanding of the role of culture and diversity in the healthcare arena and explores the ethical and legal implications of these situations. The course enables students to explore the value of diversity in our society through self-examination of their own beliefs, values and biases. Students will evaluate the dynamics involved when cultures interact and apply this to the healthcare setting. The course will include an in-depth assessment of the Culturally and Linguistically Appropriate Services [CLAS] standards and the cultural competency responsibilities of healthcare organizations.	3	Advocacy
BIOS 806	**Biostatistics** This course is designed to prepare the graduate student to understand and apply biostatistical methods needed in the design and analysis of biomedical and public health investigations. The major topics to be covered include types of data, descriptive statistics and plots, theoretical distributions, probability, estimation, hypothesis testing, and one-way analysis of variance. A brief introduction to correlation and univariate linear regression will also be given. The course is intended for graduate students and health professionals interested in the design and analysis of biomedical or public health studies.	3	Critical Inquiry, Research and Scholarship
NTSC 785	**Research Methods for Advanced Nutrition Practice** This course introduces students to the fundamental components of the research process including formulation of a valid research hypothesis and appropriate research methodology in a practice setting. Students will apply fundamental concepts of research methods, enabling them to critically evaluate published research, conduct a comprehensive literature review, and develop a hypothesis. Critical appraisal of nutrition publications will be reviewed for application and relevance through evidence-based medicine concepts and principles. The student will practice the skills necessary to complete a research and scientific writing experience, including selecting a topic relevant to advanced practice of nutrition.	3	Critical Inquiry, Research and Scholarship
NTSC 790	**Capstone** This course provides the student with experiences that will demonstrate competence in planning, implementing, and interpreting a relevant, focused clinical or professional topic related to high quality delivery of advanced practice nutrition sciences. The submission of the Capstone Project in the form of a publishable paper and oral presentation is a requirement for obtaining the DND degree.	6	Critical Inquiry, Research and Scholarship
NTSC 770	**Residency I** The Residency I course is the first of two required applied practicum series conducted under the guidance of a mentor. The residency course is designed to integrate the DND student into an educational experience to include all aspects of the practice of nutrition unique to the specific practice setting for the advanced practice Registered Dietitian Nutritionist. The course provides opportunities for the student to develop competent and proficient levels of mastery within the chosen area of emphasis.	3	TBD by student
NTSC 773	**Residency II** The Residency II course is the second of two required applied practicum series conducted under the guidance of a mentor. The residency course is designed to integrate the DND student into an educational experience to include all aspects of the practice of nutrition unique to the specific practice setting for the advanced practice Registered Dietitian Nutritionist. The course provides opportunities for the student to develop competent and proficient levels of mastery within the chosen area of emphasis.	3	TBD by student
Total program of study:		**48**	

Student cohorts will begin each fall semester. Full time students (defined as a minimum of 6-credit hours/semester) could complete the program in 2.5-3 years (Table 2a) and part time students (defined as enrolling in 3-6 credit hours/semester) could complete the program of study in

approximately 4-5 years (Table 2b). Specific didactic courses have been mapped for students interested in pursuing a specialty credential through the Commission on Dietetic Registration (board certificated specialist in gerontology, pediatrics, oncology, renal, obesity, or sports nutrition) or a professional certificate (i.e., Health Care Quality Improvement, or Health Care Teaching & Technology) following completion of the DND program.

Table 2a: Plan of Study – Proposed Schedule (FT)		
Year One		
Fall Semester	Spring Semester	Summer
NTSC 760	HPTT 802	HDS 815
NTSC 766	HDS 831	NTSC 785
HPTT 801		
Year Two		
Fall Semester	Spring Semester	Summer
HPTT 805	NTSC 763	HDS 852
BIOS 806	HPTT 823	
Year Three		
Fall Semester	Spring Semester	Summer Semester
NTSC 790	NTSC 790	
NTSC 770	NTSC 773	

Table 2b: Plan of Study – Proposed Schedule (PT)		
Year One		
Fall Semester	Spring Semester	Summer
NTSC 760	HPTT 802	HDS 815
Year Two		
Fall Semester	Spring Semester	Summer
NTSC 766	NTSC 763	HDS 852
Year Three		
Fall Semester	Spring Semester	Summer Semester
BIOS 806	HDS 831	NTSC 785
Year Four		
HPTT 801	NTSC 763	
NTSC 770	NTSC 790	
Year Five		
HPTT 805	HPTT 823	
NTSC 773		

C. Rationale for Developing a Doctor of Nutrition and Dietetics Degree

Advancements in health care: The depth and breadth of nutrition and dietetics practice are expanding along with the rest of health care. The advent of nutrition diagnosing, order writing, evidence-based practice, and outcomes research along with the increasingly recognized role of nutrition and diet in the management of complex medical and surgical conditions has created a demand for advanced practice dietitians who can assume these expanding roles and responsibilities (1). RDNs are involved in order writing for oral, enteral, and parenteral nutrition. Insulin dosing and monitoring is an expanded

responsibility of the dietetics professional involved in diabetes care. Additional issues in 21st century health care of relevance to nutrition and dietetics practice include the advent of "precision nutrition", defined as individualized, actionable dietary recommendations that guide what, when, why, and how to eat to optimize health and quality of life. Other aspects of advanced practice worthy of note are advanced nutrition leadership and education. There is clearly a need for advanced-level RDNs in management and leadership positions to forecast staffing needs for advanced level practitioners, create job opportunities, develop practice requirements, and address institutional standards and roles. Health systems for which educators are preparing graduates are under tremendous pressure to perform, and advanced level practitioners serving as educators are well-positioned to have a considerable influence on the professional development of nutrition students/graduates. The Accreditation Council for Education in Nutrition and Dietetics (ACEND) requires doctoral degree programs to have a program director with an academic or professional doctorate, therefore, this program will have a role in shaping the future nutrition and dietetics workforce.

The need within the profession: According to the Academy of Nutrition and Dietetics 2021 Compensation and Benefits survey, fifty-two percent of practicing RDNs hold master's degrees while only 4% hold doctoral degrees. Effective January 1, 2024, the minimum degree requirement for entry-level practice as an RDN will change from a bachelor's degree to a graduate degree (2). As practicing RDNs desire doctoral-level training to advance their skills and career options, they have very few suitable choices in the current educational marketplace beyond the traditional PhD. There is a clearly a need for a professional practice doctoral degree pathway to fill this gap.

Existing Structure of the CAHP: The CAHP currently houses six entry-level master's degree health profession education programs in the Department of Medical Sciences (diagnostic cytology, genetic counseling, medical nutrition, perfusion science, respiratory care, and physician assistant studies). The proposed DND degree will also be housed in the Department of Medical Sciences and will benefit from this organizational arrangement, affording the opportunity for shared faculty, staffing resources, and existing applicable coursework.

CAHP Role and Responsibility: The mission and obligation of the CAHP is to offer allied health profession education programs that both provide opportunities for students from Nebraska to pursue careers in the allied health professions and graduate the highest quality allied health workforce to meet the health care delivery needs of the citizens of Nebraska, the region, and the country. To fulfill this mission, the CAHP programs are, and must continue to be, at the "cutting edge" of both health professions education pedagogy and the evolution of the allied health professions. Based on the feasibility study (Appendix D) undertaken to prepare this proposal, the CAHP believes there is substantiated need to offer an advanced practice DND program that would adequately address anticipated demand within the nutrition and dietetics profession where master's level practitioners will aim to advance their practice through a dedicated professional doctoral degree.

D. Accreditation

This advanced practice Doctor of Nutrition and Dietetics degree will seek accreditation through ACEND. ACEND is an autonomous accrediting agency for education programs preparing students for careers in nutrition and dietetics. The mission of ACEND is to ensure the quality of nutrition and dietetics education to advance the practice of the profession.

E. Admissions

The DND program will conduct a holistic review of all applications, considering both academic and non-academic experiences. Enrollment in the program will be competitive. The admissions committee of the program, composed of program faculty and administration, will evaluate the qualifications of each applicant, and make the final selections for admission. Per accreditation requirements, the program will consider accepting those RDN credentialed candidates who have a master's degree and 3 years of post-credentialing experience or 5 years of post-credentialing experience without a master's degree. The DND program will have the support of the college's Office of Enrollment Management and Student Affairs for recruitment and admissions functions.

Upon matriculation, all students will be assigned an academic advisor who will evaluate academic progress during the program and work with the student to design residency and capstone

experiences. The academic advisor will also play a role in assisting the advisee in understanding program, departmental, college, and university policies and procedures. The academic advisors will be doctoral trained faculty member(s) from the entry to practice Master of Medical Nutrition Program, housed within the CAHP.

III. Review Criteria

A. Centrality to UNMC Role and Mission

UNMC and Nebraska Medicine's joint mission is "to lead the world in transforming lives to create a healthy future for all individuals and communities through premier educational programs, innovative research, and extraordinary patient care." The DND degree program supports the University's mission by producing transformative academic and practice leaders with expertise in evidence-based patient care, education, and leadership.

The development of the advanced practice DND degree is congruent with many of the goals and objectives set forth in the UNMC Strategic Goals and Strategies. Specifically, Goal 1, "Establish UNMC and its educational programs as the most learner-centered university in health professions and interprofessional education," and Goal 3, "Establish UNMC and our clinical partners as an academic health system providing the highest-quality care that is recognized for outstanding patient outcomes and a compassionate and patient-centered care experience." Additionally, the development of a DND degree addresses many of the objectives listed in the UNMC Strategic Plan, including the following:

1.1. Provide an innovative, competency-based and individualized curriculum.
1.4. Actively recruit those faculty needed to expand UNMC's current & future programs.
1.6. Prepare UNMC health profession learners to assume leadership roles.
3.1. Build relationships with our clinical partners to improve patient health outcomes.
3.2. Utilize interprofessional practice to provide optimal patient care environments.
3.5. Assure timely access to UNMC clinical care services.
3.10. Strengthen incentives to recruit and retain clinical faculty of diverse backgrounds.

B. Relationship of the DND degree to the University of Nebraska Strategic Framework

The University of Nebraska strategic framework consists of five key goals: Access, Affordability, and Attainment; Talent Development; Culture, Diversity, and Inclusion; Partnerships; and Efficiency and Effectiveness. This DND proposal is aligned with the University of Nebraska strategic framework in many ways:

Access, Affordability, and Attainment: The DND degree provides new educational opportunities to Nebraskans as it offers a fully remote learning platform. It is anticipated that most, if not all, of the DND students will be working health care professionals who are unable to enroll in a traditional on-campus degree program. There is no geographic barrier with a distance program, and students can access courses at any time and from nearly anywhere, either as a part-time or full-time student. The students will have the flexibility to complete the program at a self-determined speed.

Results of a feasibility study conducted by Encoura Eduventures Research (Appendix D) show that compared to competitor profiles, UNMC's proposed tuition and number of credit hours is on-par and competitive with public institutions' offerings (Table 3).

Table 3: Competitor Profiles for Total Tuition and Cost per Credit Hour

Institution	*Credits*	*Cost Per Credit (Resident/Non-Resident)*	*Estimated Total Tuition (Resident/Non-Resident)*
UNMC	**48**	**$625.00***	**$30,000**
Rutgers University	50	$829/1,244	$41,450/62,200
The Ohio State University	49	$752/1,663	$36,848/81,487
Auburn University	60	$557/1,731	$34,620/103,860
University of Kansas	48	$422/990	$20,256/47,520

Maryland University of Integrated Health	44	$1,039	$45,716

**Students pay the same cost per credit hour regardless of residency status.*

Talent Development: The DND degree is competency-based and responsive to the needs of prospective employers. The DND program provides an opportunity for health care professionals who have been practicing in the field to advance their knowledge, skills and opportunities to succeed as leaders in the field of nutrition and dietetics. The remote learning platform allows professionals to obtain a quality education without the need to interrupt employment commitments or travel to a campus classroom. The program responds to requests from students and employers to advance the skills of the existing workforce.

Culture, Diversity, and Inclusion: The DND program will foster an environment where the participants feel valued and welcomed. The program will continuously refine policies and procedures to support participants more fully as led by the CAHP Diversity, Equity, Inclusion and Belonging Collaborative Governance Committee. The program will continuously evaluate the admissions process to promote a holistic approach for accepting participants into the program.

Partnerships: The DND program will invest time in cultivating partnerships that will advance program outcomes. The program will foster a collaborative model to connect participants, educators, and practitioners, whenever appropriate, in designing and implementing instructional material.

Efficiency and Effectiveness: The DND program will be highly effective and efficient in meeting the growing needs for advanced practice professionals because of its emphasis on competency-based education. The program is designed to leverage the University of Nebraska system's existing resources to minimize program expenses. The program's effectiveness will be assessed through rigorous review procedures as required by accreditation. A long-term plan will be developed to sustain and expand the projected program assets, including the faculty and information technology infrastructure. The program will maintain a 5-year rolling balanced budget.

C. Consistency with the Comprehensive Statewide Plan for Post-Secondary Education

Providing a DND degree is consistent with the vision and major statewide goals outlined in the Nebraska Coordinating Commission for Postsecondary Education *Comprehensive Statewide Plan for Postsecondary Education Plan.* The proposed degree supports several of the statewide goals and outcomes outlined in the *Plan,* including:

Be responsive to the workforce development and ongoing training needs of employers and industries to sustain a knowledgeable, trained, and skilled workforce in both rural and urban areas of the state: The DND plan of study is intentionally designed to elevate the role of practicing RDNs by providing the course content and residency activities needed to advance the level of practice in the field. The DND degree not only aims to address the workforce expectations for advanced practice competencies, but also provides the training to any geographic region through the distance education platform.

Serve the state by preparing individuals for productive, fulfilling lives and by developing and nurturing the citizens and future leaders of Nebraska: The DND program emphasizes the development of advanced clinical practice, education, and leadership competencies to prepare citizens and future leaders with a cross-disciplinary skill set.

Assess evolving needs and priorities in a timely manner and will be prepared to change and adopt new methods and technologies to address the evolving needs and priorities of the students and people of Nebraska: The DND program will deliver a high-quality educational experience that demonstrates improvement in participant outcomes. For example, all learning and evaluation tools will be linked to program competencies, and participants, faculty and prospective employers will be regularly surveyed to ensure that the program's competencies are responsive to the changing health care landscape in Nebraska and nationally.

Be effective in meeting the needs of students and the state, will be efficient in its expenditure of the state's resources, and will be accountable for developing and sustaining exemplary teaching, learning, research, and public service: The program is designed to leverage the existing resources of the University of Nebraska system to minimize program expenses. Program outcomes will be assessed

regularly with the goal of continuous improvement.

D. Evidence of Need and Demand

National data designed to investigate interest of RDNs, employers, and educators in advanced practice supports the development of professional doctorate degree programs. A study published in 2006 in the *Journal of the American Dietetic Association* surveyed 440 RDNs and 61 employers. Mean interest in obtaining advanced practice education was high among RDNs (4/5 on a Likert scale) and 90% of RDN respondents stated that advanced practice RDNs were needed. Employers' mean interest score for hiring RDs with a professional doctorate was also high (4/5 on a Likert scale), with 50% stating the need to hire advanced practice RDNs (1). In a qualitative study that explored the career outcomes of 12 RDNs after obtaining the advanced practice credentials, participants reported that earning the credential enhanced their confidence, which led to improved depth and quality of the care they provided to their patients/clients (2). A survey of 17 graduates from the UNMC Master of Medical Nutrition program indicates strong interest from alumni in pursuing a doctorate degree, with 71% (12/17) indicating they would be "somewhat or very likely" to pursue this degree option. Letters of support from ACEND (Appendix E) and other entry to practice programs (Appendix F) and the Dean of the CAHP (Dr. Kyle Meyer, Appendix G) provide further supporting evidence for the value of a DND degree.

Data supporting an increased demand for Registered Dietitians from the *U.S. Department of Labor Bureau of Labor Statistics Projected Percentage Increases in Health Professions Demand 2020-2030* for Nebraska and the 6 contiguous states is presented in Table 4. This table shows a growing demand for Registered Dietitians in the Midwest. As one of the premier educational institutions in this area, UNMC is committed to meeting increased workforce demands by training highly skilled and competent health care workers.

Table 4: U.S. Department of Labor Bureau of Labor Statistics Projected Percentage Increases in Health Professions Demand 2020-2030

2020-2030 Projected Increase in Demand for Registered Dietitians*		Projected Average Annual Openings*
Nebraska	11.8%	50
Colorado	23.7%	110
Iowa	12.7%	60
Kansas	6.1%	50
Missouri	10.3%	120
South Dakota	15%	50
Wyoming	25%	10
United States	11.3%	450 (regional)/5,500 (US)

*2020-2030 Occupational Outlook Handbook. U.S. Bureau of Labor Statistics. Available at https://www.bls.gov/ooh/healthcare/home.htm

Results of the feasibility study conducted by Eduventures (Appendix D) concluded that the Nutrition Sciences doctoral market is a growing field with opportunity for differentiation regionally. **As there are currently no accredited Advanced Practice Doctorate programs offered, this report bases their conclusion on traditional degree options.** The entire report is included as Appendix D and provides the following conclusions:

- *Nutrition science and related markets are small yet show potential opportunity*. Nationally, there are 179 doctorate programs (none of which are ACEND accredited at this time) reporting to the nutrition science CIP code and 117 programs reporting to aligned CIP codes in 2021. Top providers averaged 6 conferrals in 2021, indicating the market is small. Despite these small numbers, student demand shows growth since 2012. Regional viability appears promising with steady conferral growth and limited competitors.

- *Top regional providers are new to the market*. Although national institutions consist of strong brands such as Cornell, UNC Chapel Hill, and Tufts University, the regional landscape showcases newer programs that have reported few conferrals. The two programs that are mature in the regional market (University of Nebraska-Lincoln and University of Kansas) have not seen steady growth since being launched in 2013. However, these programs may not represent a population interested in Advanced Practice Doctorate degrees.
- *Online is not mainstream*. There are no top conferring institutions nationally or regionally that are reporting their nutrition science program as online. This may be in part due to the residency requirements of some institutions, the novel nature of offering an online doctorate, or because the relatively small size of this market. Modality selection is not explicitly mentioned by institutions. While two of the profiled competitors offer their programs online, these were not top conferring institutions and were selected for analysis for other reasons.
- *Prospective adult students are most interested in a college experience that is affordable, asynchronous, and offers hands-on experience that is predominately online*. Seventy-six percent of adult prospects interested in nutrition science desired instruction mostly, if not all online. These prospects also expect to learn the most from internships/practicums (48%), followed by interactions with faculty (36%) and students (33%) within their field. An institution's strong alumni network (0%) and access to career services (3%) are less important to these students, however, they care most about affordable tuition (67%) and options to work at their own pace (42%).
- *Possible increased demand for the future*. The current labor market indicates average demand for nutrition science-aligned occupations. Within the next ten years, these jobs are projected to grow on average by 14% while all other occupations both nationally (10%) and regionally (9%) are projected to grow slightly less.

Results of the Eduventures feasibility study identified a regional competitive landscape. Within the region, only five nutrition science doctoral programs are being reported (none of which are accredited by ACEND), the majority of which have been in operation for less than five years and report fewer conferrals compared to top national providers. Specifically, the Nutrition and Health Science degree offered at UNL is a traditional, research-based PhD program and does not offer an on-line option. This suggests a possible opportunity to enter a potentially emerging market. No providers are reporting online conferrals (Table 5).

Table 5: Conferring Programs Regionally*

Institution	2021 Completions	2020-2021 Growth	2016-2021 CAGR	Program(s) Offered
University of Nebraska-Lincoln	5	0%	5%	PhD in Nutrition and Health Science
University of Kansas	4	0%	15%	Doctor in Clinical Nutrition
Kansas State University	3	0%	N/A	PhD in Food, Nutrition, Dietetics and Health
Colorado State University-Fort Collins	2	N/A	N/A	PhD in Nutrition and Food Science
University of Missouri-Columbia	2	400%	N/A	PhD in Nutrition and Exercise Physiology

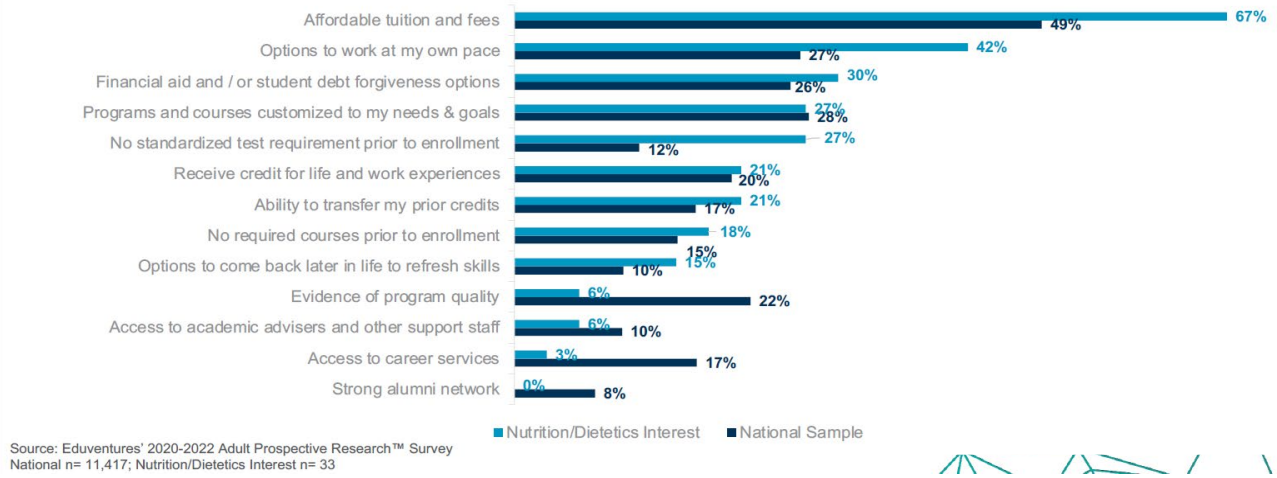
*No programs are currently accredited by ACEND
CAGR: Compound annual growth rate

Local data also supports the interest of RDNs working in clinical environments in obtaining advanced practice credentials. In the past 10 years, 7 clinical providers holding the RDN credential have enrolled in/completed a PhD through the Medical Sciences Interdepartmental Area (MSIA) within the graduate college at UNMC. While most of these clinicians were not interested in an academic career and instead were looking to advance their clinical practice, this path was the only advanced practice option available that met the needs of these professionals for flexibility and

affordability.

Results of the Eduventures feasibility study reveals the proposed degree is in line with key application drivers. Adult prospects are highly sensitive to the financial aspects of nutrition programs and desire to work at their own pace (Figure 1). This is in line with UNMC's projected tuition (that is slightly less than average profiled competitors) and plans to offer all coursework in an asynchronous format. Additionally, 55% of nutrition student prospects desire most, if not all of the courses be held online compared to 28% in other adults. This is in line with UNMC's goal to offer all coursework online.

Figure 1: Application Drivers in Adult Prospects in National and Nutrition/dietetics Interest Populations



E. Avoidance of Unnecessary Duplication

The DND program is not duplicative of other programs in the state of Nebraska as it focuses on advancing clinical practice through accreditation-defined competency-based education. Currently, the only option available for RDNs to pursue an advanced degree is through a traditional, research-focused PhD program. As an example, UNL offers a PhD in Nutrition, which is "for students who hold a strong interest in nutrition research with a STEM focus". Existing nutrition PhD programs such as those offered UNL focus on advancing the field through theoretical research and the construction of new knowledge or theories. In contrast, the proposed DND degree will focus on advancing the field of nutrition practice through applying existing knowledge to clinical practice and solving practical problems in the field. This professional doctorate is designed for working nutrition professionals who have practical experience in clinical nutrition and want to increase their knowledge, advance their careers, and translate their clinical experience into positions of credibility, leadership, and influence in a clinical setting. As a Master's degree is required for entry-level practice in the field of clinical nutrition, a clinically-focused doctorate degree allows these working professionals to expand their clinical expertise through an accredited course of study and apply learnings directly to practice, improving clinical outcomes in nutritionally high-risk patient populations. Moreover, the DND program will offer a dedicated, competency-focused plan of study that will be recognized by programmatic accreditation making it the first of its kind in the state of Nebraska and one of the first nationally recognized by ACEND.

The structure of the proposed DND is also unique through its distance learning format. The CAHP has for many years offered online degree advancement programs in clinical perfusion, medical laboratory science, physician assistant studies, and radiography, affording current practitioners the opportunity to maintain employment in their communities while acquiring advanced knowledge. Given the CAHP's experience and success in offering degree advancement programs and considering that no online advanced practice nutrition degree programs are currently offered in Nebraska, this proposal fills a unique gap.

F. Adequacy of Resources

Faculty and Staff Resources: The DND degree program will be supported by a Program Director, existing CAHP faculty, the Department of Medical Sciences, and administrative support personnel. The funding model for the program includes a dedicated Program Director currently housed in the entry to practice Medical Nutrition program. This entry to practice program has a total of 4 full-time faculty members (1 tenured Professor and 3 Assistant Professors) and 6 PhD-trained adjunct faculty members. In addition, dedicated administrative staff will help to support the program through the CAHP. The CV of the Director of the Medical Nutrition Education Program is included as Appendix H.

The CAHP organizes administrative personnel in one of four offices designed to provide comprehensive services to all students and faculty within the CAHP. These offices include academic affairs, business affairs, enrollment management and student affairs, and research affairs. The CAHP's Office of Enrollment Management & Student Affairs staff will manage the recruitment and admissions processes. The CAHP's Office of Academic Affairs will support the program in accreditation, accommodations, remediation, curriculum mapping, and assessment best practices. There is instructional technology support housed within the college as well as from the UNMC IT department. In addition, the Director of E-Learning & Instructional Designer at UNMC holds a courtesy faculty appointment in the CAHP.

Instructional Equipment, Informational & Library Resources: Given the distance delivery of the program, the resources of the Leon S. McGoogan Health Sciences Library will be vitally important. As one of the nation's major health science libraries, it serves the information needs of UNMC students, faculty, and staff, as well as licensed Nebraska health professionals and residents of the state. The library provides timely access to high quality collections of print and electronic materials, including over 42,000 print volumes and an extensive collection of anatomical models. The library website serves as the gateway to electronic information resources. Online journals, books, bibliographic and other databases are available, and many resources may be accessed using mobile devices. Online resources include nearly 39,000 journal titles and nearly 69,000 full-text books. Librarians are available to assist with the use of the library and its collections, including assistance developing search strategies for the online databases, completing online searches, authorship level of participation in preparation of systematic reviews on request, retrieving factual information and verifying citations, and storing online references using bibliographic management software. In addition, the library offers one-on-one or group instruction in locating and managing information. Requests for these services may be submitted in person, by telephone or email, or sent via text or chat. The E-Gallery houses an ever-expanding library of e-Learning modules available to students anytime and anywhere.

In recent years, the CAHP has made significant investments in technology to support the growing demand for distance education, to facilitate curriculum revision, including "flipped classroom" and hybrid delivery models, and to provide students opportunities for hands-on learning through simulation training. Audio visual (AV) and information technology(IT) components totaling more than $875,000 have been purchased and installed in Bennett Hall, Wittson Hall, and the Michael F. Sorrell Center for Health Science Education. The CAHP has a Director of Distance Education who is available to train and support the faculty with distance learning pedagogy, and CAHP offers online courses exploring learning theory, best practices in teaching, the design and application of educational research, and investigation of the uses of instructional technology in health professions education and distance learning. There are many other resources available to faculty including the UNMC's Office of Academic Affairs' Interactive e-Learning Program and the Go2Knowledge online training platform. The Interactive e-Learning Program has a mission to inspire, guide and support faculty, staff, and student partners in the creation of engaging digital experiences for diverse audiences. Through the program, faculty have created hundreds of e-Learning modules which serve as open-access resources for teaching and learning. The Go2Knowledge online training platform is designed to provide on-demand instruction for the on-the-go learner. The platform offers a wide variety of training options from 6 different categories, including technology & online learning, student success, teaching & learning, student populations, institutional effectiveness, and campus

safety & security.

Physical Resources: The DND degree will be administered on the UNMC campus in Omaha and will include the Director's office and faculty office space. These offices and conference rooms are conducive to work associated with planning, scholarly activities, and student counseling. The CAHP also has research laboratories, classrooms, and graduate student offices in the Center for Healthy Living, as well as laboratory space in Wittson Hall. These areas are equipped with all necessary technology for providing synchronous and asynchronous distance education. Program activities will be administered online or virtually with limited need for physical space. If the need arises for on-campus student or faculty consultation, various conference rooms and/or individual faculty/committee members' offices will be utilized.

Budget Projections: Proposed enrollment is based on accreditation standards and projected faculty resources. The program proposes to enroll 8 students the first year with an incremental annual increase of an addition 2 to 4 students per year until maximum enrollment of 20 students per year (per accreditation requirements) is achieved, projected to be in year 5. Tuition revenue generated by the DND degree program will be sufficient to cover projected expenses at inception due to existing resources. The CAHP proposes charging $625 per credit hour (assuming first cohort enrollment in FY 2024) for the program which is competitive with comparable programs outside of the University of Nebraska system. Revenue projections are presented in Table 6. Table 7 presents detailed tuition and fees calculations. Table 8 presents the projected expenses. The 10% protected time faculty for program start-up may seem low, but will be feasible through the maximization of existing resources in the MNE program and CAHP. Notably, several courses will be taught by adjunct faculty with appropriate credentials for a doctoral level degree, paid via stipend, leveraging program faculty resources. The program faculty have extensive experience with competency-based education and are well versed in rubrics and logistics for tracking competency attainment. The plan of study is intentionally designed to leverage existing resources allowing faculty to focus on accreditation, recruitment, and program start-up for the first two years. Faculty support for the program is projected to increase as student enrollment increases.

Table 6. Revenue Projections

	2025 Year 1	2026 Year 2	2027 Year 3	2028 Year 4	2029 Year 5	**Total**
Existing Funds [1]						$0
Required New Public Funds [2]	0	$0	0	0	0	$0
1. State Funds						$0
2. Local Tax Funds (community colleges)						$0
Tuition and Fees [3]	$45,270	$104,262	$209,501	$352,039	$451,515	$1,162,587
Other Funding [4]						$0
1						$0
2						$0
3						$0
Total Revenue	$45,270	$104,262	$209,501	$352,039	$451,515	$1,162,587

[1] No existing funds are needed. Tuition generation will be sufficient to cover program expenses

[2] No new public funds are required.

[3] Tuition generation is based on $625 per credit hour inflated at 2.5% per year. Fees are limited to the NU Online per credit hour fee of $35 and tuition is net of a UNMC 5% tax on online programs.

[4] N/A

Table 7: Tuition and Fees Calculation

	Academic Year				
	2025	2026	2027	2028	2029
Yr 1 students matriculating annually taking 9 CH	8	10	12	16	20
Yr 2 students taking 9 CH		8	10	12	16
Yr 3 students taking 15 CH			8	10	12
Yr 4 students taking 15				8	10
Total credit hours	72	162	318	522	654
Tuition generated ($625/CH inflated at 2.5%/yr)	$ 45,000	$ 103,781	$ 208,812	$ 351,336	$ 451,184
NU Online course fee @ $35/CH	$ 2,520	$ 5,670	$ 11,130	$ 18,270	$ 22,890
UNMC online program fee 5%	$ (2,250)	$ (5,189)	$ (10,441)	$ (17,567)	$ (22,559)
Total Revenue	$ 45,270	$ 104,262	$ 209,501	$ 352,039	$ 451,515

Projecting 8 part-time students in AY 25, increasing to 20 during 5 year ramp-up period. Projecting 4 years for part-time students to complete the program.

Table 8: Projected Expenses

	2025 Year 1		2026 Year 2		2027 Year 3		2028 Year 4		2029 Year 5		Total	
Personnel	**FTE**	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	**FTE**	**Cost**
Faculty [1]	0.1	$9,698	0.1	$9,988	0.60	$70,219	0.76	$103,189	0.76	$106,285	0.76	$299,379
Professional [2]											0	$0
Graduate assistants											0	$0
Support staff	0		0		0.50	$36,135	0.50	$37,219	0.5	$38,336	0.5	$111,690
Subtotal	0.1	$9,698	0.1	$9,988	1.1	$106,354	1.26	$140,408	1.26	$144,621	1.26	$411,069
Operating												
General Operating [3]		$1,940		$2,497		$21,271		$28,082		$36,155		$89,944
Tuition due to other progams[5]		$18,900		$43,588		$87,701		$147,561		$189,497		$487,247
Equipment[6]		$0		$0		$0		$0		$0		$0
												$0
Subtotal		$20,840		$46,085		$108,972		$175,643		$225,652		$577,191
Total Expenses	0.1	$30,537	0.1	$56,074	1.1	$215,325	1.26	$316,051	1.26	$370,273	1.26	$988,260

[1] Includes a Program Director who will receive an administrative stipend, an assistant professor will be hired in year three who will move to .75 FTE in year 4. Salaries are inflated at 3% per year. 50% of the program curriculum exists in other CAHP online programs and will be taught by faculty in those programs. See note # 5.

[2.] NA

[3.] General operating expenses include basic office supplies, faculty professional development, travel, etc. and are estimated at 20% of salaries and benefits. Expenses are inflated at 3% per year.

[4] Program is delivered online, no new equipment needs are anticipated.

[5.] 56% of program curriculum exists in other UNMC online programs. 75% of the Tuition generated by students enrolled in those courses will be transferred to those programs. The tuition transfer will be sufficient to pay faculty teaching stipends in those programs.

IV. Conclusion

The DND program is unique in its focus on the development of advanced clinical practice, leadership, advocacy, education, and scholarly activity/research skills as a component of advanced-level dietetics practice. Given that the regional market contains limited competitors, none of which offer online instruction, UNMC is strategically positioned to offer a program that is new and less likely to be rivaled within the market. This accredited advanced practice doctorate undoubtedly will offer graduates a cutting-edge advantage when competing for advanced-level positions in the field of nutrition and dietetics and is consistent with emerging trends and priorities within the profession. CAHP believes there is a tremendous opportunity for UNMC to be a leader within the nutrition and dietetics profession by offering an advanced practice doctorate degree program.

References:

1. Skipper A, Lewis NM. Clinical registered dietitians, employers, and educators are interested in advanced practice education and professional doctorate degrees in clinical nutrition. J Am Diet Assoc. 2006 Dec;106(12):2062-6. doi: 10.1016/j.jada.2006.09.011. PMID: 17126639.

2. Dosedel E. Compensation and Benefits Survey 2021. J Academy of Nutr Diet 2021. DOI: 10.1016/j.jand2021.08.113.

3. (Authors redacted for blinding). The Advanced Practitioner Certification in Clinical Nutrition Provides Opportunities for Validation and Career Advancement for Registered Dietitians. *Topics In Clinical Nutrition.* In press.

Appendix A: Additional Details for Distance Programs Only

A. About the Program

1. Program Description

Will the program be fully online (100% of courses and all program requirements consistently and routinely offered online)? Will the program be primarily online and developed for online learners (i.e. a minimum of 80% of the courses and program requirements consistently and routinely offered online)?

The Doctor of Nutrition and Dietetics (DND) program will be offered 100% online and developed for online learners.

How will this program being offered online impact a face-to-face program, if also offered?

No face-to-face program is being offered.

2. Licensure and Accreditation

Will the program lead to licensure? If so, provide a list of states and if the program will meet licensure requirements in each of the 50 states.

The program will not lead to licensure.

Will the program seek or be accredited by a specialized accrediting agency?

The program will seek accreditation from the Accreditation Council for Education in Nutrition and Dietetics (ACEND).

3. Marketability and Duplication

Describe the marketability of the program, including identification of competitors and a detailed description about differentiation if any related programs are offered online by other NU campuses. Explain how this program is different from similar online programs at UNO, UNK, UNMC.

The UNMC DND will be highly marketable due to its unique status as one of the first accredited Advance Practice Doctorate degrees in the field of nutrition and dietetics in the United States. The DND program will be distinctly different from these programs as the focus will not be primarily on clinical nutrition, but instead will encompass 5 domains of nutrition science competencies important for the advancement of leadership, scholarly activity, and advocacy within the profession (Advanced Nutrition Science; Leadership; Advocacy; Education; Critical Inquiry, Research and Scholarship; and Education). This allows UNMC to attract doctoral-level candidates who are interested in pursuing degrees that include training on leadership, educational pedagogy, and advocacy skills.

There are no similar online programs offered at UNO, UNK, or UNMC. UNL offers a PhD degree in Nutrition and Human Sciences, however this is a traditional, research-focused degree that must be completed in person. There is no on-line option making it less attractive to individuals who are employed or unable to relocate.

B. Curriculum:

1. Faculty and Instruction

Provide a list of the courses and their current state of development for online delivery. Are there unique aspects of a course that students will need to be aware of (e.g. requiring face-to-face testing, internship hours, on-campus residency, etc.)

A list of courses and their current state of development for online delivery is provided in Table 2. There is no required face-to-face testing or on-campus internship or residency. The program does require a residency which will be conducted in the students' community of residence.

Table 1: Course List: All courses in the program including existing and new courses						
Course Title & Number	**Faculty member developing**	**Required/Elective**	**Has been developed in online format (yes/no)**	**Has been offered in online format (Semester/Year)**	**Semester/Year course to be developed in online format (if applicable)**	**Semester/Year course is to be first taught online**
NTSC 760 Integrative Nutrition and Emerging Concepts in Advanced Nutrition Practice	New course, approved May 2023	Required	Yes	No	N/A	Fall 2024
NTSC 763 Applied Advanced Nutrition Sciences	New course, approved May 2023	Required	Yes	No	N/A	Spring 2025
NTSC 766 Advocacy and Global Health in the Advanced Practice of Nutrition	New course, approved May 2023	Required	Yes	No	N/A	Fall 2024
HPTT 801 Foundations of Health Professions Education	Existing course	Required	Yes	Yes	N/A	N/A
HPTT 802 Instructional Design for Health Professions Education	Existing course	Required	Yes	Yes	N/A	N/A
HPTT 805 Evaluation and Assessment of Teaching and Learning in Health Profession Education	Existing course	Required	Yes	Yes	N/A	N/A
HDS 831 Management in Health Care	Existing course	Required	Yes	Yes	N/A	N/A
HDS 852 Design of Quality Improvement Initiatives	Existing course	Required	Yes	Yes	N/A	N/A
HPTT 823 Leadership in Health Professions Education	Existing course	Required	Yes	Yes	N/A	N/A
HDS 815 Communication and Culture in Healthcare	Existing course	Required	Yes	Yes	N/A	N/A
BIOS 806 Biostatistics	Existing course	Required	Yes	Yes	N/A	N/A
NTSC 785	New	Required	Yes	No	N/A	Summer 2025

Research Methods for Advanced Nutrition Practice	course, approved May 2023					
NTSC 790 Capstone	New course, approved May 2023	Required	Yes	No	N/A	N/A
NTSC 770 Residency I	New course, approved May 2023	Required	Yes	No	N/A	Spring 2025
NTSC 773 Residency II	New course, approved May 2023	Required	Yes	No	N/A	Fall 2025

Describe the instructional capacity and teaching plan, include who will be teaching the courses, course size and enrollment cap, additional section triggers, and use of teaching assistants.

Per ACEND accreditation standards, a program must specify its maximum enrollment. This program is requesting accreditation to enroll 20 students annually. Therefore, course size and enrollment cap will be set at 20 with no additional section triggers. Teaching assistants will not be used. The course sequence is flexible to allow to program to operate efficiently within existing resources.

The DND degree program will be supported by a Program Director, existing College of Allied Health Professions (CAHP) faculty, the Department of Medical Sciences, and administrative support personnel within the College of Allied Health Professions. The funding model for the program includes a dedicated 0.1 FTE Program Director housed in the Medical Nutrition Education area. This area has a total of 4 full-time faculty members (1 tenured Professor and 3 Assistant Professors) and 6 PhD-trained adjunct faculty members. In addition, administrative staff will be dedicated to supporting the program through the CAHP.

Other required courses (HPTT, HDS, BIOS) are existing on-line courses currently available through UNMC.

If courses are open to on-campus students, is there a strategy for priority registration for true distance students?

Courses in this program will not be open to on-campus students. Any student wishing to take the course must do so online.

If any required courses are offered by other colleges/departments, describe the agreement for frequency of course offerings and tuition sharing?

Biostatistics (BIOS 806) is offered through the College of Public Health (COPH) and is offered in an on-line format in the Fall, Spring and Summer Semesters. Tuition sharing between CAHP and COPH has been previously arranged as CAHP students often take COPH courses as part of required curriculum.

All HPTT and HDS courses are offered through graduate studies although administered through CAHP. A tuition sharing model for these programs has been established for several years.

In what format do you want to deliver the courses (i.e. traditional semester or 8-week courses)?

The program will be delivered using a traditional semester format.

2. Program Requirements

List and describe all program requirements beyond traditional coursework. If there are residential

requirements, will there be alternatives or accommodations offered? Will experiential learning be required? Describe any external partnerships?

The DND program has two requirements beyond traditional coursework: a Capstone project and a Residency requirement.

Residency (6 credit hours): An advanced practice residency is required and will have relevant, mentored, and in-depth specialized experiences that address program-identified competencies co-created and individualized with the student. Students will meet with an advisor at the time of acceptance to the program to identify residency opportunities aimed at addressing their area of practice/emphasis. The residency will provide new experiential learning opportunities for the student, as well as cumulative and progressive knowledge and skill attainment as the participant learns, integrates, and masters the competencies acquired through the residency. The residency will be conducted at the students' home community and will be coordinated with the help of the program director and student's advisor.

Capstone (6 credit hours): The capstone project will develop competencies associated with practice-based research and the ability to direct initiatives to design, develop, or evaluate systems, programs, or protocols. This applied project allows for both the assessment of formative knowledge and skills and the summative preparation for final dissemination as a publishable manuscript. The capstone project will be conducted on-line and will be coordinated with the help of the program director and student's advisor.

3. Completion Plan

Include a semester-by-semester plan for completion. What courses are offered when? How long will it take to complete the program? Will there be intro courses available each term?

Example semester-by-semester completion plans are presented in Table 2a (full time students) and 2b (part time students). The program could typically be completed in 3 years for full-time students and 5 years for part-time students. Introductory courses (HPTT 801) will be offered in the fall semester.

Table 2a: Plan of Study – Proposed Schedule (FT)		
Year One		
Fall Semester	Spring Semester	Summer
NTSC 760	HPTT 802	HDS 815
NTSC 766	HDS 831	NTSC 785
HPTT 801		
Year Two		
Fall Semester	Spring Semester	Summer
HPTT 805	NTSC 763	HDS 852
BIOS 806	HPTT 823	
Year Three		
Fall Semester	Spring Semester	Summer Semester
NTSC 790	NTSC 790	
NTSC 770	NTSC 773	

Table 2b: Plan of Study – Proposed Schedule (PT)		
Year One		
Fall Semester	Spring Semester	Summer
NTSC 760	HPTT 802	HDS 815
Year Two		

Fall Semester	Spring Semester	Summer
NTSC 766	NTSC 763	HDS 852
Year Three		
Fall Semester	Spring Semester	Summer Semester
BIOS 806	HDS 831	NTSC 785
Year Four		
HPTT 801	NTSC 763	
NTSC 770	NTSC 790	
Year Five		
HPTT 805	HPTT 823	
NTSC 773		

4. Accessibility

Describe how the program's curriculum will support true distance learners. How will examinations be handled? What, if any, will time zones impact the course delivery? How will the availability of pre-requisite courses online be handled?

UNMC developed extensive resources for distance education during the COVID-19 pandemic, including Remote Teaching and Learning websites and faculty development opportunities. The CAHP has a Director of Distance Education who is available to train and support the faculty with distance learning pedagogy, and CAHP offers online courses exploring learning theory, best practices in teaching, the design and application of educational research, and investigation of the uses of instructional technology in health professions education and distance learning. Faculty and instructors have a variety of training opportunities related to the use of distance education pedagogy and recommended practices.

The Medical Nutrition Education area currently offers an undergraduate level course (MNE 477) which is offered completely online and has enrolled students from a wide national and international distribution. The experiences from this course, in addition to support from the CAHP Director of Distance Education, ensure the success of on-line delivery for this program. Examinations will be handled online through Examsoft, and due date and times will be adjusted based on the time zone of the student.

As this is an advanced practice degree, admission criteria do not include pre-requisite courses.

How will ADA compliance for all class materials be handled?

It is the policy of the University of Nebraska Medical Center to provide flexible and individualized accommodation to students with documented disabilities. To receive reasonable accommodations, students must complete a Request for Services application and provide documentation to the Services for Students with Disabilities office. Information is available at the Counseling and Student Development Center website at www.unmc.edu/stucouns/disabilities.htm. On-line meetings are by appointment. Adequate time for processing, up to four weeks, is recommended.

C. Recruitment and Admissions

Describe the application cycle and admissions criteria. Will a cohort model be used? Is concurrent enrollment required?

The DND will use a cohort model with each new cohort beginning in the fall. After each new cohort of students is enrolled, the program will open applications for the next cohort. Upon the application closing date, the DND program will conduct a holistic review of all applications, considering both academic and non-academic experiences. Enrollment in the program will be competitive. The admissions committee of the program, composed of program faculty and administration, will evaluate

the qualifications of each applicant, and make the final selections for admission. Per accreditation requirements, the program will consider accepting those candidates who have a master's degree and 3 years of post-credentialing experience or 5 years of post-credentialing experience without a master's degree. The DND program will have the support of the college's Office of Enrollment Management and Student Affairs for recruitment and admissions functions. Concurrent enrollment will not be required.

Describe the transfer policy, including caps on credit and acceptance of non-traditional credit.

The program will not accept transfer credit or accept non-traditional credit.

Describe the plan for recruitment and outreach, addressing true distance learners and adult learners specifically.

Information about the DND program will be available on the CAHP website. Per accreditation requirements, Information about the program must be readily available to prospective students and the public via a website and must include at least the following:

a. Accreditation status, including the full name, address, phone number and website of ACEND on the program's website homepage.
b. Description of the program, including program's mission, goals, and objectives.
c. A statement that program outcomes data are available upon request.
d. Estimated cost to students, including tuition and fees, necessary books and supplies, transportation, typical charges for room and board or housing, and any other program-specific costs.
e. Application and admission requirements.
f. Academic and program calendar or schedule.
g. Graduation and program completion requirements.
h. Availability of financial aid and loan deferments (federal or private), scholarships, stipends, and other monetary support, if applicable.
i. Guidance about distance education components, such as technology requirements, if applicable.
j. If students are required to locate their own residency sites and/or mentors, requirements for this must be described, including the program's role and responsibility to assist students to ensure timely completion of the program.

The program director will conduct multiple outreach activities, including presentations at local, regional, and national meetings, social media and listserv postings, and direct mailing to UNMC alumni. Information regarding the program will also be available on ACEND's website at https://www.eatrightpro.org/acend/accredited-programs/program-directory. The program outreach will only target adult learners to meet admission criteria for the program.

Describe your enrollment goals. What is your existing capacity? What is your strategy for growth?

The DND program is requesting accreditation for an annual enrollment of 20 students. Programs cannot increase their enrollment without applying to ACEND for permission, and re-accreditation occurs every 7 years. Therefore, we anticipate enrollment to increase incrementally every year for 7 years until the maximum number of students per cohort is enrolled each year. Given that that the program will have a dedicated Program Director and utilize existing resources such as courses and infrastructure for admissions, we are confident the existing capacity can support the early years of this new degree program. Growth will be carefully monitored over time and adjustments in resources will be made based on program outcomes, the CAHP workload policy, and revenue.

Provide projections of new students over the next five years. Indicate part-time or full-time attendance.

Projections of new students over the next five years is provided in Table 3.

Table 3: Projections of New Students Enrolled Fall 2024-Fall 2028					
	2024	2025	2026	2027	2028
Projected New Yearly Enrollment (FT/PT)	0/8	0/10	0/12	0/16	0/20
Total students enrolled (FT/PT):	**0/8 Total=8**	**0/8 Total=18**	**0/30 Total=30**	**0/46 Total =46**	**0/58 Total=58**

**Assumes PT students remain in the program for 4 years*

Describe the capacity for new admits each year and total program enrollments. How will growth be managed and accommodated?

Total program enrollments are shown in Table 3. Growth will be carefully monitored over time by the program director and CAHP Associate Dean of Business and Finance. Adjustments in resources will be made based on program outcomes, the CAHP workload policy, and revenue.

D. Student Support Services

1. Learner Orientation

Describe the plan for orientation, including how students will be informed about department/college and campus resources for online students. What additional support will the unit provide for student success? How will the program ensure academic honesty?

The College of Allied Health Professions currently has two very successful fully online interprofessional programs. There is an established and effective template for successfully onboarding online students. Many times, an Orientation Canvas course is developed specifically for the online cohorts. The College has a Director of Distance Education who supports all online programs within the college. All the same student success services that are available to on campus students would be offered to the remote students (ADA, Counseling, Library Resources, for example). Ensuring academic honesty is thread throughout the development of the course and the learning activities. Measures such as login password protected access and lockdown assessments are just two strategies ensure academic honesty. All students must abide by the Student Code of Conduct. Students will be provided with access to the program, college, and university policies and procedures with expectations for conduct.

2. Advising

Describe the plan for advising, including who will be advising and the advisor to student ratio. How will students connect with advisors? Who will help monitor progress through the program? And how will they accomplish this? How will students receive career guidance? How will graduation outcomes be tracked?

Upon matriculation, all students will be assigned an academic advisor, who will evaluate academic progress during the program and will work with the student to design residency and capstone experiences. The academic advisor will also play a role in assisting the advisee in understanding departmental, college, and university policies and procedures. The student can contact the advisor at via phone or email, and routine meetings (a minimum of once a semester) will be scheduled via Zoom/Teams. The academic advisors will be doctoral trained faculty member(s) in CAHP Medical Nutrition Education. Students will receive career guidance from program faculty and external mentors, such as mentors involved in residency experiences. Graduate outcomes, such as time to complete the program, post-program scholarly activity, and post-program career advancement will be tracked as part of the accreditation-required program evaluation plan.

3. Program Coordination

Who will be the program coordinator? What is the role of the coordinator (i.e. communication contact for students, coaching role, lead generation/recruitment, assignment of faculty to classes, etc.)

Per accreditation requirements, the program must have one designated program director who has

primary responsibility for the program and communication with ACEND. The program director for this degree will be named after approval by the Board of Regents, prior to applying for program accreditation from ACEND. The program director must have the authority, responsibility and sufficient time allocated to manage the program, and provide effective leadership for the program, the program faculty, and the students. The program director may have other responsibilities that do not compromise the ability to manage the program. Responsibilities and time allocation for program management are reflected in a formal position description for the program director and approved by an administrator.

The program director must:

1. Have an earned doctoral degree and have a minimum of three years full time professional experience post credentialing or equivalent.
2. Be credentialed as a registered dietitian nutritionist by the Commission on Dietetic Registration.
3. Be a full-time employee of the sponsoring institution.
4. Not direct another ACEND-accredited nutrition and dietetics education program.

The program director responsibilities must include, but are not limited to:

1. Provision or delegation of responsibilities to assure year-round coverage of director responsibilities in the absence of the director or in cases where the director's full-time appointment does not cover all 12 months. In programs where the program director assigns some responsibilities to other individuals, the director must ensure that all program director responsibilities are accomplished throughout the year.
2. Development of policies and procedures for effectively managing all components of the program and to ensure fair, equitable and considerate treatment of prospective and enrolled students (such as program admission, retention, and completion policies).
3. Student recruitment, advisement, evaluation, and counseling.
4. Maintenance of program accreditation including:
    a. Timely submission of fees, reports, and requests for major program changes.
    b. Maintenance of the program’s student records, including requirements for doctoral degree completion.
    c. Maintenance of complaints about the program received from students or others, including disposition of the complaint.
    d. On-going review of program's curriculum to meet the accreditation standards.
    e. Communication and coordination with program faculty, mentors and others involved with the program and its students.
    f. Facilitation of processes for continuous program evaluation.

E. Evaluation/Assessment

How will you review and evaluate the program’s success?

Per accreditation requirements, a program evaluation plan must be documented, reviewed annually, updated as needed with changes noted and must include the following components:

a. The program mission. The program mission must be specific to the program, distinguishes it from other programs in the sponsoring organization(s) and be compatible with the mission statement or philosophy of the sponsoring organization(s).
b. The program goals. The program must have at least two goals focused on program outcomes for graduates that are consistent with the program's mission.
c. The program objectives. The program objectives must measure the full intent of the mission and goals and are used to evaluate achievement of each program goal. The program must align the objectives with their program goals and demonstrate that the program is operating in the interest of students and the public. The program must set reasonable target measures when the targets are not specified. Required objectives must be evaluated annually using an average of data from the previous three years.
d. Qualitative and/or quantitative data needed to determine whether goals and objectives have been achieved.
e. Groups from which data will be obtained; both internal and external stakeholders must be represented (such as graduates, administrators, faculty, mentors, employers, practitioners,

nutrition and dietetics education program directors, faculty from other disciplines and advisory committees).

f. Evaluation methods that will be used to collect the data.
g. Individuals responsible for ensuring that data are collected.
h. Timeline for collecting the necessary data.

The program must evaluate the achievement of its goals and objectives based on its program evaluation plan and provide evidence that:

i. Program outcomes data are collected according to the program evaluation plan, summarized, and analyzed by comparing actual achievements with objectives.
j. Data analysis is used to evaluate the extent to which goals and objectives are being achieved.
k. The targets set for ACEND-required objectives are met.
l. Program changes have been made to improve outcomes for unmet objective(s).
m. Programmatic planning and outcomes evaluation are integrated with institutional planning and assessment, as appropriate.

Results of the program evaluation process must be used to identify strengths and areas for improvement relative to components of the program (such as policies, procedures, curriculum, teaching methods, faculty, mentors, resources). Short- and long-term strategies must be developed, and actions must be taken to maintain program strengths and address areas for improvement identified through the evaluation process.

F. Resources

What help, if any, do you need to get the program online? Consider development (instructional design, faculty load, GA support), instruction, administration/staffing/student support, marketing, assessment/evaluation. A budget worksheet is provided.

N/A

Appendix B: Abstract of Proposal

Purpose of the Proposed Degree
The College of Allied Health Professions (CAHP) at the University of Nebraska Medical Center (UNMC) proposes to establish an advanced practice degree titled as Doctor of Nutrition and Dietetics (DND). The degree will be accredited through the Accreditation Council for Education in Nutrition and Dietetics (ACEND).

The DND degree is designed to offer credentialed Registered Dietitian Nutritionists (RDNs) additional knowledge and competencies to fill leadership roles in influential and visible positions through an advanced practice course of study. The DND degree has the potential to protect the public through assuring the competence of advanced practice nutrition professionals, improve the public's health, increase recognition of the expertise of RDNs, attract and retain expert practitioners, enhance the graduates' career trajectory, and contribute to the advancement of the discipline through scholarly activity.

Evidence of Needs and Demand
The depth and breadth of nutrition and dietetics practice are expanding along with the rest of health care and many practicing RDNs are seeking to advance their education and credentials. According to the Academy of Nutrition and Dietetics 2021 Compensation and Benefits survey, 52% of practicing RDNs hold master's degrees while only 4% hold doctoral degrees. Effective January 1, 2024, the minimum degree requirement for entry-level practice as an RDN will change from a bachelor's degree to a graduate degree. As practicing RDNs desire doctoral-level training to advance their skills and career options, they have very few suitable choices in the current educational marketplace beyond the traditional PhD. There is a clearly a need for a professional practice doctoral degree pathway to fill this gap. Results of the feasibility study conducted by Eduventures concluded that the Nutrition Sciences doctoral market is a small but growing field with opportunity for differentiation regionally. This study also revealed that the proposed degree is in line with key application drivers, including costs of nutrition programs, online offerings, and the ability to work at your own pace.

Core Competencies
The proposed DND curriculum is based on five ACEND-defined competency domains. Each domain contains specific competency statements and performance indicators and are detailed below:
1. Advanced Nutrition and Related Science: RDNs who complete a practice doctorate discover and integrate established and evolving science into practice.
2. Leadership: RDNs who complete a practice doctorate demonstrate emotional intelligence, creativity, and innovation to lead groups and programs.
3. Advocacy: RDNs who complete a practice doctorate advocate for change and address issues related to the wider social, cultural, and political environment.
4. Critical Inquiry, Research and Scholarship: RDNs who complete a practice doctorate lead and engage in research and scholarly initiatives and activities.
5: Education: RDNs who complete a practice doctorate lead education initiatives or programs.

Description of the Proposed Major or Degree
The CAHP proposes to develop an accredited post-professional advanced practice doctorate degree program tailored to meet evolving practice needs of RDNs. Per accreditation requirements, the program will consider candidates who have a master's degree and 3 years of post-credentialing experience or 5 years of post-credentialing experience without a master's degree. The program of study would require students to complete didactic courses, a scholarly project, and a residency for a total of 48 credit hours. The DND curriculum will be comprised of 36 credit hours of didactic courses, 6 credit hours of scholarly activity, and 6 credit hours of residency (Table 1). Didactic course work will be offered in a fully online, asynchronous format. Residency experiences will be completed in the student's home community under the guidance of DND faculty and an onsite mentor.
The mission of the DND program is to prepare advanced nutrition and dietetics practitioners who will create a healthy future for individuals, communities and populations through expert-level knowledge and skills, critical inquiry proficiency, and innovation in scholarly activity.

The goals of the DND program are:

1. Graduates will demonstrate the competencies associated with the advanced practice of nutrition and dietetics.
2. Graduates will demonstrate the skill for innovative practice and advancement of the discipline through critical inquiry and scholarly activity.

Resources & Budget

Proposed enrollment is based on accreditation standards and projected faculty resources. The program proposes to enroll 8 students the first year with an incremental annual increase of an addition 2 to 4 students per year until maximum enrollment of 20 students per year is achieved, projected to be in year 5. Tuition revenue generated by the DND degree program will be sufficient to cover projected expenses at inception due to existing resources. The CAHP proposes charging $625 per credit hour (assuming first cohort enrollment in FY 2024) for the program which is competitive with comparable programs outside of the University of Nebraska system.

Summary

The Doctor of Nutrition and Dietetics (DND) plan of study is intentionally designed to elevate the role of practicing RDNs by providing the course content and residency activities needed to advance the level of practice in the field. This asynchronous, 48-credit hour advanced practice program of study provides working students with an opportunity to advance their professional practice and leadership competencies through a distance education platform.

Appendix C: Letter of support, CAHP Curriculum Committee

June 30, 2023

Corrine Hanson PhD, RD, LMNT, FAND
Director, Medical Nutrition Program
984045 Nebraska Medical Center
Omaha, NE 68198-4045

Dear Dr. Hanson,

As Chair of the College of Allied Health Professions (CAHP) Curriculum Committee, I would like to report that the Committee has reviewed and approved the plan of study proposed for the Doctor of Nutrition and Dietetics degree. The program developers are applauded for integrating existing graduate-level coursework into the plan of study which will foster interprofessional collaborations and reduce unnecessary course duplication.

Course Number & Approval Action
NTSC 760 – Newly Approved
NTSC 763 – Newly Approved
NTSC 766 – Newly Approved
HPTT 801 – Previously Approved
HPTT 802 – Previously Approved
HPTT 805 – Previously Approved
HDS 831 – Previously Approved
HDS 852 – Previously Approved
HPTT 823 – Previously Approved
HDS 815 – Previously Approved
BIOS 806 – Previously Approved
NTSC 785 – Newly Approved
NTSC 790 – Newly Approved
NTSC 770 – Newly Approved
NTSC 773 – Newly Approved
Total program of study: 48

Following the Accreditation Council for Education in Nutrition and Dietetics (ACEND) accreditation standards for this new advanced practice pathway will help to ensure that the program will deliver a quality curriculum and meet the goals, competencies, and performance indicators identified. Again, program developers are applauded for being one of the very first programs to apply for accreditation through ACEND for the newly recognized advanced practice doctorate. As Assistant Dean for Academic Affairs in the CAHP, I offer my full support in advancing the clinical doctorate proposal. I believe that the DND plan of study will provide an innovative and in demand opportunity for practicing Registered Dietitian Nutritionists to advance their knowledgebase, clinical skill level, and scholarship agenda for evidenced-based practice.

Sincerely,

Tammy Webster, PhD
Professor, Asst Dean for Academic Affairs
Chair, Curriculum Committee

University of Nebraska Medical Center

College of Allied Health Professions
984000 Nebraska Medical Center | Omaha, NE 68198-4000 | 402.559.3846 | tammy.webster@unmc.edu unmc.edu

Appendix D: Encoura Eduventures Feasibility Study

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where informed decisions begin

Feasibility Study: Doctorate in Nutrition Sciences

University of Nebraska

May 2023

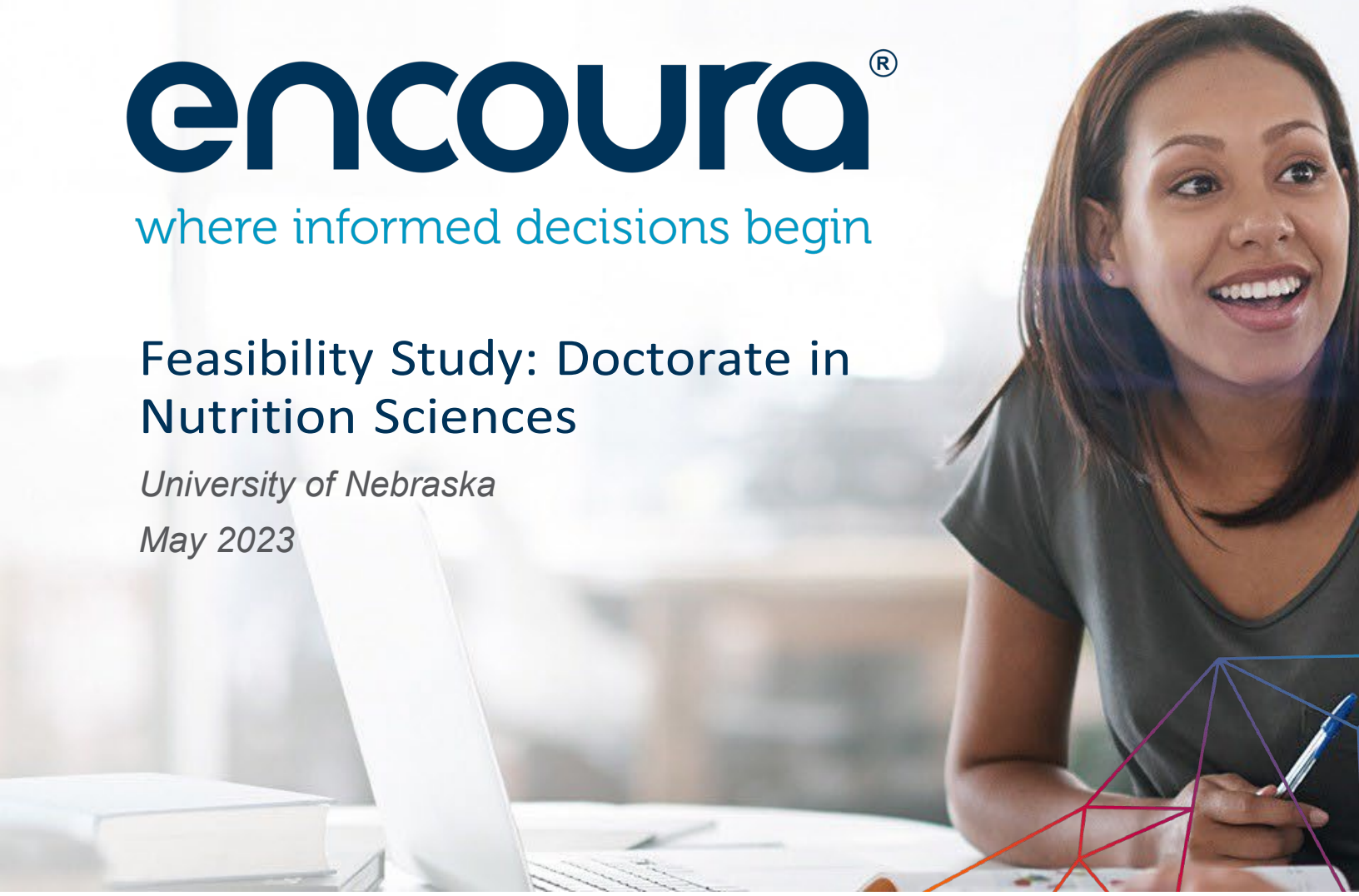

Table of Contents

University of Nebraska: Doctorate in Nutrition Sciences

About the Study

Project Background

University of Nebraska

PROGRAM: Doctorate in Nutrition Sciences

The College of Allied Health Professions (CAHP) at the University of Nebraska Medical Center (UNMC) is interested in obtaining a better understanding of the market for an advanced practice doctorate degree in Nutrition Science (DNS). UNMC is considering launching a new DNS program that will consist of 48 credit hours, with 36 credits composed of didactic coursework offered in a fully online, asynchronous format. The primary audience for this program is practicing nutrition professionals with 3-5 years of experience. The institution is interested in obtaining data and insights at the national, state, and regional level and plan to leverage key insights to design a unique and competitive program. Stakeholders want to learn more about market opportunity and program demand, how competitor programs are structured, and what prospective students look for in a DNS program.

Key Research Questions:

- What is the overall health of the DNS market given key supply and demand indicators?
- What are the key characteristics of competitor programs and how are they positioned in the market? Where is there opportunity in the market for UNMC?
- What can we learn from the desires of prospects interested in aligned higher education programming?

University of Nebraska: Doctorate in Nutrition Sciences

Executive Summary & Recommendations

Executive Summary. The Nutrition Sciences doctoral market is a small but growing field with opportunity for differentiation regionally.

- **Nutrition science and related markets are small, yet show potential opportunity.** Nationally, there are 179 doctorate programs reporting to the nutrition science CIP code and 117 programs reporting to aligned CIP codes in 2021. Top providers averaged 6 conferrals in 2021, indicating the market is small. Despite these small numbers, student demand shows growth since 2012. Markets related to nutrition sciences have seen mixed performance in recent years and remain small, even at the national level. Regional viability appears more promising with steady conferral growth and limited competitors.

- **Top regional providers are new to the market.** Although national institutions consist of strong brands such as Cornell, UNC Chapel Hill, and Tufts University, the regional landscape showcases newer programs that have reported few conferrals. The two programs that are mature in the regional market (University of Nebraska-Lincoln and University of Kansas) have not seen steady growth since being launched in 2013.

- **Online is not mainstream.** There are no top conferring institutions nationally or regionally that are reporting their nutrition science program online. This may be in part due to the residency requirements of some institutions, the novel nature of offering an online doctorate, or because the relatively small size of this market. Modality selection is not explicitly mentioned by institutions. While two of the profiled competitors offer their programs online, these were not top conferring institutions and were selected for analysis for other reasons.

- **Local advanced practice doctoral programs are reporting small programs and are looking for experience in the field.** Eduventures selected 5 institutions to analyze in more detail, and on average, these institutions awarded 7 conferrals in 2021. These institutions typically targeted currently employed nutritionists and dieticians with significant experience within a research and/or clinical setting.

- **Prospective adult students are most interested in a college experience that is affordable, asynchronous, and offers hands-on experience that is predominately online.** Seventy-six percent of adult prospects interested in nutrition science desired instruction taught all, if not mostly, online. These prospects also expect to learn the most from internships/practicums (48%), followed by interactions with faculty (36%) and students (33%) within their field. An institution's strong alumni network (0%) and access to career

services (3%) are less important to these students, however, they care most about affordable tuition (67%) and options to work at their own pace (42%).

- **Possible increased demand for the future.** The current labor market indicates average demand for nutrition science-aligned occupations. Within the next ten years, these jobs are projected to grow on average by 14% while all other occupations both nationally (10%) and regionally (9%) are projected to grow slightly

Recommendations. Based on growing student demand and limited regional competition, UNMC has the opportunity to differentiate itself by offering a unique online program. However, stakeholders should set realistic enrollment expectations and if this program is launched, UNMC should consider the following:

- **Expect small enrollment numbers.** Top national nutrition science doctoral programs averaged 8 conferrals in 2021, though this number is considered optimistic. When accounting for all nutrition science competitors, conferrals averaged 4 within the same year.
- **Offer an online, asynchronous program.** Given that the regional market contains limited competitors, none of which offer online instruction, UNMC is strategically positioned to offer a program that is new and less likely to be rivaled within the market. UNMC's proposal to offer didactic courses in an asynchronous format is also in line with adults' interest in web-based nutrition/dietetics courses that can be completed at their own pace.
- **Emphasize institution cost and ROI.** Adult prospects interested in nursing/dietetics are extremely sensitive to tuition pricing. Therefore, UNMC should stress that UNMC's tuition is more affordable compared to other top institutions. Additionally, describing how graduates can earn more money and how the program will aid in the progress of their careers will be a strong addition to the value proposition of the degree.
- **Be detailed in explanation of the target audience, capstone project, and residency.** While profiled institutions target registered nutritionists/dietitians, they do not specify what types of research experiences or aspects of the professional experience they value. Likewise, some institutions are vague in their descriptions of the capstone project and residency experience. UNMC has the opportunity to differentiate itself and provide clarity by detailing the following: learning objectives for residency, required residency hours, potential residency locations, and target audience and capstone project requirements. Emphasis on residency and capstone projects could increase interest from prospective students given that they are most interested in learning from hands-on experiences.
- **Explain the benefits of earning a doctorate degree compared to a bachelor's.** None of the aligned jobs examined within this study required post-bac education for entry into the workforce. It is vital for UNMC to explain to prospective students the potential differences in salary, hands-on experiences, and

career trajectory through the attainment of a doctorate that cannot be gained with a bachelor's degree. Prospective students highly value the ability to earn more money and to gain hands-on experience that can aid in creating a strong foundation for their careers.

University of Nebraska: Doctorate in Nutrition Sciences

Research Findings: Program Demand

The Aligned Market

Examining Program Trends and Demand

This section of the report leverages data NCES IPEDS for an indication as to the scale and character of the program market aligned to the following CIP codes:

- 30.1901) Nutrition Sciences
- 51.3101) Dietetics/Dietitian (RD)
- 51.3102) Clinical Nutrition/Nutritionist
- 51.3199) Dietetics and Clinical Nutrition Services, Other
- 51.9999) Health Professions and Related Clinical Sciences

As noted in the project scope and the methodological detail section of this report, the CIP codes and corresponding descriptions used in the IPEDS analysis are listed in the Appendix.

The next slides provide completion trends nationally and within UNMC's greater region: Nebraska, Colorado, Iowa, Kansas, Missouri, South Dakota, Wyoming.

National Doctorate's in Nutrition Science. The doctoral market at the national level shows strong preference for in-person instruction with minimal conferral growth, and slight declines in 2014 and 2019. Though there are signs of recovery in 2020 and 2021 it will be crucial to monitor these trends. Currently, provider growth exceeds student demand, indicating possible market saturation.

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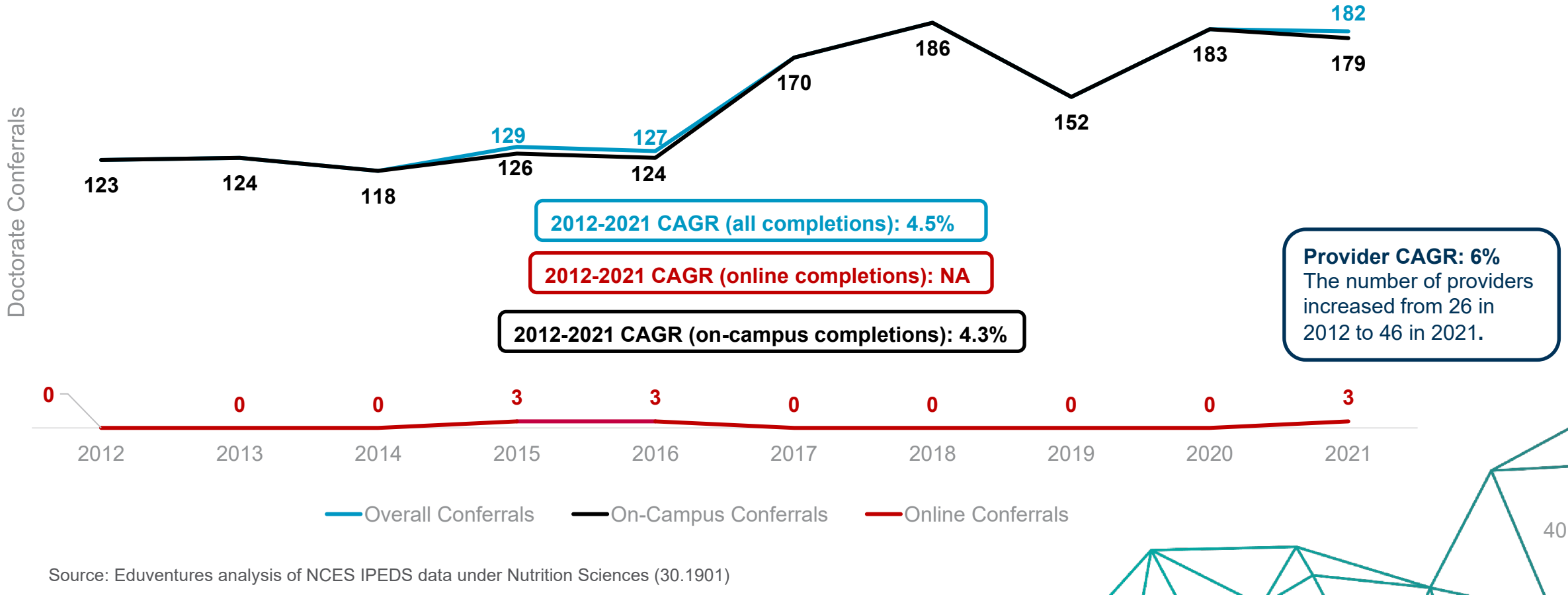
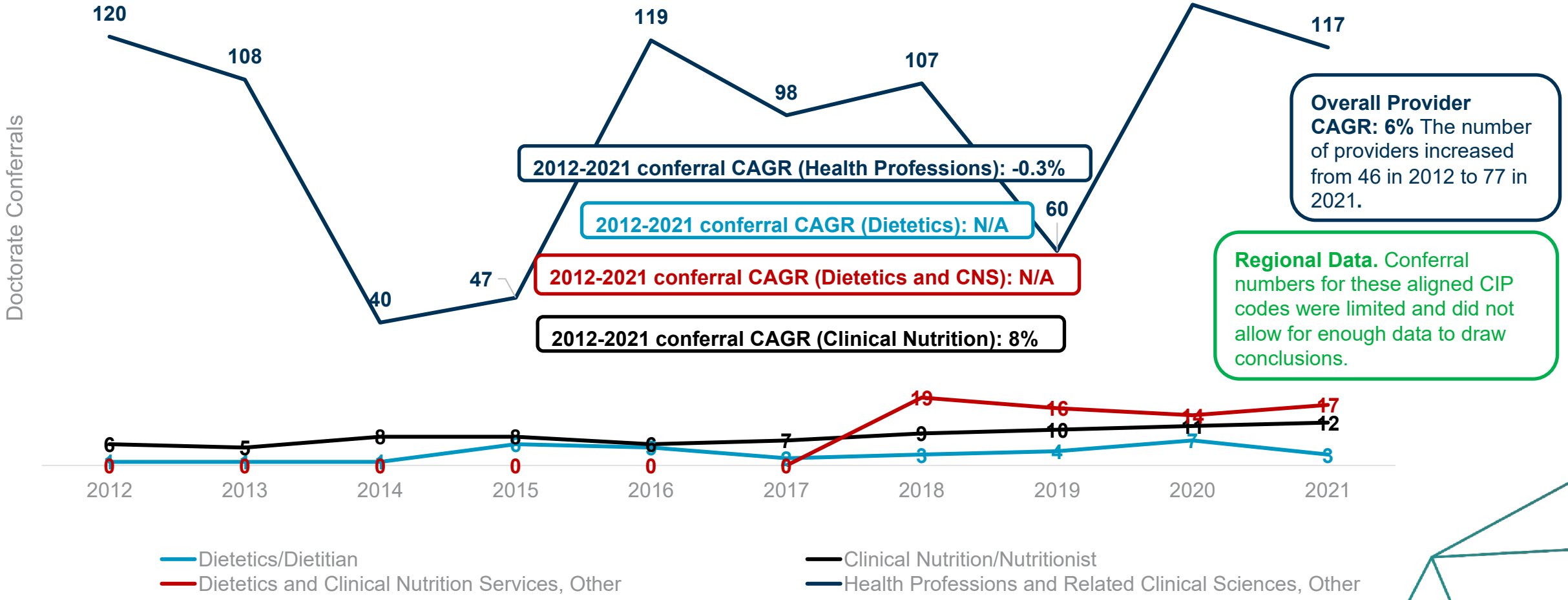


Provider CAGR: 6%
The number of providers increased from 26 in 2012 to 46 in 2021.

Source: Eduventures analysis of NCES IPEDS data under Nutrition Sciences (30.1901)

National Doctorate's in Related Programs. Analogous to the field of Nutrition Science, the national markets for doctoral programs aligned to nutrition science has demonstrated limited growth over the past decade, with a notable, but fluctuating, preference for in-person instructional modalities. Other institutions could be reporting similar programming to these CIP

encoura Eduventures Research



Overall Provider CAGR: 6% The number of providers increased from 46 in 2012 to 77 in 2021.

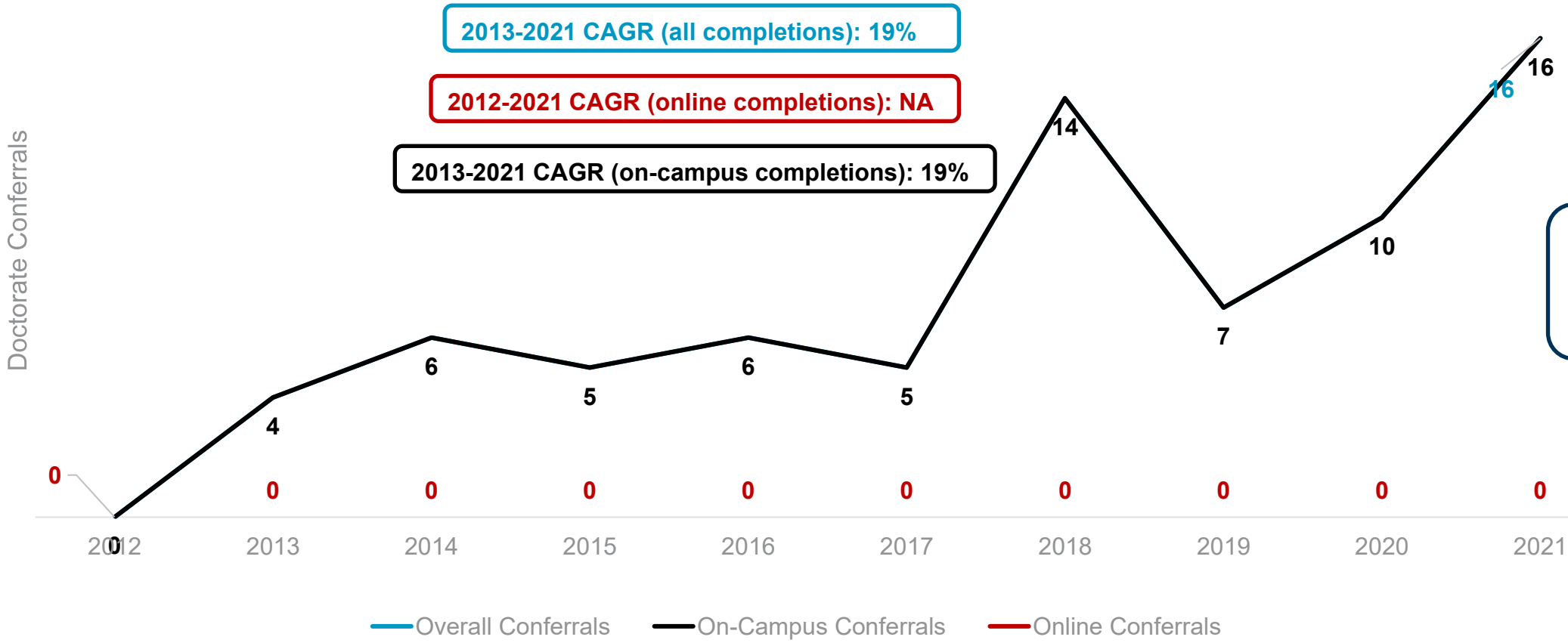
Regional Data. Conferral numbers for these aligned CIP codes were limited and did not allow for enough data to draw conclusions.

Source: Eduventures analysis of NCES IPEDS data of aligned programs (See Appendix for complete list of CIP codes)

codes; however, conferral numbers are small and fluctuating.

encoura Eduventures Research

Regional Doctorate's in Nutrition Science. The regional market for doctoral programs in nutrition science is small with no evident online providers. Though, conferral growth rate outpaces that of providers, this may be insufficient for a viable market.



Provider CAGR: 12%
The number of providers increased from 2 in 2013 to 5 in 2021.

Source: Eduventures analysis of NCES IPEDS data under Nutrition Sciences (30.1901)
Region includes: Nebraska, Colorado, Iowa, Kansas, Missouri, South Dakota, Wyoming.

University of Nebraska: Doctorate in Nutrition Sciences

Research Findings: Competitive Landscape

Competitive Landscape

An Overview of Top-Conferring Aligned Programs

In this section of the report, Eduventures provides an overview of the top 10 conferring competitors nationally and the top 5 regionally (Nebraska, Colorado, Iowa, Kansas, Missouri, South Dakota, Wyoming) for Nutrition Sciences (30.1901). As Eduventures did not find relevant data from the additional aligned CIP codes, they are not included in this section of the study.

The next few slides include the institution names, modality, 2021 completions, their year-over-year growth rate, 2016-2021 CAGR.

National Competitive Landscape. Top national nutrition science doctoral programs averaged 8 conferrals in 2021. While there are indications of growth from the previous year for many, performance over the past five years has varied. No top providers are reporting online conferrals.

Top 10 Conferring Programs Nationally

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Institution	2021 Completions	2020-2021 Growth	2016-2021 CAGR
University of North Carolina at Chapel Hill	13	44%	5%
Tufts University	12	-14%	8%
University of California-Davis	8	14%	-9%
Ohio State University-Main Campus	8	300%	0%
Cornell University	7	-46%	-7%
University of Georgia	7	133%	N/A
Auburn University	6	20%	25%

Purdue University-Main Campus	6	20%	0%
Texas Tech University	6	-14%	N/A
University of Florida	6	50%	15%

Teal = Online Offered

Source: Eduventures analysis of Lightcast data of doctoral degrees reporting to 30.1901) Nutrition Sciences
Several institutions have reported multiple programs related to nutrition science, for which we were unable to identify the corresponding Classification of Instructional Programs (CIP) codes. Consequently, program titles have not been provided.

Regional Competitive Landscape. Within the region, only five nutrition science doctoral programs are being reported, the majority of which have been in operation for less than five years and report fewer conferrals compared to top national providers. This suggests a possible opportunity to enter a potentially emerging market. No providers are reporting online conferrals.

Top 5 Conferring Programs Regionally

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Institution	2021 Completions	2020-2021 Growth	2016-2021 CAGR	Program(s) Offered
University of Nebraska-Lincoln	5	0%	5%	PhD in Nutrition and Health Science
University of Kansas	4	0%	15%	Doctor in Clinical Nutrition
Kansas State University	3	0%	N/A	PhD in Food, Nutrition, Dietetics and Health
Colorado State University-Fort Collins	2	N/A	N/A	PhD in Nutrition and Food Science
University of Missouri-Columbia	2	400%	N/A	PhD in Nutrition and Exercise Physiology

Teal = Online Offered

Source: Eduventures analysis of Lightcast data of doctoral degrees reporting to 30.1901) Nutrition Sciences
Region includes the following states: Nebraska, Colorado, Iowa, Kansas, Missouri, South Dakota, Wyoming.

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University of Nebraska: Doctorate in Nutrition Sciences

Research Findings: Competitive Analysis

Competitive Analysis:

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An Analysis of Closely Aligned Competitor Programming

In this section of the report, Eduventures provides an analysis of five institutions that offer advanced practice programs. Eduventures selected institutions that were top performing either regionally or nationally and have been experiencing recent growth. These institutions include Auburn University, Maryland University of Integration Health, The University of Kansas, The Ohio State University, and Rutgers University-New Brunswick.

The next few slides evaluate the programs based on their conferral performance, modality options, curriculum details and requirements, marketing themes, and overall positioning.

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Conferrals and Degrees. Examined programs are among the few specifically geared toward advanced practice students. The University of Kansas* and Rutgers** offer adjacent programs which may be competitive within the market.

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Institution	2021 Conferrals	Degree(s) Offered	Reason for Inclusion
Maryland University of Integrative Health	17	Doctor in Clinical Nutrition	Not a top conferring institution, however, this program is offered online and is reporting to the Dietetics and Clinical Nutrition Services, Others (51.3199) CIP Code
The Ohio State University	8	PhD in Nutrition	Top conferring national provider with strong year-over-year growth.
Auburn University	6	PhD in Nutrition	Top conferring national provider with strong short-and-long-term growth.
The University of Kansas*	4	Doctor in Clinical Nutrition PhD in Medical Nutrition	Top regional provider with strong long-term growth.
Rutgers University**	1	Doctor in Clinical Nutrition	Not a top conferring institution; however, this program is offered online and claims to be the first online Advanced Practice Clinical Doctorate in Nutrition Science program in the world.

Teal = Online Offered

Source: Eduventures analysis of institutional webpages
*University of Kansas offers two programs and reports conferrals under the same CIP code (30.1901) for Nutrition Sciences. The Clinical nutrition program is offered fully online, with one orientation and experiential learning campus visit required.
**Rutgers additionally offers a PhD program in Nutrition Sciences that is not advanced practice.

Conferrals and Degrees. When considering conferral performance over the past five years, most, with the exception of Maryland University, have not seen growth.

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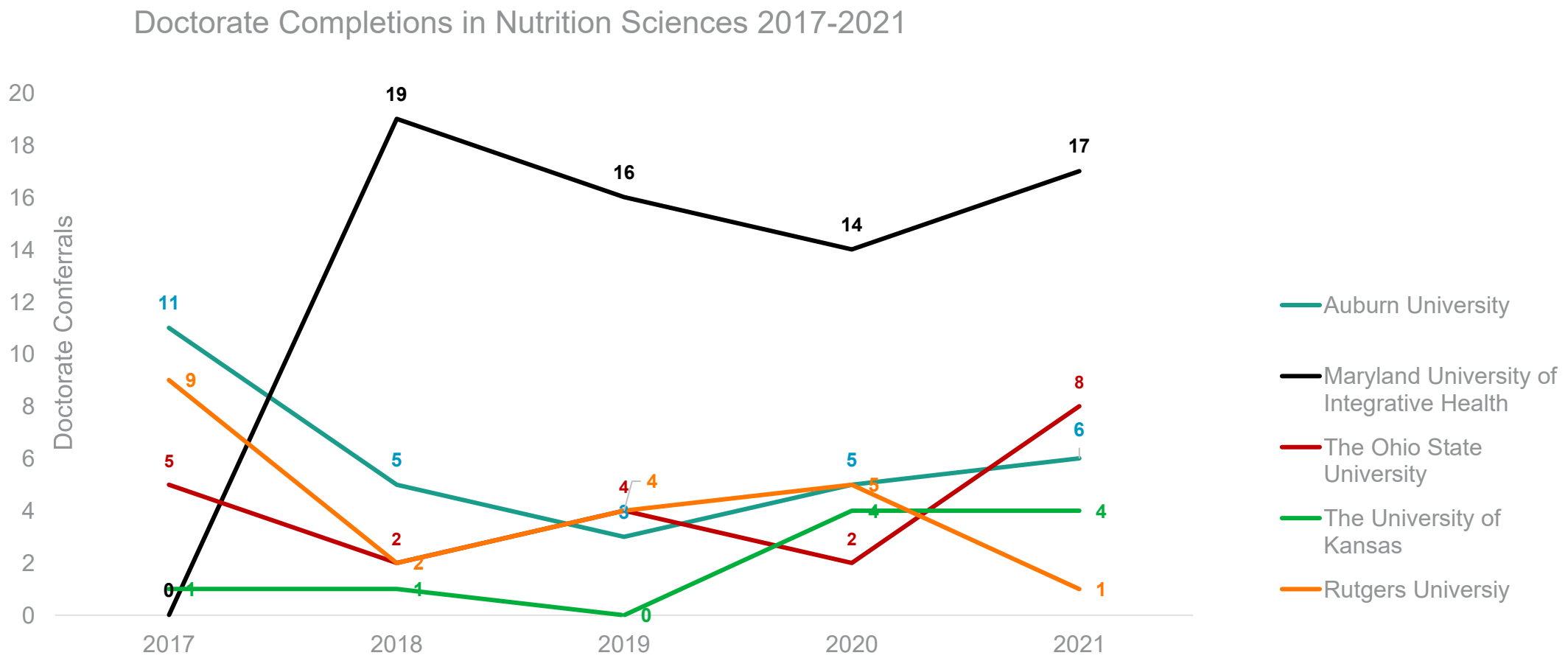

Source: Eduventures analysis of Lightcast data.

Target Audience. Competitors target currently employed registered dietitians/nutritionists or those who possess significant post-baccalaureate experience in the field. However, there is some ambiguity as to what this experience entails.

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Institution	Target Audience
Auburn University	Prospective students who have completed a minimum of 60 semester hours of graduate coursework beyond the bachelor's degree. Prospects should mainly be interested in studying obesity and diabetes. However, prospects interested in additional topics (i.e., nutritional genomics, nutritional physiology, cellular and molecular nutrition, nutritional biochemistry, and nutritional epidemiology) are encouraged to apply.
Maryland University of Integrative Health	Prospective students who hold a master's degree in a nutrition-related field or who have a bachelor's degree but is a registered dietitian/registered dietitian nutritionist.
The Ohio State University	Prospective students with a master's degree are preferred, however, students with an exceptional record in a baccalaureate program and experience in a research setting may be admitted directly into the doctoral program. Additionally, students should have an interdisciplinary interest in some of the following areas: Education and Human Ecology, Food, Agricultural and Environmental Sciences; and Medicine.
Rutgers University	Prospective students who are registered Dietitian Nutritionists and hold a master's degree, preferably in a nutrition or health-related field.
The University of Kansas*	Prospective students who are currently working in the field of nutrition and dietetics with a registered dietitian credential.

Source: Eduventures analysis of institutional webpages
*The target audience is based on the programmatic webpage of the Clinical Nutrition Program.

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Program & Career Outcomes. Top competitors highlight rigorous interdisciplinary experiences that will equip prospective students to keep pace with the medical complexity of today's clinical nutrition practice.

Institution	Program Outcomes	Career Outcomes
Auburn University	Gain intensive study and research experiences in applied and basic nutrition fields.	Provide advanced nutrition care in the areas of nutritional genomics, nutritional physiology, cellular and molecular nutrition, nutritional biochemistry, and nutritional epidemiology, diabetes, or obesity.
Maryland University of Integrative Health	Evaluate and synthesize data from the client history, diet history, nutrition-focused physical examination, lifestyle, anthropometrics, genomics, environmental impacts, and laboratory findings to provide a comprehensive client assessment and develop a nutrition care plan.	The ability to provide advanced nutrition care in practice and research settings within the areas of gastrointestinal, immune, cardio-metabolic, neurological, nutritional genomics, energy metabolism, and endocrine health.
The Ohio State University	Gain research background in the following areas: Animal Growth, Development, and Lactation, Biochemical and Molecular Nutrition, Clinical Nutrition and Chronic Diseases Functional Foods and Bioactive Compounds, Nutrition and Cancer, and Behavioral Health and Community Nutrition	Equip students to adapt to the constantly developing and changing methods in quantitative and qualitative research in the nutritional sciences. Provide students with the oral and written communication skills required for the competitive job market.
Rutgers University	Interprofessional collaboration and evidence-based practice	Innovative, autonomous, advanced dietetics practitioners and researchers with expert-level knowledge and skills, critical thinking proficiency, and aptitude in scientific inquiry.

The University of Kansas*	Students will expand their interprofessional experiences, communication skills, medical nutrition therapy skills, management and leadership skills, and research.	Broaden the knowledge base and enhance critical thinking skills In order to stay abreast of the increasingly intricate landscape of contemporary clinical nutrition.

Source: Eduventures analysis of institutional webpages
*Program and career outcomes are based on the programmatic webpage of the Clinical Nutrition Program.

Curriculum. Top competitors have curricula that focus on statistical analysis and preparation, and presentation of the research thesis. University of Kansas and Rutgers require a residency to satisfy core requirements.

Courses listed in various colors indicate similar themes among examined providers.

Auburn University	Maryland University of Integrative Health	The Ohio State University	Rutgers University	The University of Kansas*
60 credits (minimum)	*44 credits*	*49 credits (minimum)*	*50 credits*	*48 credits*

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Core Courses • Minerals (3) • Vitamins (3) • Macronutrients: Integration and Metabolism (4) • Lab Methods in Nutrition (3) • Methods of Research (2) • Doctoral Seminar (1-2) • Human Nutrient Metabolism (4) • Experimental Statistics I • Experimental Statistics II(3) • Advanced Topics in Nutrition (1-6) • Research and Dissertation • (1-10)	**Core Courses** • Principles of Integrative & Functional Nutrition (3) • Nutritional Approaches to Detoxification (3) • Epigenetics and Nutritional Genomics (3) • Ethics in Clinical Nutrition (1.5) • Research Literacy in Nutrition (3) **Integrative and Functional Nutrition in the following (3):** • Gastrointestinal Health and Disease • Immune Health • Cardio-Metabolic Health • Neurological Health • Endocrine and Energy Health Nutrition for Complex Cases • Nutrition Focused Physical Exam (1.5) • Case Reports in Integrative Health (3) • Research Manuscript I (1) • Research Manuscript II (1)	**15 credits:** • Macronutrients • Micronutrients • Nutrition Research Ethics • Animal Models and Mechanistic Research Design OR Community and Clinical Nutrition Research Design • Oral Research Communication • Grantsmanship **Additional Courses:** • Advanced Nutrition Classes (24) • Graduate Physiology (2) • Advanced Statistics (3-7) • Supporting Course Work and Skill Development (4-7) • Seminar is to be taken every semester except summer (5) • Research Hours (20-25)	**Core Courses (44)** • Nutrition Focused Physical Examination (3) • Vitamin and Mineral Metabolism (3) • Leadership and Change (3) • Thesis Seminar (3) • Advanced Clinical Nutrition (3) (ACN) • CAN Practice Residency Seminar (1) • CAN Practice Residency (4) • Human Metabolism and Body Composition (3) • CAN Seminar (3) • Clinical Nutrition Research Designs (4) • Statistics & Data Analyses for Clinical Nutrition Research (3) • Clinical Nutrition Research Methods (4) • Clinical Nutrition Research Seminar (4) • Nutrition and Pharmacology(3) • **Electives (6)** • **Clinical Nutrition Research Advisement (0)**	• Nutrition Communication for Advanced Practice (3) • Leadership Essentials in Clinical Nutrition (3) • Interprofessional Collaboration (2) • Principles of Interprofessional Education and Practice Theory (1) • Evidence Analysis in Clinical Nutrition (3) • Ethics in Clinical Nutrition Research (1) • Advan. Methods of Research in Clinical Nutrition (3) • Applied Nutrition Epidemiology (3) • Introduction to Health Informatics (2) • Advanced Nutritional Assessment (3) • Pharmacology in Clinical Nutrition (3) • Advanced Nutrition Counseling (3) • Frontiers in Medical Nutrition Therapy (3) • Applied Research Project

Source: Eduventures analysis of institutional webpages
*Curriculum is based on the programmatic webpage of the Clinical Nutrition Program.

Competitor Profiles. Programs average 50 credits and cost $35,000* for resident students. UNMC's proposed tuition is on-par with public institutions. Out-of-State student costs range widely from around $47K to over $100K.

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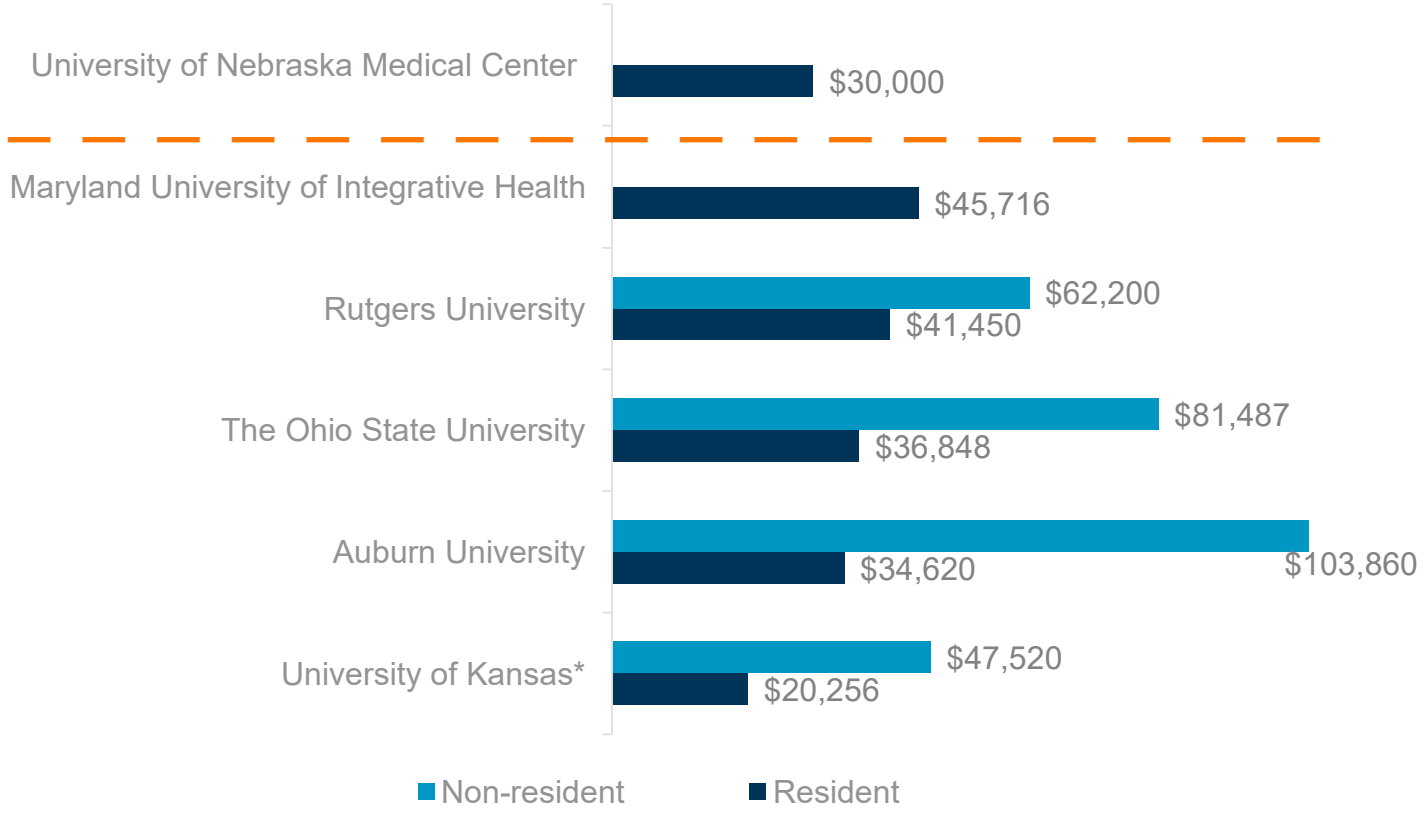
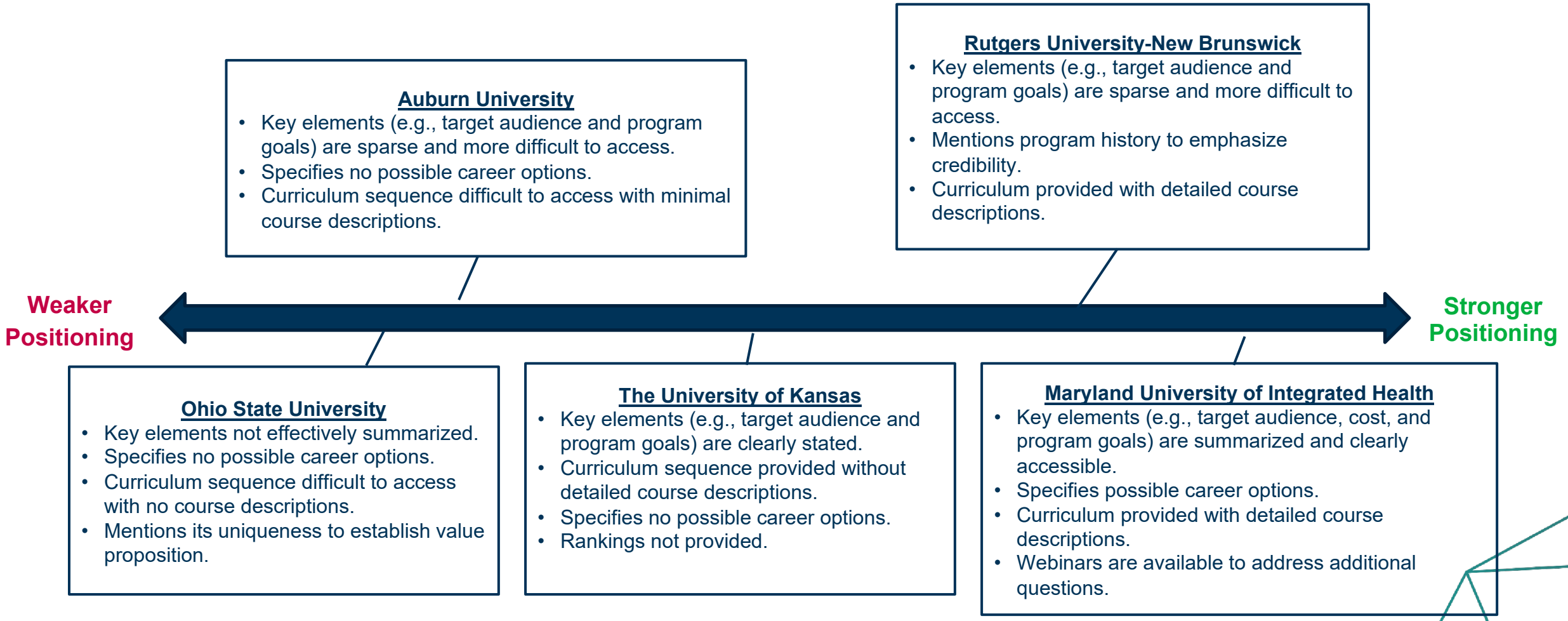


Institution	Credits	Cost Per Credit
Auburn University	60	Resident:$577 Non-Resident:$1,731
Maryland University of Integrative Health	44	$1,039
The Ohio State University	49	Resident:$752 Non-resident:$1,663
Rutgers University	50	Resident:$829 Non-resident:$1,244
University of Kansas*	48	Resident/online: $422 Non-resident:$990

Source: Programmatic and institutional websites
*Estimated total tuition include only tuition costs, not fees or other costs.
**Proposed UNMC tuition is based on the 48-credit hour curriculum from the Nutrition Advanced Practice Doctorate Proposal

Overall Program Positioning (relative). Stronger program positioning, like Rutgers and Maryland University, provide thorough descriptions of curriculum, detail professional outcomes, and emphasize how they differentiate from competitors.



Source: Eduventures analysis of Institutional webpages

University of Nebraska: Doctorate in Nutrition Sciences

Research Findings: Eduventures Proprietary Survey Data

Adult Prospect Research™

Understanding Adult Prospective Students

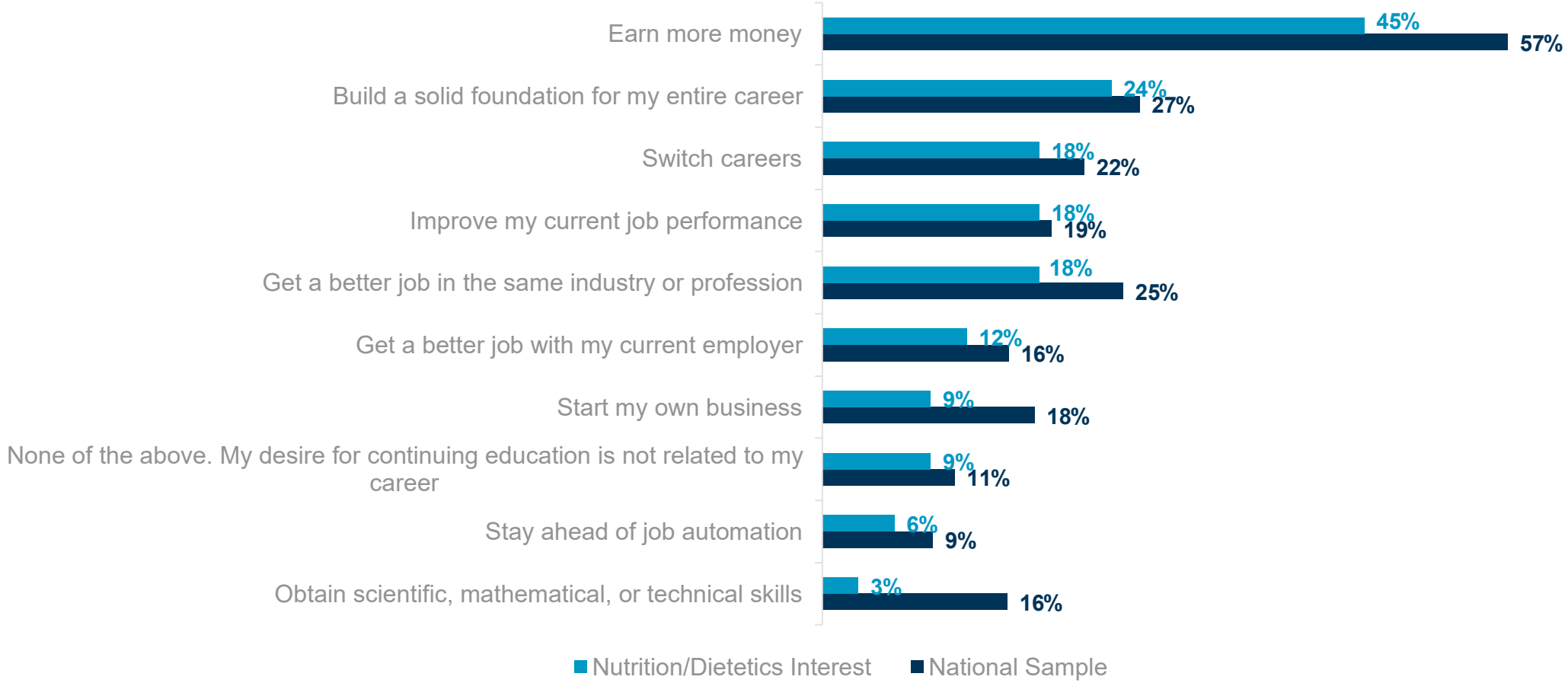
In this section, Eduventures provides insights on prospective adult learners interested in studying "Nutrition/Dietetics" (n=33) at a college, university, or other education/training provider. This data was collected for Eduventures' 2020-2022 Adult Prospective Research™ Survey fielded in the fall of each respective year. This survey was designed to provide insights on the expectations and desired experiences of prospective adult learners.

Specifically, the next slides detail:

- **Top career expectations** for Nutrition/Dietetics interested adult prospects contrasted against national sample
- **Desired learning experiences** for Nutrition/Dietetics interested adult prospects contrasted against national sample
- **Application drivers** for Nutrition/Dietetics interested adult prospects contrasted against national sample
- **Modality preference** for Nutrition/Dietetics interested adult prospects contrasted against national sample

Career Expectations. While adults interested in pursuing a degree in nutrition care most about earning more money, this is still less when compared to the national sample. Those interested in nutrition also care most about building a foundation for their entire career.

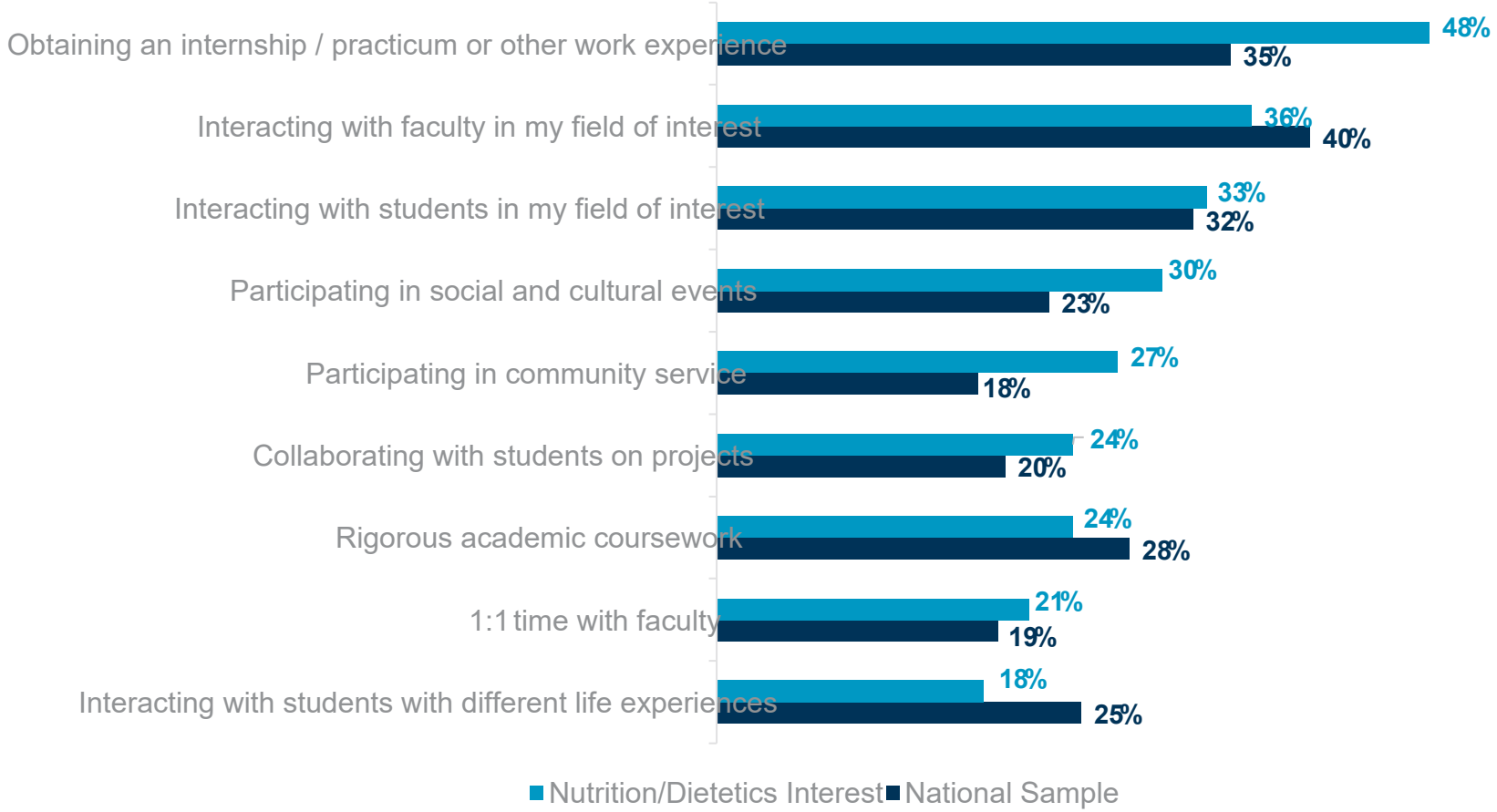
What are your top three career expectations you have for continuing your education?



Source: Eduventures' 2020-2022 Adult Prospective Research™ Survey
National n= 11,417; Nutrition/Dietetics Interest n= 33

Learning Experiences. Prospective nutrition students are focused most on the experiential learning and social aspects of the college experience. These students would be most receptive to detailed messaging on residency experiences and the interactions with faculty and students within the field.

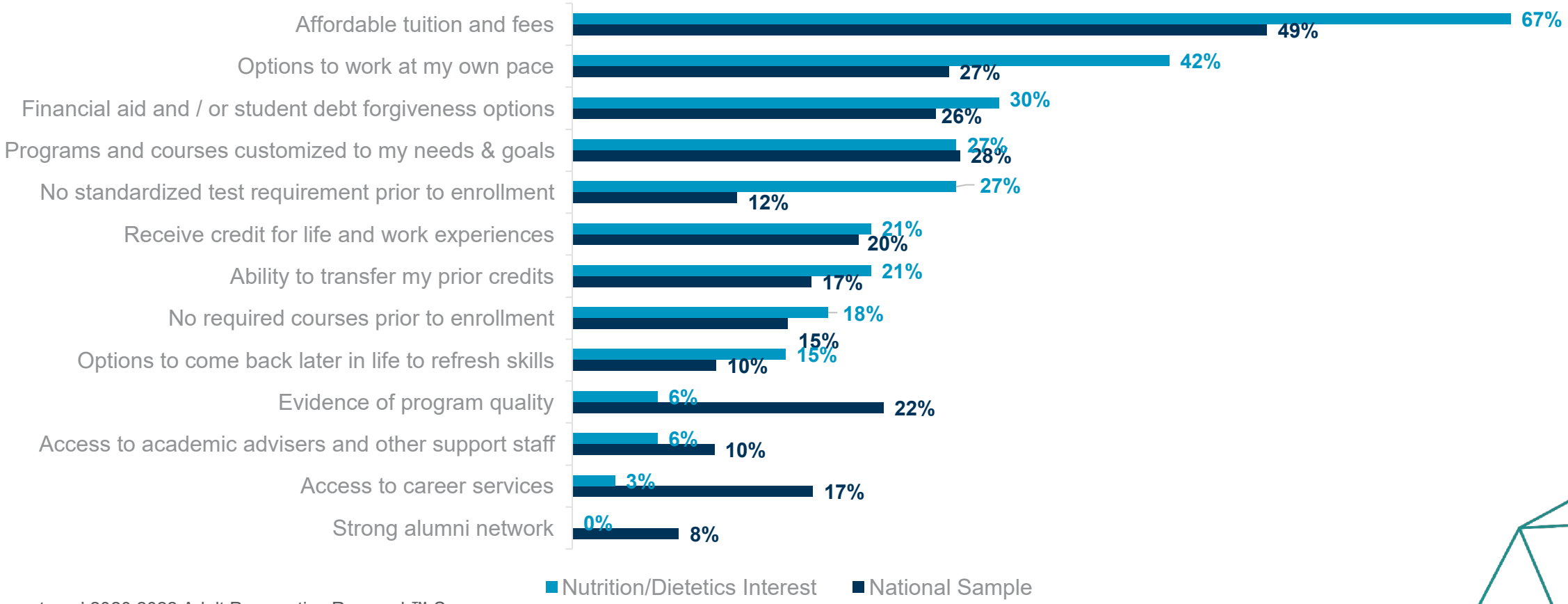
What are the top three experiences you expect to learn the most from while continuing your education?



Source Eduventures' 2022 Adult Prospective Research Survey
National n= 11,417; Nutrition/Dietetics Interest n= 33

Application Drivers. Adult prospects are highly sensitive to the financial aspects of nutrition programs and desire to work at their own pace. This is in line with UNMC's projected tuition (that is slightly less than average profiled competitors) and plans to offer all coursework in an asynchronous format

What are the top three things you care about the most when selecting a degree, certificate, or other education program?



Source: Eduventures' 2020-2022 Adult Prospective Research™ Survey
National n= 11,417; Nutrition/Dietetics Interest n= 33

Modality Preference. Nutrition student prospects desire all, if not most, of their courses to be held online compared to other adults. This is in line with UNMC's goal to offer all coursework online.

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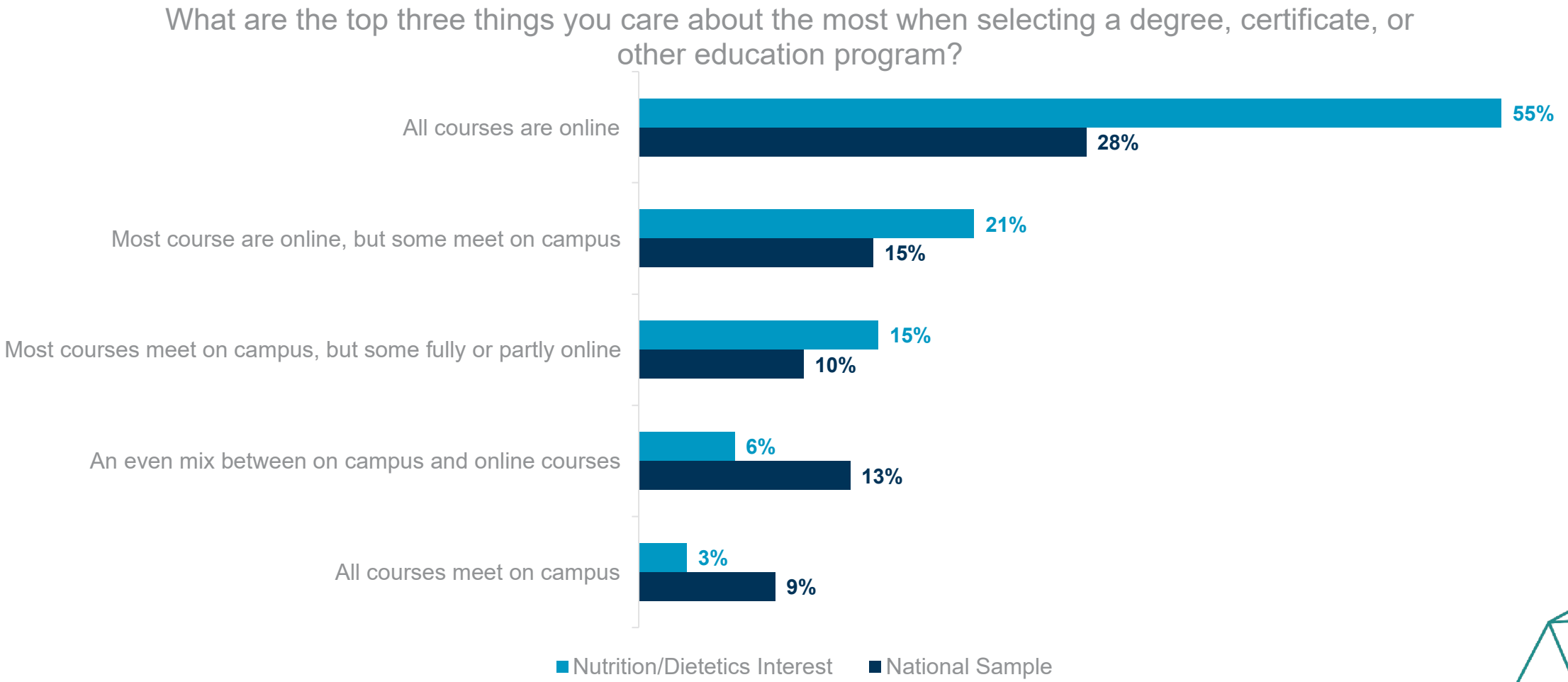

Source: Eduventures' 2020-2022 Adult Prospective Research™ Survey
National n= 11,417; Nutrition/Dietetics Interest n= 33
Given the pandemic, questions surrounding modality preference have been differently phrased each year from 20202022, which may bias responses.

University of Nebraska: Doctorate in Nutrition Sciences

Research Findings: Labor Market Demand

Labor Market Analysis:

Insights into Relevant Labor Market Trends

This section of this report complements the historic market view seen in the previous section by providing forward looking occupational projections for careers aligned to the Nutrition Sciences program through BLS and other labor data sources available through Lightcast.

The next slides show:

- National occupational projection data for aligned occupations
- Regional (Nebraska, Colorado, Iowa, Kansas, Missouri, South Dakota, Wyoming) occupational projection data for aligned occupations
- Regional Job posting analysis

Nutrition-aligned occupations are projected to grow slightly above average, with none requiring post-bac education for entry into the workforce.

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SOC	Description	2022 Jobs	2032 Jobs	% Change	Annual Openings	Typical Entry-Level Education
All	**All National Occupations**	**155,567,029**	**172,333,771**	**10%**	**26,290**	**N/A**
21-1091	Health Education Specialists	59,075	66,996	**13%**	7,575	Bachelor's degree
21-1094	Community Health Workers	66,306	80,476	**20%**	9,229	High school diploma or equivalent
29-1031	Dietitians and Nutritionists	70,408	79,351	**12%**	5,827	Bachelor's degree

Source: Eduventures analysis of Lightcast data.

Regional Occupational Projections. Similar to the nation, nutrition-aligned occupations within the region are projected to grow slightly above average, with none requiring post-bac education for entry into the workforce.

SOC	Description	2022 Jobs	2032 Jobs	% Change	Annual Openings	Typical Entry-Level Education
All	**All Regional Occupations**	**10,522,635**	**11,519,988**	**9%**	**1,755**	**N/A**
21-1091	Health Education Specialists	3,730	4,173	**11%**	472	Bachelor's degree

21-1094	Community Health Workers	4,581	5,477	**18%**	626	High school diploma or equivalent
29-1031	Dietitians and Nutritionists	4,620	5,131	**10%**	375	Bachelor's degree

Source: Eduventures analysis of Lightcast data.
Region includes the following states: Nebraska, Colorado, Iowa, Kansas, Missouri, South Dakota, Wyoming

Regional Job Posting Analysis. Relevant job postings in the region show average demand for all degrees and at the doctorate level.

To investigate labor market demand, Eduventures analyzed job postings in the region from March 2021 to March 2023 for Health Education Specialists, Community Health Workers, and Dietitians and Nutritionists.

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Postings for the relevant job titles for all degree levels:

24,032	3 : 1	33 days
Unique Postings 75,020 Total Postings	Posting Intensity Regional Average: 3 : 1	Median Posting Duration Regional Average: 30 days

Job postings for aligned occupations show average demand from employers between March 2021 and March 2023.

Education Level	Unique Postings	% of Total
No Education Listed	9,524	40%
High school or GED	5,432	23%
Associate degree	1,774	7%
Bachelor's degree	8,313	35%
Master's degree	3,047	13%
Ph.D. or professional degree	513	2%

Job postings listing a doctorate degree made up 2% of postings for the last two years.

Postings recommending candidates with a doctorate degree:

513	3 : 1	30 days
Unique Postings 1,412 Total Postings	Posting Intensity Regional Average: 3 : 1	Median Posting Duration Regional Average: 30 days

Filtering by job postings that list a Doctorate degree reveals the posting intensity remains the same, indicating employers are putting in average effort to fill these jobs.

Source: Eduventures analysis of Lightcast data.
Region includes the following states: Nebraska, Colorado, Iowa, Kansas, Missouri, South Dakota, Wyoming.

Regional Job Posting Analysis. Unique postings have remained quite steady over the past 2 years, with Nebraska accounting for a small portion of them. In March 2023, while there was a significant increase, less than 10% of that boost was from Nebraska.

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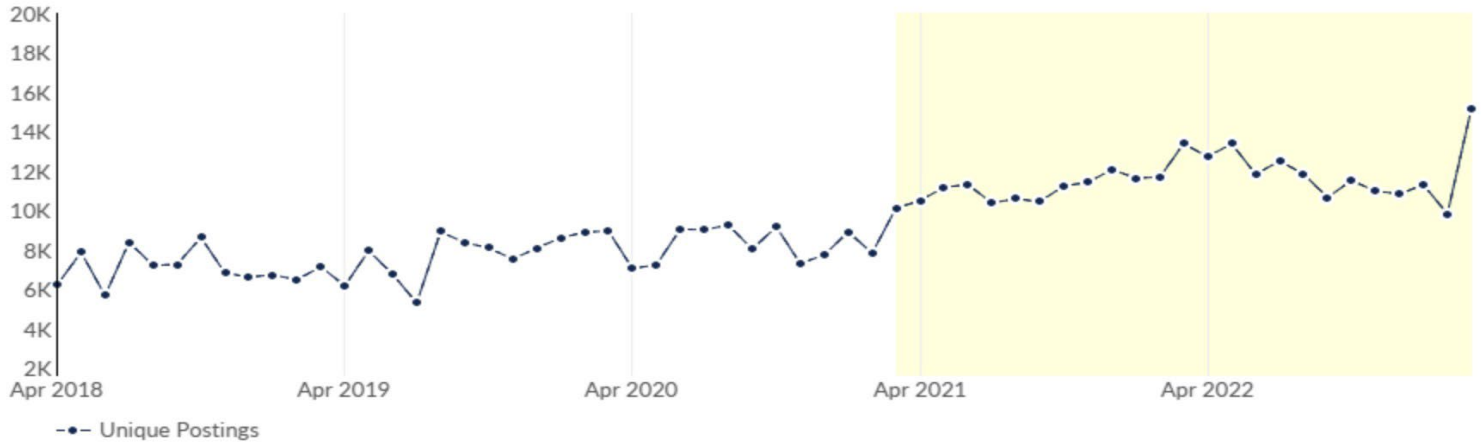
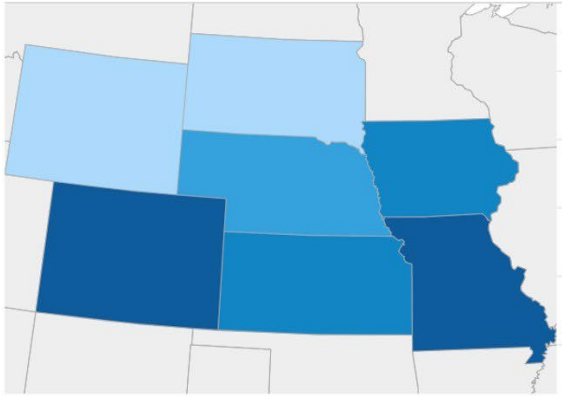
To investigate labor market demand, Eduventures analyzed job postings in the region from March 2021 to



Unique postings has remained quite steady from April 2021 to February 2023, with rapid growth within the past month.

Out of 7 states in the region, Nebraska is ranked 5th for number of job postings. Despite a strong increase in regional unique postings, Nebraska is still number 5 on the list.



State	Unique Postings (Mar 2021 - Mar 2023)
Colorado	6,524
Missouri	6,140
Iowa	4,134
Kansas	3,883
Nebraska	2,178

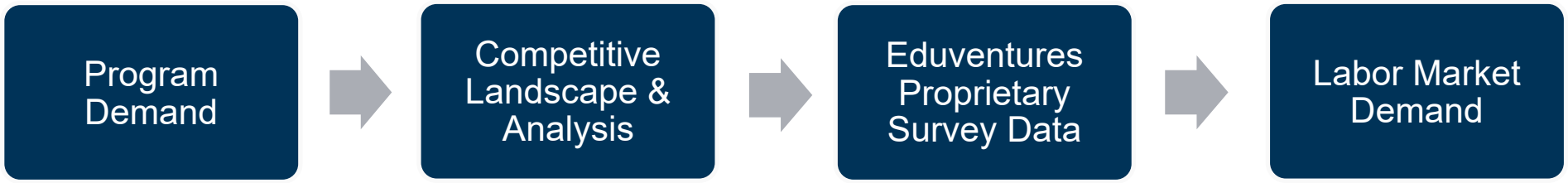
State	Unique Postings (Mar 2023)
Missouri	355
Colorado	295
Kansas	269
Iowa	230
Nebraska	90

Source: Eduventures analysis of Lightcast data.
Region includes the following states: Nebraska, Colorado, Iowa, Kansas, Missouri, South Dakota, Wyoming .

University of Nebraska: Doctorate in Nutrition Sciences

Appendix

Eduventures leveraged the following data sources to investigate the market for this degree:



Program Demand

Eduventures consulted the National Center for Education Statistics' (NCES) Integrated Postsecondary Education Data System (IPEDS) database to analyze national and regional completion and provider trends for the years 2012-2021. The analyzed Classification of Instruction Program Codes (CIP Codes) for this study can be found on slide 40.

Competitive Landscape and Analysis

Eduventures consulted IPEDS degree conferral data for the selected CIP codes to identify the top institutions through their 2021 completions.
Eduventures provided data on the top programs' name (regionally), five-year compound average growth rate (CAGR) from 2016-2021, 2020-2021 year-over-year growth rate, and program modality. Eduventures then identified aligned or relevant programs to provide a competitive analysis.

Eduventures Proprietary Survey Data

Eduventures provides data from the 2020-2022 Adult Prospect Survey to understand how adult learners interested in Nutrition/Dietetics may differ from all other prospects when it comes to their expectations and desires for postsecondary education.

Labor Market Demand

Eduventures leveraged Bureau of Labor Statistics (BLS) data through our partnership with Lightcast to provide the occupational outlook, both nationally and regionally, for the occupations aligned to the proposed program.

Eduventures utilized the following CIP codes to provide analysis on program demand:

CIP Codes	Program Description
30.1901) Nutrition Science	A scientific program that focuses on the utilization of food for human growth and metabolism, in both normal and dysfunctional states, from the interdisciplinary perspective of the agricultural, human, biological, and biomedical sciences. Includes instruction in food science, biochemistry, physiology, dietetics, food and nutrition studies, biotechnology, biophysics, and the clinical sciences.
51.3101) Dietetics/Dietitian	A program that prepares individuals to integrate and apply the principles of the food and nutrition sciences, human behavior, and the biomedical sciences to design and manage effective nutrition programs in a variety of settings. Includes instruction in human nutrition; nutrient metabolism; the role of foods and nutrition in health promotion and disease prevention; planning and directing food service activities; diet and nutrition analysis and planning; supervision of food storage and preparation; client education; and professional standards and regulations.
51.3102) Clinical Nutrition/ Nutritionist	A program that prepares individuals to apply the principles of dietetics and the biomedical and nutrition sciences to design and manage effective nutrition programs as part of clinical treatment and therapy programs, and to manage health care facility food services. Includes instruction in human nutrition, nutrient metabolism, the role of foods and nutrition in health promotion and disease prevention, nutrition as a treatment regime, planning and directing hospital food service programs, diet and nutrition analysis and planning, supervision of food storage and preparation, special diets, client education, and professional standards and regulations.
51.3199) Dietetics and Clinical Nutrition Services, Other	Any instructional program in dietetics and clinical nutrition services not listed above.
51.9999) Health Professions and Related Clinical Sciences	Any instructional program in the health professions and related clinical sciences not listed above.

Source: NCES

Eduventures utilized the following SOC codes to provide analysis on program demand:

SOC Codes	Description
29-1031) Dietitians and Nutritionists	Plan and conduct food service or nutritional programs to assist in the promotion of health and control of disease. May supervise activities of a department providing quantity food services, counsel individuals, or conduct nutritional research.
21-1091) Health Education Specialists	Provide and manage health education programs that help individuals, families, and their communities maximize and maintain healthy lifestyles. Use data to identify community needs prior to planning, implementing, monitoring, and evaluating programs designed to encourage healthy lifestyles, policies, and environments. May link health systems, health providers, insurers, and patients to address individual and population health needs. May serve as resource to assist individuals, other health professionals, or the community, and may administer fiscal resources for health education programs.
21-1094) Community Health Workers	Promote health within a community by assisting individuals to adopt healthy behaviors. Serve as an advocate for the health needs of individuals by assisting community residents in effectively communicating with healthcare providers or social service agencies. Act as liaison or advocate and implement programs that promote, maintain, and improve individual and overall community health. May deliver health-related preventive services such as blood pressure, glaucoma, and hearing screenings. May collect data to help identify community health needs

Source: BLS

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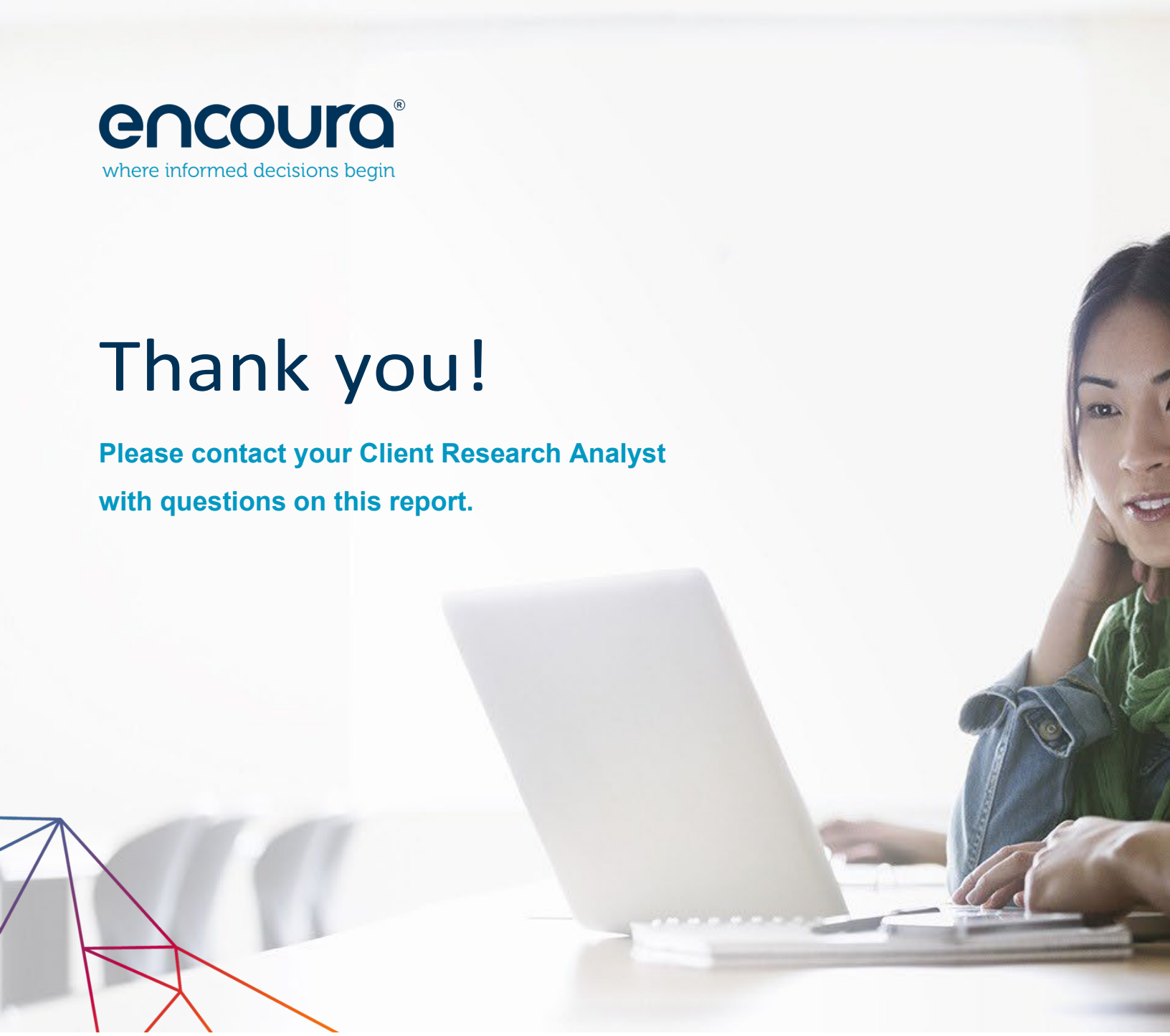
Thank you!

Please contact your Client Research Analyst with questions on this report.



Appendix E: Letter of Support, ACEND

Accreditation Council for Education in Nutrition and Dietetics
the accrediting agency for the
Academy of Nutrition and Dietetics

May 24, 2023

Corrine Hanson, PhD, RD, LMNT, FAND
Program Director, Medical Nutrition Education 984045
University of Nebraska Medical Center Omaha, NE 68198-4045

Dear Dr. Hanson,

I am writing this letter as the Executive Director of the Accreditation Council for Education in Nutrition and Dietetics (ACEND). ACEND's mission is to ensure the quality of nutrition and dietetics education to advance the practice of the profession. Our goals are to elevate the quality of nutrition and dietetic education across the globe, promote opportunities for increasing diversity, equity, inclusion, belonging, and access in nutrition and dietetics education, and focus communication and collaboration to cultivate excellence in nutrition and dietetics.

In line with our mission and goals, ACEND has developed new accreditation standards for Doctoral Education in Advanced Nutrition and Dietetics Practice. This degree will offer credentialed Registered Dietitian Nutritionists (RDNs) the opportunity to pursue additional knowledge and competencies through an advanced practice course of study. Through development of these accreditation standards, ACEND aims to protect the public through assuring the competence of advanced practice nutrition professionals, improve the public's health, and increase recognition of the expertise of RDNs.

UNMC currently offers an entry to practice Master of Medical Nutrition degree for the training of RDNs which is fully accredited by ACEND, and now proposes to offer a Doctor of Nutrition and Dietetics degree. Given your successful history of training entry-level professionals and involvement in the development of the advance practice standards, UNMC is well positioned to develop and implement the new Advanced Practice Doctoral degree. ACEND will look forward to reviewing your application for accreditation.

Sincerely,

Rayane AbuSabha, PhD, RD Executive Director
Accreditation Council for Education in Nutrition and Dietetics

Appendix F: Letter of Support, UNL Entry to Practice Program

June 1, 2023

Kyle P. Meyer, PhD
Dean, College of Allied Health Professions
University of Nebraska Medical Center
Omaha, NE 68198-4000

Dear Dr. Meyer,

This letter is to convey that the Department of Nutrition and Health Sciences at the University of Nebraska-Lincoln (UNL) supports the development of the Advanced Practice Doctor of Nutrition and Dietetics Practice proposed by the College of Allied Health Professions (CAHP) at the University of Nebraska Medical Center (UNMC).

This program complements the accredited nutrition and dietetics program at the University of Nebraska-Lincoln. The Advanced Practice Doctorate degree will allow practicing graduates from the UNL Professional Studies in Dietetics Future Education Model program the option to pursue a practice-based professional doctorate. UNL and UNMC provide the only nutrition and dietetics programs in the State of Nebraska and have historically worked together to meet the needs in the state for Registered Dietitian Nutritionists.

The proposed degree does not represent a conflict or duplication of programs in the Department of Nutrition and Health Sciences and supports the mutual efforts of UNMC and UNL in providing nutrition services to the citizens of Nebraska and beyond its borders.

Sincerely,

Heather Rasmussen PhD, RDN
Associate Professor
Director, Professional Studies in Dietetics Program
Nutrition and Health Sciences
University of Nebraska-Lincoln
heather.rasmussen@unl.edu

Appendix G: Placeholder for Kyle's letter

Appendix H: CV, Director, Medical Nutrition Education

CURRICULUM VITAE
Corrine K. Hanson, PhD, RD, LMNT, FAND

CAMPUS ADDRESS

Medical Nutrition Education Division
College of Allied Health Professions
University of Nebraska Medical Center
4045 Nebraska Medicine
Omaha, NE 68198-4045
Phone: (402)-559-3658
e-mail: ckhanson@unmc.edu

EDUCATION

August 1985-August 1989	Bachelor of Science Human Nutrition	University of Nebraska Lincoln, NE
August 1990-December 1993	Master of Science Human Nutrition	University of Nebraska Lincoln, NE
August 2007-December 2010	Doctor of Philosophy	University of Nebraska Medical Center Omaha, NE

POST-DEGREE TRAINING

July 1989-June 1990	Dietetic Internship	University of Nebraska Lincoln	Training to become a Registered Dietitian
October 2012	Visiting Scientist	Center for Excellence in Chronic Disease University of Maastricht Maastricht, Netherlands	Investigation of the role of nutritional antioxidants and co-morbid conditions associated with COPD.
January 2013	Visiting Scientist	Channing Laboratory Harvard College of Medicine Boston, MA	Investigation of the relationship between serum and intake levels of nutritional antioxidants and lung function in the Normative Aging Study
October 2015	Visiting Scientist	PRISMA Health Organization Peru	Development and validation of food frequency questionnaires in underserved and ethnic populations
August 2017	Visiting Scientist	University of Agder,	Collaborate on a study of diet of

		Kristiansand, Norway	prospective parents and health in the next generation: A comprehensive exploration of dietary causes and determinants for health in the next generation, including a theory based digital intervention to improve preconception diet (PRECDIET)
October 2019	Visiting Scientist	Shanghai First Maternity and Infant Hospital, Tongji University School of Medicine Shanghai, China	Design a collaborative research project centered on nutrition in pregnancy and early infancy

ACADEMIC APPOINTMENTS

July 1 2020-present	Professor with tenure Medical Nutrition Education College of Allied Health Professions, University of Nebraska Medical Center Omaha, NE
July 1 2020-present	Professor (courtesy) Department of Pediatrics University of Nebraska Medical Center Omaha, NE
April 1 2020-present	Director, Medical Nutrition Education Division College of Allied Health Professions, University of Nebraska Medical Center Omaha, NE
July 2019-June 2022	Program Director Fred and Pamela Buffet Cancer Center Nutrition Excellence Initiative, Omaha, NE
October 2018-June 2019	Program Co-Director Fred and Pamela Buffet Cancer Center Nutrition Excellence Initiative, Omaha, NE
August 1, 2018-present	Associate Professor (adjunct) Department of Biomechanics University of Nebraska, Omaha, NE
August 1, 2018-March 31, 2020	Associate Director, Medical Nutrition Education Division College of Allied Health Professions, University of Nebraska Medical Center Omaha, NE
July 1, 2015—June 30, 2020	Associate Professor Medical Nutrition Education

	College of Allied Health Professions, University of Nebraska Medical Center Omaha, NE
July 1, 2015-June 30, 2020	Associate Professor (courtesy) Department of Pediatrics University of Nebraska Medical Center Omaha, NE
July 1, 2013-present	M. Patricia and James W. Leuschen Professor for Advancing Research In the Allied Health Sciences
July.1, 2012-June 2015	Assistant Professor (courtesy) Department of Pediatrics University of Nebraska Medical Center Omaha, NE
July 1, 2011-present	Graduate Faculty, University of Nebraska
July 1, 2011-June 2015	Assistant Professor Medical Nutrition Education Division School of Allied Health Professions, University of Nebraska Medical Center Omaha, NE
July 1995-June 2011	Adjunct Professor Medical Nutrition Education School of Allied Health Professions, University of Nebraska Medical Center Omaha, Ne

CERTIFICATIONS AND LICENSES

Oct. 1990	Registered Dietitian	Commission on Dietetic Registration	#801825
Oct. 1995	Licensed Medical Nutrition Therapist	State of Nebraska	#274

GRANT/CONTRACT SUPPORT

Active (External)

Title:	Influence of Omega-3 Status on Asthma Health During Pregnancy
Funding Agency:	American Lung Association
Start and End Dates:	July 1, 2022-June 20, 2024
Total Dollars:	$95,000.00
Role:	Co-PI
Title:	Associations Between Plant-Based Diet, Ambient Air Pollution, and Asthma Morbidity: Analysis of the Nurses' Health Study
Funding Agency:	American Lung Association

Start and End Dates: July 1, 2022-June 20, 2023
Total Dollars: $50,000.00
Role: Co-I

Title: Evaluation of Social Health Programming's Impact on Adolescent Female's Risk for Development of Hypertensive Disorders of Pregnancy
Funding Agency: Hobel Foundation
Start and End Dates: December 2020-December 2024
Total Dollars: $268,000.00
Role: Co-PI

Title: Enhancing Cancer Patient Nutrition Services: Fred and Pamela Buffet Cancer Center Nutrition Excellence Initiative
Funding Agency: Hirschfeld Family Foundation
Start and End Dates: October 2020-September 2024
Total Dollars: $100,000.00
Role: Project Director

Title: Impact of Blueberry Consumption on Intestinal Permeability, Gut Microbiota, and Gut-Derived Inflammation in Individuals with Elevated Risk of a Pro-Inflammatory Gut Milieu
Funding Agency: United States Highbush Blueberry Council
Start and End Dates: October 2019-March 2023
Total Dollars: $182,160.00
Role: Co- Investigator; Principal Investigator: Heather Rasmussen, PhD

Title: Enhancing Cancer Patient Nutrition Services: Fred and Pamela Buffet Cancer Center Nutrition Excellence Initiative
Funding Agency: Hirschfeld Family Foundation
Start and End Dates: October 2019-September 2024
Total Dollars: $750,000.00
Role: Project Director

Title: Priority Research Center on Lifecourse Nutrition
Funding Agency: University Board of University of Agder
Start and End Dates: October 2018-September 2024
Total Dollars: $1,202.080.00
Role: Co-Investigator; Principal Investigator: Nina Overby, PhD

Title: Targeting Airway Inflammation from Concentrated Animal Feeding Dust
Funding Agency: United States Department of Veteran's Affairs Merit Award
Start and End Dates: October 2018-December 2023
Total Dollars: $497,850.00 (direct cost $497,850.00)
Role: Co-Investigator; Principal Investigator: Debra Romberger, MD

Title: Relationship Between Indoor Ultrafine Particle Exposure and Respiratory Morbidity, Inflammation, and Oxidative Stress in Children with Asthma
Funding Agency: National Institute of Environmental Health Sciences K23
Start and End Dates: July 2018-June 2023
Total Dollars: $983,805.00 (direct costs $708,339.00)
Role: Mentor; Principal Investigator: Emily Brigham, PhD

Completed (External)

Title:	Comparing Urban and Rural Effects of Poverty on COPD (CURE COPD)
Funding Agency:	National Institute of Health/National Institute on Minority Health and Health Disparities (1P50ES026096-01)
Start and End Dates:	July 2015-June 2021
Total Dollars:	$4,997,009.00 (direct costs: $3,903,066.00)
Role:	Co-Investigator (UNMC site PI); Principal Investigator: Nadia Hansel, MD

Title:	The Effect of Dietary Fiber and the Gut Microbiome on COPD
Funding Agency:	Nebraska Department of Health and Human Services, LB506
Start and End Dates:	July 2018-June 2019
Total Dollars:	$50,000.00 (direct costs: $50,000.00)
Role:	Co-Principal Investigator with Tricia LeVan, PhD

Title:	Healthy Friends and Families in Action
Funding Agency:	Children's Hospital & Medical Center Preventing Childhood Obesity Community Grants
Start and End Dates:	June 2017-June 2018
Total Dollars:	$25,000.00 (Direct costs: $25,000)
Role:	Co-Investigator, Principal Investigator: Virginia McGill

Title:	Gut-Lung Crosstalk: Impact of Dietary Fiber and Soy on Systemic Inflammation Among COPD Patients
Funding Agency:	Soy Health Research Program Incentive Award, United Soybean Board
Start and End Dates:	June 2017-June 2018
Total Dollars:	$10,000 (Direct costs: $10,000)
Role:	Co-Investigator; Principal Investigator: Tricia LeVan, PhD

Title:	Role of Omega-3 Fatty Acid-Derived Pro-Resolving Lipid Mediators in Maternal-Fetal Health
Funding Agency:	Edna Ittner Pediatric Research Foundation
Start and End Dates:	November 2016-October 2017
Total Dollars:	$35,000.00 (Direct costs: $35,000.00)
Role:	Co-Principal Investigator with Ann Anderson-Berry, PhD, MD

Title:	The Role of Omega-3 Fatty Acids and Bioactive Lipid Signaling in Airway Inflammation and Resolution Following Organic Dust Exposures
Funding Agency:	National Institute of Health/National Institute of Environmental Health Sciences
Start and End Dates:	July 2016-June 2019
Total Dollars:	$836,735.00 (Direct costs: $579,555.00)
Role:	Mentor; Principal Investigator: Tara Nordgren, PhD

Title:	Newborn Sepsis in Central Nigeria: the Role of Maternal Vitamin D Status
Funding Agency:	Edna Ittner Foundation
Start and End Dates:	November 2015-October 2016
Total Dollars:	$55,000.00 ($55,000.00)
Role:	Co-Investigator; Principal Investigator: Shirley Delair, MD

Title:	Registered Dietitians as Diabetes Case Managers: Defining Scope of Work and

	Documenting Diabetes Self Management Education Outcomes in the Outpatient Setting
Funding Agency:	Academy of Nutrition and Dietetics
Start and End Dates:	November 2014-October 2016;
Total Dollars:	$20,000.00 (Direct costs: $20,000.00)
Role:	Co-Principal Investigator with Meghan McLarney, RD

Title:	An Investigation of the Relevance, Interest and Need for Nutrition Education in an Inter-Disciplinary Environment
Funding Agency:	Kelly Foundation
Start and End Dates:	July 1, 2013-June 30, 2015
Total Dollars:	$25,000.00 (Direct costs: $25,000.00)
Role:	Principal Investigator

Title:	Placental Trafficking and Metabolism of Vitamin D: A Bedside to Bench Evaluation
Funding Agency:	Gerber Foundation
Start and End Dates:	July 1, 2013-June 30, 2014
Total Dollars:	$20,000.00 (Direct costs: $20,000.00)
Role:	Co-Investigator; Principal Investigator: Stephanie Kratzer, MS, RD

Active (Internal)

Title:	Use of Omeg-3 Fatty Acids to Inhibit Drug-Induced Inflammation and Synaptic Alterations
Funding Agency:	Rural Drug Addition Research Center Pilot Grant, University of Nebraska-Lincoln
Start and End Dates:	July 1, 2023-June 30, 2025
Total Dollars:	$50,000
Role:	Co-I (Jana Ponce, PI)

Title:	Palmitoleate protects against Zika virus infection in trophoblasts by activating innate immunity
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2022-June 30, 2023
Total Dollars:	$150,000
Role:	Co-I

Title:	Synthetic Biomimetic Environment (BEASTS) to Investigate the Role of Stiffness in Altered Redox Signaling and Inflammation in Placenta during HDP
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2022-June 30, 2023
Total Dollars:	$150,000
Role:	Co-I

Title:	Nutrition Phenotyping: An Advanced Tool for Accurate Dietary Assessment in Cancer Survivors
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2022-June 30, 2023
Total Dollars:	$40,000
Role:	PI

Title:	Nutrition Phenotyping in Rural Stroke Survivors
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2022-June 30, 2023
Total Dollars:	$7,500
Role:	Co-I

Title:	Promoting Optimal Nutrition in Pregnant Women through AI-Based Interactive Smart Chatbots
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2021-June 30, 2022
Total Dollars:	$7,500
Role:	Co-I

Title:	Prediction of Hypertensive Disorders of Pregnancy Using Vascular Reactivity Index
Funding Agency:	Great Plains IdEA-CTR Center for Heart and Vascular Research
Start and End Dates:	March 1, 2022-February 28, 2023
Total Dollars:	$40,000
Role:	Principal Investigator

Completed (Internal)

Title:	Evaluation of Blood and Placental Biomarkers of Oxidative Stress in Mother-Infant Dyads and Relationships with Carotenoid Levels
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2021-June 30, 2022
Total Dollars:	$40,000
Role:	Co-I

Title:	Omega 3- fatty acid: Potential for mitigation of neurodevelopmental outcomes from in utero opioid exposure in a chronic stress rat model
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2021-June 30, 2022
Total Dollars:	$40,000
Role:	Co-I

Title:	Micronutrient deficiencies, Gut Dysbiosis and Disease Severity in Children with Sickle Cell Disease
Funding Agency:	Child Health Research Institute
Start and End Dates:	July 1, 2021-June 30, 2022
Total Dollars:	$50,000.00
Role:	Co-I

Title:	Precision Nutrition In Cancer Survivors: An Interdisciplinary Team-based Approach
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2021-June 30, 2022
Total Dollars:	$7,500
Role:	PI

Title:	Precision Nutrition to Enhance and Preserve Motor Function in People with

	Parkinson's Disease
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2021-June 30, 2022
Total Dollars:	$7,500
Role:	Co-I

Title:	Healthcare Disparities and Experiences of Stressors in Women During Their Pregnancy Lifecycle
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 1, 2021-June 30, 2022
Total Dollars:	$7,500
Role:	Co-I

Title:	Vitamin D and Physical Function in End-Stage Renal Disease
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 2019-December 2020
Total Dollars:	$20,000.00 (Direct costs: $20,000.00)
Role:	Co-Investigator, Principal investigator, Laura Armas MD

Title:	Determining Microbiota Accessible Carbohydrates in a Human Clinical Intervention Trial and the Link to Dietary Fiber Intake
Funding Agency:	University of Nebraska Food for Health Center
Start and End Dates:	July 2019-December 2020
Total Dollars:	$141,00.00 (Direct costs: $141,000.00)
Role:	Co-Investigator, Principal investigator, Devin Rose PhD

Title:	The Role of Specialized Pro-Resolving lipid Mediators in Placental Tissue and Perinatal Health
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 2019-December 2020
Total Dollars:	$20,000.00 (Direct costs: $20,000.00)
Role:	Co-Investigator, Principal investigator, Maheswari Muhkerjee PhD

Title:	The Role of Omega-3 Fatty Acid-Derived Pro-Resolving Mediators in Maternal-Fetal Health
Funding Agency:	UNMC Child Health Research Institute
Start and End Dates:	June 2019-May 2020
Total Dollars:	$50,000.00 (Direct costs: $50,000.00)
Role:	Co-Investigator, Principal investigator, Ann Anderson-Berry MD PhD

Title:	The Role of Omega-3 Fatty Acid Derived Pro-Resolving Mediators on GPR18 Expression in Placental Tissue
Funding Agency:	UNMC Child Research Health Institute
Start and End Dates:	June 2019-December 2020
Total Dollars:	$10,000.00 (Direct costs: $10,000.00)
Role:	Co-Investigator, Principal investigator, Maranda Thompson

Title:	Effect of Vitamin D Supplementation on Balance in Patients with Chronic Kidney Disease
Funding Agency:	University Committee on Research and Creative Activity
Start and End Dates:	December 2018-December 2019
Total Dollars:	$5,000.00 (Direct costs: $5,000.00)

Role:	Co-Investigator, Principal investigator, Jenna Yentes PhD
Title:	Impact of Obesity on Omega-3 Fatty Acid-Derived Pro-Resolving Mediators in Maternal-Infant Health
Funding Agency:	Nebraska Center for the Prevention of Obesity Diseases, University of Nebraska Lincoln
Start and End Dates:	December 2018-June 2019
Total Dollars:	$32,000.00 (Direct costs: $32,000.00)
Role:	Co-Principal Investigator with Ann Anderson Berry, MD
Title:	Evaluation of Simulation-Based Training in Healthcare Education and its Impact on the Delivery and Quality of Health Care
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 2018-June 2019
Total Dollars:	$13,000.00 (Direct costs: $13,000)
Role:	Co-Investigator, Principal Investigator: Maheswari Muhkerjee, PhD
Title:	Impact of Iron Supplementation on the Gut Microbiome and Necrotizing Enterocolitis in Preterm Neonates
Funding Agency:	University of Nebraska Collaboration Initiative
Start and End Dates:	July 2018-June 2019
Total Dollars:	$19,228.00 (Direct costs: $19,228.00)
Role:	Co-Investigator, Principal Investigator: Tricia LeVan (Corrine Hanson)
Title:	Fiber Intake and the Microbiome in Asthma: the Breathe Easy Trial
Funding Agency:	Center for Patient, Family, and Community Engagement in Chronic Care Management
Start and End Dates:	June 2017-Decemer 2018
Total Dollars:	$37,028.00 (Direct costs: $37,028.00)
Role:	Co-Principal Investigator with Lynne Buchanan, PhD
Title:	Association Between Systemic Inflammation and Nutritional Mediators in Term and Preterm Infants
Funding Agency:	UNMC Center for Clinical and Translational Research
Start and End Dates:	Feb 2018-March 2019
Total Dollars (direct costs):	$25,000.00 (Direct costs: $25,000)
Role:	Co-Investigator; Principal Investigator: Jessica Snowden, MD
Title:	Vitamin A in Maternal-Child Health: The VitaMatCH Project
Funding Agency:	UMNC Vice Chancellor for Research Health Disparities Pilot Grant
Start and End Dates:	November 2016-October 2017
Total Dollars:	$50,000.00 (Direct costs: $50,000.00)
Role:	Principal Investigator
Title:	Following the Growth of Sarah's Baby: Development of an Interprofessional Educational Activity
Funding Agency:	University of Nebraska Medical Center Interprofessional Education Development
Start and End Dates:	January 2016-December 2017;
Total Dollars:	$1,000.00 (Direct costs: $1,000.00)
Role:	Co-Investigator; Principal Investigators: Kim Michael, MA, RT(R) and Tanya

Custer, MS, RT(R)(T)

Title:	Food Deserts, Maternal Malnutrition, and Neonatal Outcomes in Nebraska
Funding Agency:	Nebraska EPSCoR-University of Nebraska Food for Health Initiative
Start and End Dates:	January 2016-December 2017
Total Dollars:	$20,000.00 (Direct costs: $20,000.00)
Role:	Co-Principal Investigator with Ann Anderson-Berry, PhD, MD

Title:	Similarities and Differences in Infant Feeding Practices and Weight of Infants during the First 24 Months
Funding Agency:	Nebraska EPSCoR-University of Nebraska Food for Health Initiative
Start and End Dates:	January 2016-December 2017
Total Dollars:	$20,000.00 (Direct costs: $20,000.00)
Role:	Co-Principal Investigator; Principal Investigator: Jana Pressler, PhD, RN

Title:	Vitamin E Tocopherols, Infant feeding, and Inflammation during NICU Hospitalization
Agency:	Pediatric Research Grant, University of Nebraska Medical Center
Start and End Dates:	April 2014-March 2015
Total Dollars:	$41,520.00 (Direct costs: $41,520.00)
Role:	Co-Principal Investigator with Ann Anderson-Berry, PhD, MD

Title:	Nutrition and Lung Function in COPD
Funding Agency:	University of Nebraska Medical Center, Clinical Research Center
Start and End Dates:	March 1, 2014-February 28, 2016;
Total Dollars:	$129,147.00 (Direct costs: $129,147.00)
Role:	Principal Investigator

Title:	Dynamics of Vitamin D Metabolism in Premature Infants
Funding Agency:	Edna Ittner Foundation
Start and End Dates:	July 2012-July 2014
Total Dollars:	$31,000.00 (Direct costs: $31,000.00)
Role:	Principal Investigator

Title:	Serum 25(OH)D Levels, Supplemental Vitamin D, and Parathyroid Hormone Levels in Premature Infants
Funding Agency:	University of Nebraska Medical Center, Clinical Research Center
Start and End Dates:	July 2012-July 2014
Total Dollars:	$41,873.60 (Direct costs: $41,873.60)
Role:	Principal Investigator

Title:	Response to Supplemental Vitamin D in Formula-Fed, Late Preterm Infants
Funding Agency:	University of Nebraska Medical Center, Clinical Research Center
Start and End Dates:	August 2009-August 2010;
Total Dollars:	$46,813.76 (Direct costs: $46,813.76)
Role:	Principal Investigator

Title:	Assessment of Vitamin D Status of Preterm Infants
Funding Agency:	University of Nebraska Medical Center, Department of Pediatrics
Start and End Dates:	August 2009-August 2010
Total Dollars:	$10,000.00 (Direct costs: $10,000.00)
Role:	Co-Investigator; Principal Investigator: Ann Anderson Berry PhD, MD

STUDY SECTIONS

Agency:	Irish Thoracic Society
Section:	Irish Thoracic Society Annual Grant
Role:	Grant Reviewer
Date:	July 2013

Agency:	Dunhill Medical Trust
Section:	Dunhill Medical Trust
Role:	Grant Reviewer
Date:	March 2015

Agency:	Icelandic Research Fund
Role:	Grant Reviewer
Date:	October 2016

Agency:	Wellcom Trust/India Alliance Fellowship
Role:	Grant Reviewer
Date:	July 2018

PATENTS

OTHER APPOINTMENTS OR POSITIONS

April 1991-June 2010	Medical Nutrition Therapist Specialist Nebraska Medical Center, Omaha, NE
April 1999-Nov. 2005	Nutrition Specialist Visiting Nurse Association, Omaha, NE
June 2001-Oct. 2004	Nutrition Specialist Consultant Odyssey Home Care and Hospice, Omaha, Ne
July 2010-June 2011	Lead Medical Nutrition Therapist Specialist Nebraska Medical Center, Omaha, NE

CONSULTING POSITIONS

Guest Editor/Editorial Board

January 2023-present	Associate Editor	Nutrition Reviews
May 2020-present	Guest Editor, Special Issue: Novel Therapeutic Nutrient Molecules	Biomedicines
February 2014-present	Editorial Board	Journal of Translational Medicine
January 2017-January 2018	Guest Editor, Special Issue: Fat	Journal of Biomedical Research

	Soluble Vitamins in Fetal, Newborn and Child Health	International
July 2018-Present	Guest Editor, Special Issue: Vitamin A and Human Health	Nutrients

Manuscript Reviewer

November 2011-present	Manuscript reviewer	COPD: The Journal of Chronic Obstructive Pulmonary Disease
January 2012-present	Manuscript reviewer	Lung
March 2012-present	Manuscript reviewer	Journal of Neonatal-Perinatal Medicine
June 2012-present	Manuscript reviewer	Journal of Nutrition, Health, and Aging
August 2012-present	Manuscript reviewer	Current Medicinal Chemistry
October 2012-present	Manuscript reviewer	American College of Nutrition
March 2013-present	Manuscript reviewer	Health Education
May 2013-present	Manuscript reviewer	The Lancet
November 2013-present	Manuscript reviewer	North American Journal of Medical Science
December 2013-present	Manuscript reviewer	The Journal for Vitamin and Nutrition Research
February 2014-present	Manuscript reviewer	Nutrients
April 2015-present	Manuscript reviewer	The Journal of Enteral and Parenteral Nutrition
September 2015-present	Manuscript reviewer	Manuscript reviewer for The Journal of the Academy of Nutrition and Dietetics
January 2016-present	Manuscript reviewer	The Journal of Perinatology
May 2016-present	Manuscript reviewer	European Respiratory Journal
August 2016-present	Manuscript reviewer	Respiratory Research
November 2016-present	Manuscript reviewer	American Journal of Respiratory and Critical Care Medicine
February 2017-present	Manuscript reviewer	Journal of Asthma

June 2017-present	Manuscript reviewer	PloSOne
October 2017-present	Manuscript reviewer	British Journal of Nutrition

Other

November 2016	Invited Abstract Reviewer	American Society of Nutrition, Experimental Biology Meeting 2017
May 2017	Poster Session Discussion Facilitator, Obesity and Nutrients in Lung Disease Section	American Thoracic Society Meeting 2017

MILITARY SERVICE

HONORS AND AWARD

International

March 2014	Inaugurated into F1000Prime: Faculty of 1000 *The F1000 Prime faculty comprises peer-nominated, internationally-renowned researchers across biology and medicine who review and recommend articles they consider of greatest interest and merit*
June 2016	European Respiratory Society Silver Scholar Award
February 2017	European Society for Gastroenterology, Hepatology and Nutrition Abstract of Distinction Award
May 2017	Travel Scholar Award, University of Adger, Kristiansand, Norway. $4,500.00

National

June 2012	Academy of Nutrition and Dietetics 2011 Huddleson Award *Presented to the lead author of a peer-reviewed article that made an important contribution to the dietetics profession*
February 2015	American Thoracic Society Meeting Abstract Travel Scholarship Award *Given to the top young investigators presenting an oral or plenary poster presentation at the 2015 American Thoracic Society meeting*
July 2015	Fellow, Academy of Nutrition and Dietetics

University

March 2006	Ancillary Services Medical Staff Appreciation Award

May 2006	The Nebraska Medical Center Quality Award for Improvement in Neonatal Nutrition for the Very Low Birth Weight Infant
October 2011	Selected Representative, American Dietetic Association Futures Practice Summit
May 2013	University of Nebraska Medical Center School of Allied Health Professions Excellence in Research Award
July 2013	M. Patricia and James W. Leuschen Professorship for Advancing Research in the Allied Health Professions
March 2014	Outstanding Professional Achievement Award, University of Nebraska Medical Center, College of Medicine
July 2015	University of Nebraska Medical Center Interprofessional Leadership for Excellence and Academic Development *(iLead)* cohort
August 2016	Inaugural Member, Interprofessional Academy of Educators, University of Nebraska Medical Center
March 2017	UNMC Outstanding Faculty Mentor of Graduate Students Award
April 2018	UNMC Outstanding Mentor of Junior Faculty
March 2019	Significance in Research for Distinguished Faculty Award, College of Allied Health Professions
March 2019	2018 UNMC Distinguished Scientist

MEMBERSHIPS AND OFFICES IN PROFESSIONAL SOCIETIES

October 1990-present	Member	American Dietetic Association/Academy of Nutrition and Dietetics
October 1990-present	Member	Nebraska Dietetic Association
July 2006-present	Member	Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2010-present	Member	Research Ad Hoc Committee. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2011-present	Member	Society of Enteral and Parenteral Nutrition
July 2011-present	Member	American Society of Nutrition
January 2015-	Member	American Thoracic Society

present

July 2017-present	Member	University of Nebraska Food for Health Center
January 2015-present	Chair	Academy of Nutrition and Dietetics Evidence Analysis Library, Chronic Obstructive Pulmonary Disease
July 2013-June 2014	Co-Chair	Professional Development. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2011-June 2012	Co-Chair	Grants and Awards Committee. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2008-June 2009	Co-Chair	Public Relations. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2006-June 2007	Co-Chair	Neonatal Special Interest Group. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2014-June 2015	Chair	Professional Development. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2012-June 2013	Chair	Grants and Awards Committee. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2009-June 2010	Chair	Public Relations. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group
July 2007-June 2008	Chair	Neonatal Special Interest Group. Academy of Nutrition and Dietetics Pediatric Nutrition Practice Group

COMMITTEE ASSIGNMENTS

Committee Assignments within the University of Nebraska

July 2007-July 2009	Co-Chair	Co-Chair, Nutrition NICU Quality Improvement Committee, Nebraska Medicine
July 2011-June 2012	Member	Health Care Reform Committee, School of Allied Health Professionals, University of Nebraska Medical Center
July 2011-present	Member	Medical Nutrition representative, Medical Sciences Interdepartmental Area graduate committee, UNMC
August 2013-May 2014	Member	Search committee: Dean, College of Public Health
September 2013-present	Member	UNMC Faculty Senate

June 2014-July 2015	Member	College of Medicine Higher Learning Commission of the North Central Association of Colleges and Schools Accreditation Committee
August 2015-present	Member	Executive committee, UNMC Faculty Senate
July 2016-June 2017	Secretary	Faculty Senate. UNMC
July 2016-present	Member	College of Allied Health Professions Research Development Committee
September 2016-present	Professional Development Committee	Center for Patient, Family, and Community Engagement in Chronic Care Management (CCCM)
September 2016-2017	Advisory Committee	Research Editorial Office, UNMC
October 2016-present	Member	Interdisciplinary Education Committee, Interdisciplinary Academy of Educators
June 2017-June 2018	President-Elect	UNMC Faculty Senate
July 2017-June 2020	Member	College of Allied Health Professions Promotion and Tenure Advisory Committee
November 2018-June 2019	Member	Search Committee, Director of the Fred & Pamela Buffett Cancer Center and Director of UNMC Eppley Institute
March 2018-present	Member	College of Allied Health Search Committee, Occupational Therapy Program Director
March 2018-present	Member	College of Allied Health Professions Search Committee, Genetics Counseling Program Associate Director
June 2018-May 2019	President	Faculty Senate, UNMC
June 2019-May 2020	Past President	Faculty Senate, UNMC
June 2020-July 2021	Member	College of Allied Health Professions Promotion and Tenure Comittee
July 2021-present	Chair	College of Allied Health Professions Promotion and Tenure Comittee

<u>Committee Assignments for National and International Organizations</u>

July 2022-	Member, Human Science	Coalition for Grain Fiber

June 2012-Dec 2014	Team Member	National Institute of Health: Heart, Lung, and Blood Institute Primary Prevention of Lung Disease
June 2012-Dec 2014	Co-Chair	National Institute of Health: Heart, Lung, and Blood Institute Primary Prevention of Lung Disease-Lung Health Sub Committee
April 2015-October 2017	Co-chair	Committee on Standardized Feeding for Premature Infants, NECZero workgroup, University of Arizona
September 2015-present	Chair	Academy of Nutrition and Dietetics Evidence Analysis Library, Chronic Obstructive Pulmonary Disease
January 2016-present	Chair	UK Biobank Nutrition and Pulmonary Disease Analysis Project
May 2016-present	Member	American Lung Association, Lung Force Expo Planning Committee

PRESENTATIONS

Invited Presentations at International Meetings

1. **Hanson, C.** An Overview of Early Nutrition in the United States. University of Agder Visiting Scientist Research Seminar. Kristiansand, Norway August 2017

2. **Hanson, C.** Fat Soluble Compounds in Maternal Child Health. University of Agder Visiting Scientist Research Seminar. Kristiansand, Norway August 2017

3. **Hanson, C.** Inflammatory Potential of Diet during Pregnancy and Lung Function Outcomes in the Offspring in Mid-Childhood. Preterm Birth International Collaboration meeting, Dubrovink, Croatia, April 2019

4. **Hanson, C.** The Fatter, the Better? Results of a Systematic Analysis of Body Composition on COPD Outcomes. European Respiratory Society, Madrid, Spain, September 2019

5. **Hanson, C.** Provision of Optimal Nutrition to Preterm Infants. Shanghai First Maternity and Infant Hospital, Tongji University School of Medicine, Shanghai, China October 2019.

Invited Presentations at National Meetings

1. **Hanson, C**. Evidence for a Gut-Lung Axis in COPD: The Role of the Microbiome and Dietary Fiber Intake. John Hopkins University BREATHE Center. Baltimore, MD May 2017

2. **Hanson, C.** Diet Quality, Smoking and Lung Function in the UK Biobank. COPD10: The Annual Meeting of the COPD Foundation. Chicago, IL July 2017

3. **Hanson, C.** Retinoids and Carotenoids in Early Life. American Society for Nutrition 2018 Annual Meeting. Boston, MA, June 2018

4. **Hanson, C.** Nutrition in Pulmonary Diseases: Results of a Research Agenda. Johns Hopkins University Research Seminar Series. Baltimore, MD, September 2018.

5. **Hanson, C.** Bench to Bedside: How and Why Dietary N-3 PUFA Intake Mediates the Response to Environmental Exposures. American Thoracic Society meeting, Dallas, TX May 2019

6. **Hanson, C.** Take a Deep Breath: COPD Systemic Review Evidence Analysis Library Update. Academy of Nutrition and Dietetics 2019 Conference and Expo, Philadelphia, PA, October 2019

7. **Hanson, C.** Nutritional Antioxidants During Pregnancy and Lactation: Impact on Newborn Outcomes. National Academy of Sciences, Engineering and Medicine: Nutrition During Pregnancy and Lactation: Exploring New Evidence-A Workshop. Washington D.C., January 2020.

Invited Presentations at Regional Meetings

1. **Hanson, C.** Eat to Breathe: How Nutrition can Affect Your Lungs. American Lung Association Conference and Expo. Omaha, NE October 2015

2. **Hanson, C.** Evidence-Based Nutrition in COPD. American Lung Association Conference and Expo. Omaha, NE October 2016

Invited Presentations within Nebraska for Institutions Outside of UNMC

1. **Hanson, C.** Diet and Vitamin D in Lung Disease Omaha Veterans Affairs Medical Center Research Seminar Series, Omaha, NE. February 2014

2. **Hanson, C.** Dynamics of Vitamin D Metabolites in Premature Infants. Creighton Osteoporosis Research Seminar Series, Creighton University, Omaha Ne. May 2014

3. **Hanson, C.** A Medical Nutrition Research Agenda: Potential for Collaboration? Food Science and Technology Research Seminar Series, University of Nebraska, Lincoln, NE June 2017

Presentations Associated with Refereed Abstracts at International Meetings

1. **Hanson, C.** Dynamics of 24,25-hydroxyvitamin D_3 in Premature Infants During Neonatal Intensive Care Unit Hospitalization. European Society for Clinical Nutrition and Metabolism, Geneva, Switzerland. September 2014

2. **Hanson, C.** Diet Quality and Asthma in Peruvian Children. European Respiratory Society, London, England. September 2016

3. **Hanson, C.** Pro-vitamin A Compounds and Tocopherol Levels in Mother-infant Pairs from Midwest USA and Correlations with Fetal Growth. 16^{th} Fat Soluble Vitamin Conference, French Society of Vitamins and Biofactors, Paris, France. March 2017

4. **Hanson C.** Maternal and Infant Dynamics of Vitamin E Tocopherols. 16^{th} Fat Soluble Vitamin Conference, French Society of Vitamins and Biofactors, Paris, France. March 2017

5. **Hanson, C.** Retinol Status in Mother-Infant Pairs in the USA: Is it a Good Indicator of Vitamin A Sufficiency in Clinical Practice? European Society for Pediatric Gastroenterology, Hepatology, and Nutrition, Prague, Czech Republic. May 2017

6. **Hanson, C.** Omega-3 Fatty Acid Intake of Pregnant Women and Women of Childbearing Age in the United States: Potential for Deficiency? Nutrition and Nurture in Infancy and Childhood, University of Central Lancashire UK. June 2017

7. **Hanson, C.** Interprofessional trailblazers: Outcomes of a Library, Sonography and Nutrition Pilot Program to Initiate Interprofessional Education. Collaborating Across Borders: Exploring New Heights Interprofessional Education Conference, Banff, Alberta, Canada. October 2017.

8. **Hanson, C.** Maternal Lycopene and Lycopene Isoforms are Associated with Infant Growth at Delivery. 5th International Conference on Nutrition and Growth, Paris, France. March 2018

9. **Hanson C**. Proportion of Lutein + Zeaxanthin among the top six carotenoids in maternal dietary intake, maternal serum, umbilical cord blood, and placenta. 6thAnnual Conference on Nutrition and Growth, Valencia, Spain, March 2019.

10. **Hanson C.** Maternal Vitamin D Levels and the Relationship to Neonatal Anthropomorphic Measurements. Nutrition and Growth, London, England, March 2023.

11. **Hanson C.** Omega-6 and Omega-3 Fatty Acid-derived Oxylipins in Placental Tissue and Their Relationship with Neonatal Head Circumference at Delivery. European Society of Pediatric Neurology, Prague, Czechia, June 2023.

<u>Presentations Associated with Refereed Abstracts at National Meetings</u>

1. **Hanson, C.** Intake of Key Nutrients in Midwest Adolescent Females: Vitamin D, Folate, and Polyunsaturated Fatty Acids. Pediatric Academic Society, Boston, MA. May 2012

2. **Hanson, C.** Vitamin D, Vitamin D Binding Protein, And Airflow in COPD. American Thoracic Society, San Diego, CA. May 2012

3. **Hanson, C.** The Relationship Between Dietary Fiber and Lung Function in NHANES. American Thoracic Society, San Diego, CA. May 2015

4. **Hanson C.** Maternal tobacco use affects the relationship between nutritional anti-oxidants and infant inflammation Pediatric Academic Societies Meeting, Baltimore, MD April 2019

5. **Hanson C.** Infant serum nutrient levels are associated with biomarkers of inflammation at the time of delivery. Pediatric Academic Societies Meeting, Baltimore, MD April 2019

6. **Hanson C**. The Association of Dietary Fiber and Cancer Development in Rural Post-menopausal Women of Nebraska. American Society for Nutrition: Nutrition 2021 Conference (held virtually due to COVID-19) *(one of 35 abstracts out of 1100 selected for oral presentation)*

7. Ponce J, Anzalone A, Bailey K, Sayles H, Timmerman T, **Hanson C.** The Impact of Malnutrition on Clinical Outcomes in Patients Diagnosed with COVID-19. American Society of Parenteral and Enteral Nutrition, Seattle, WA, April 2022. *Selected as oral presentation as a Harry M. Vars research award candidate as one of five of the top-scoring, highest quality manuscript submissions*

8. Wharton W, Jackson M, Choi Y, **Hanson C,** Eisenberg E, Liu B, Washko G, Kalhan R, Jacobs D, Bose S. Associations of a Plant Centered Diet and Lung Function Decline Across Early to Mid-adulthood: The Cardia Lung Study. American Thoracic Society, Washington DC, May 2023.

9. Meislen R, Wharton R, Abdurrahman N, Wang A, **Hanson C,** Yun Soung K, Zahi F, Liu B, Hsu L, Bose S. Use of low-touch monitoring of asthma control among high-risk urban pregnant patients. National Institute of Health Workshop on Innovative Approaches to Improve Maternal Health. Bethesda MD, May 2023.

10. Nordgren T, **Hanson C,** Anderson-Berry A. Specialized Pro-resolving Lipid Mediators versus Omega-3 Fatty Acid Supplementation as Precision Medicine Approaches to Protect Against Adverse Pregnancy-associated Conditions. National Institute of Health Workshop on Innovative Approaches to Improve Maternal Health. Bethesda MD, May 2023.

COMMUNITY SERVICE AND OUTREACH

Press Release Outreach

Press release by the American Thoracic Society: **Hanson C**, Sayles H, Rutten E, Wouters E, MacNee W, Calverley P, Meza J, Rennard S. Dietary Intake Is Associated with Lung Function in the Eclipse Cohort**.** American Thoracic Society, San Diego, CA, May 2014

Press Release by the American Thoracic Association: **Hanson C,** Lyden E, Hopkins R, Rutten E, Rennard S, Mannino D, Young R. The Relationship between Dietary Fiber Intake and Lung Function in NHANES *Annals of the American Thoracic Society,* January 2016

Press release by the American Journal of Clinical Nutrition and American Society for Nutrition: Lappe J, McMahon D, Laughlin A, **Hanson C**, Zemel M, Schwartz M, Desmangles JC, Begley M. The Effect of Increasing Dairy Intake of Adolescent Girls on Changes in Weight and Body Fat. *Selected by the Editor-in-Chief of The American Journal of Clinical Nutrition (AJCN) as the Editor's Pick for Volume 105 Issue 5 of the journal*, May 2017

Press release by *Plos One:* Anderson-Berry A, Lyden E, Thoene M, Wagner J, **Hanson, C**. Randomized Trial of Two Doses of Vitamin D Supplementation in Very Low Birth Weight Infants: Dose Impact on Achieving Desired Serum Concentrations in a Hospitalized Population, October 2017

Press release by the *American Journal of Respiratory and Critical Care Medicine*: Brigham E, Woo H, McCormack M, Rice J, Koehler K, Vulcain T, Wu T, Koch A, Sharma S, Koladooz F, Bose S, **Hanson C**, Romero K, Diette G, Hansel N. Omega-3 and Omega-6 Intake Modifies Respiratory Health and Response to Indoor Air Pollution in Children with Asthma. *American Journal of Respiratory and Critical Care Medicine,* April 2019

Press release by *Thorax:* Wang J, Liu B, Kroll F, **Hanson C,** Coca S, Uribarri J, Bose S. Higher dietary intake of advanced glycation end-products (AGEs) is associated with increased respiratory symptoms in children. *Thorax,* December 2020.
Press release by the American Thoracic Society: Eisenberg E, Liu B, Wang G, Choi Y, Jacobs D, Kalhan R, Jackson M, **Hanson C**, Bose S. Association between a Plant Centered Diet and Lung Function Trajectory and Incident Emphysema: Findings from the CARDIA Lung Study. American Thoracic Society, San Francisco CA, May 2022.

Media Exposure

"Diet's Effect on COPD". *Top of Mind with Julie Rose;* BYU radio. January 14, 2016.

"Speaking of NEC: The Importance of Standardized Feeding Protocols in the Prevention of Necrotizing Enterocolitis". *The Morgan Leary Vaughan Fund, Inc*. *Podcast.* January 17, 2016.

"Fiber and Your Lungs" *American Thoracic Society Podcast.* March 1, 2016.

Webinar presentation for Nebraska Cures: Nutrition and Pregnancy-Associated Hypertension. March 15, 2023.

Other

Chosen for inclusion in a 2017 Cochrane review on vitamin D supplementation in preterm neonates for

prevention of vitamin D deficiency: **Hanson C**, Lyden E, Thoene M, Nelson A, Rennard S, Wagner J, Anderson-Berry A. Vitamin D Binding Protein and Free Vitamin D in Premature Infants *Journal of Pediatric and Neonatal Endocrinology* 2015.

Chosen for inclusion in a 2017 Cochrane review on vitamin D supplementation in preterm neonates for prevention of vitamin D deficiency: **Hanson C**, Jones G, Kaufmann M, Lyden E, Armas L, Anderson-Berry A. Vitamin D Metabolism in the Premature Newborn: A Randomized Trial *Clinical Nutrition* 2016.

Chosen to be highlighted in the "Latest Research" section of the American Academy of Allergy, Asthma & Immunology website. Associations of Prenatal Dietary Inflammatory Potential with Childhood Respiratory Outcomes in Project Viva.

PUBLICATIONS

a. Articles published in scholarly journals

1. Moore T, **Hanson C**, Anderson-Berry A. Colonization of the Gastrointestinal Tract in Neonates: A review *The Journal of Infant, Child and Adolescent Nutrition* 2011;3:291-295

2. **Hanson C**, Sundermeier J, Dugick L, Lyden E, Anderson-Berry A. Implementation, Process and Outcomes of Nutrition Best Practices for Infants <1500 grams *Nutrition in Clinical Practice* 2011; 26(5): 614-624

3. **Hanson C**, Armas L, Lyden E, Anderson-Berry A. Vitamin D Status and Associations in Newborn Formula-Fed Infants during Initial Hospitalization *Journal of the American Dietetic Association* 2011;111(12):1836-43.

4. **Hanson C**, Anderson A, Armas L, Lyden E, Rafferty K, Dudley E, Elliott E, Lappe J. Intake of Key Nutrients in Midwest Adolescents of Child-Bearing Potential: Vitamin D, Polyunsaturated Fatty Acids, and Folate *The Journal of Infant, Childhood, and Adolescent Nutrition* 2012 Dec;4(6):355-360

5. **Hanson C**, Thoene M, Wagner J, Collier D, Lecci K, Anderson Berry A. Parenteral Nutrition Additive Shortages: The Short Term, Long Term, and Epigenetic Implications in Premature and Hospitalized Infants *Nutrients* 2012; 7;4(12):1977-88.

6. Gephart S, **Hanson C.** Preventing Necrotizing Enterocolitis with Standardized Feeding Protocols: Not Just Possible but Imperative *Advances in Neonatal Care* 2013; 13(1):48-54

7. Wagner J, **Hanson C**, Anderson-Berry A. Donor Milk for Premature Infants: A Review of Current Evidence *Journal of Infant, Childhood, and Adolescent Nutrition* 2013;5(2); 71-77

8. Berg I*, **Hanson C***, Romberger D, Sayles H, Rennard S. (*These authors contributed equally to the manuscript) Vitamin D, Vitamin D Binding Protein, and Lung Function and Structure in COPD Severity and Phenotype *Respiratory Medicine* 2013;107(10):1578-1588

9. **Hanson C,** Woscyna G, Lyden E, Sommers J, Kvien S, Grandjean A. Nutrition Issues Encountered by Physician Assistants in the State of Nebraska *Journal of Physician Assistant Education* 2013;24(3):6-13

10. **Hanson C,** Rutten E, Wouters E, Rennard S. Diet and Vitamin D as Risk Factors for Lung Disease *Translational Research* 2013;162(4):219-236

11. Thoene M, **Hanson C**, Lyden E, Dugick L, Ruybal L, Anderson-Berry A. Comparison of the Effect of Two Human Milk Fortifiers on Clinical Outcomes in Premature Infants *Nutrients* 2014; 6(1):261-275

12. Saathoff M, **Hanson C**, Anderson-Berry A, Lyden E, Fernandez C. Vitamin D Supplementation Practices in Breastfed Infants in Outpatient Pediatric Clinics *Journal of Infant, Childhood, and Adolescent Nutrition* 2014; 6(2):122 - 126

13. **Hanson C**, Rutten E, Wouters E, Rennard S. Influence of Diet and Obesity on COPD Development and Outcomes *International Journal of Chronic Obstructive Pulmonary Disease* 2014; 9:1-11

14. Camargo C, Budinger S, Escobar G, Hansel N, **Hanson C**, Huffnagle G, Buist, S. Promotion of lung health: NHLBI Workshop on the Primary Prevention of Chronic Lung Diseases *Annuals of the American Thoracic Society* 2014*;* 11(supplement 3): S125-S128.

15. **Hanson C**, Sayles H, Rutten E, Wouters E, MacNee W, Calverley P, Meza J, Rennard S. The Association Between Dietary Intake and the Phenotypical Characteristics of COPD in the ECLIPSE Cohort *Chronic Obstructive Pulmonary Diseases: The Journal of the COPD Foundation* 2014; 1(1):115-124

16. **Hanson C**, Anderson-Berry A, Hoskins S, Lyden E, Bilek L, Dolphens T, Hartman K, Hawkins M, Fernandez C. Vitamin D Status and Associations with Risk Factors for Cardiovascular Disease and Diabetes in Children Enrolled in a Medical Weight Management Program *Journal of Infant, Childhood, and Adolescent Nutrition* 2014; 6 (4):233-239.

17. Breyer MA, Spruit MA, **Hanson** C, Franssen F.M.E, Vanfleteren L, Groenen MTJ, Bruijnzeel PLB, Wouters EFM, Rutten EPA. Prevalence of Metabolic Syndrome in COPD Patients and its Consequences *PloSOne* 2014 June 20;9(6). PubMed ID: 24950070

18. Wagner J, **Hanson C**, Anderson-Berry A. Considerations in Meeting Protein Needs of the Human Milk Fed Preterm Infant. *Advances in Neonatal Care* 2014: 14(4):281-287.

19. Young R, Hopkins R. **Hanson C.** Healthy Diet and Risk of COPD [Letter to the editor] *BMJ* 2015;350:h286

20. **Hanson C,** Lyden E, Nelson A, Thoene M, Wagner J, Wu A, Rennard S, Anderson-Berry A. Response of vitamin D binding protein and free vitamin D concentrations to vitamin D supplementation in hospitalized premature infants. *Journal of Pediatric Endocrinology andl Metabolism* 2015 Sep;28(9-10):1107-14. PubMed PMID: 26030788

21. Rutten EPA, Spruit M, McDonald M, Rennard S, **Hanson C**, Agusti A, Celli B, Miller B, Crim C, Calverley P, Franssen F, Vanfleteren L, Wouters E. Fat-free Mass Decline in Patients with Chronic Obstructive Pulmonary Disease: Fact or Fiction? *European Respiratory Journal* 2015 Nov;46(5); 1496-8. PubMed PMID: 26381518

22. **Hanson C**, Jones G, Kaufmann M, Lyden E, Anderson-Berry A. Dynamics of Vitamin D Metabolism in Maternal-Fetal Dyads. *Journal of Pediatric Gastroenterology and Nutrition* 2016 Mar;62(3):486-90. PubMed PMID: 26513621

23. **Hanson C,** Lyden E, Hopkins R, Rutten E, Rennard S, Mannino D, Young R. The Relationship between Dietary Fiber Intake and Lung Function in NHANES *Annuls American Thoracic Society* 2016 May;13(5):643-50. PubMed PMID: 26783997

24. **Hanson C**, Jones G, Kaufmann M, Lyden E, Armas L, Anderson-Berry A. Vitamin D Metabolism in the Premature Newborn: A Randomized Trial *Clinical Nutrition* 2016 Aug;35(4):835-41PubMed PMID: 26302850

25. **Hanson C,** Lyden E, Furtado J, Campos H, Sparrow D, Vokonas P, Litonjua A. Serum Tocopherol Levels and Vitamin E Intake are Associated with Lung Function in the Normative Aging Study *Clinical Nutrition* 2016: 35(1):169-174 PubMed PMID: 25715694

26. **Hanson C**, Staskiewicz A, Woscyna G, Lyden E, Ritsema T, Scholting P, Norman J, Miller C. The Frequency and Confidence of Health Care Practitioners in Encountering and Addressing Nutrition Related Issues *Journal of Allied Health Professions* 2016:45(1)54-61(8). PubMed PMID: 26937883

27. Joppa P, Tkacova R, Franssen F, **Hanson C**, Rennard S, Silverman E, Donald ML, Calverley P, Spruit M, Kenn K, Wouters EFM, Rutten E. Sarcopenic Obesity, Functional Outcomes, and Systemic Inflammation in Patients with COPD. *Journal of the American Medical Directors Association* 2016 Aug 1;17(8):712-8. PubMed PMID: 27161848

28. Thomas R, **Hanson C**, Lyden E, Woscyna G, Lowes B. Exploring Body Mass Index Changes in Left Ventricular Assist Device Patients. *The VAD Journal*. June 2016;2(13);2-11

29. **Hanson C**, Lyden E, Abresch C, Anderson-Berry A. Serum Retinol Concentrations, Race, and Socioeconomic Status in of Women of Childbearing Age in the United States. *Nutrients* 2016 Aug 19;8(8). PubMed PMID: 27548213

30. **Hanson C,** Lyden E, Furtado J, Anderson-Berry A. A Comparison of Nutritional Antioxidant Content in Breast Milk, Donor Milk, and Infant Formulas. *Nutrients* 2016; Oct 8(11). PMID: 27801820

31. Young RP, RJ Hopkins RJ, **Hanson C**. Connecting Dietary Fiber with Good Lung Health. *Annals American Thoracic Society* 2016;10(13):1869-1870. PubMed PMID: 27726430

32. **Hanson C,** LeVan T. Obesity and COPD: Recent Knowledge and Future Directions. *Current Opinions in Pulmonary Medicine* 2017;23(2):149-153. PubMed PMID: 27906857

33. **Hanson C,** Custer T, Schmidt C, Hartman T, Lyden E, List S, Wampler K, Michael K. Following the Growth of Sarah's Baby: An IPE Activity of Medical Nutrition and Diagnostic Medical Sonography Students. *Journal of Interprofessional Education and Practice* 2017;(7):17-20

34. Lappe J, McMahon D, Laughlin A, **Hanson C**, Zemel M, Schwartz M, Desmangles JC, Begley M. The Effect of Increasing Dairy Intake of Adolescent Girls on Changes in Weight and Body Fat. *American Journal of Clinical Nutrition* 2017;105(5):1046-1053. PubMed PMID: 28298396

35. Yates B, Brugh J, Kuchera A, Kupzyk K, Choquette B, Staskiewicz K, **Hanson C**. Changes in Eating Behavior of Cardiac Rehabilitation Participants. *Journal of Cardiac and Pulmonary Rehabilitation* 2017;1:1

36. Nordgren T, Lyden E, Anderson-Berry A, **Hanson C**. Omega-3 Fatty Acid Intake in United States Women: Potential for Deficiency? *Nutrients* 2017;9(3):1046-1053 PubMed PMID: 28245632

37. Wu R, Anderson-Berry A, **Hanson C**. Vitamin A and Related Compounds in the Prenatal and Postnatal States: a Mother/Neonate-Focused Review. *Journal of Clinical Nutrition and Dietetics* 2017;3(2);1-6

38. **Hanson C,** Lyden E, Weissenburger-Moser L, Furtado J, Romberger D, LeVan T. Serum Level of Nutritional Antioxidants are Decreased in Veteran Smokers with COPD. *Journal of Military and Veterans Health* 2017;25(2):26-34

39. **Hanson C,** Lyden E, Furtado J, Van Ormer M, Schumacher M, Johnson R, McGinn E, Cave C, Rilett K, Weishaar K, Maddipati S, Appeah H, Anderson-Berry A. Vitamin A Status and Clinical Outcomes in

Maternal-Infant Dyads in the Midwestern United States**.** *Annuls Nutrition and Metabolism* 2017;71(3-4):175-182. PubMed PMID: 28942446

40. Dinkel D, **Hanson C**, Koehler K, Anderson-Berry A, Kyvelidou A, Pressler J. An Overview of Assessment Methodolgy for Obesity-Related Variables in Infants at Risk. *Nutrition and Health* 2017;24(1):47-59

41. Elliott E, **Hanson C**, Anderson-Berry A, Nordgren T. Omega-3 Derived Specialized Pro-Resolving Mediators in Maternal-Child Health: A Review. *Prostaglandins Leukotrienes and Essential Fatty Acids* 2017*;*126:98-104. PubMed PMID: 2903403

42. Anderson-Berry A, Lyden E, Thoene M, Wagner J, **Hanson, C**. Randomized Trial of Two Doses of Vitamin D Supplementation in Very Low Birth Weight Infants: Dose Impact on Achieving Desired Serum Concentrations in a Hospitalized Population. *PlosOne* 2017;12(10) DOI.org/10.137/journal.pone.0185950

43. Gephart S, **Hanson C,** Wetzel C, Fleiner M, Umberger E, Martin L, Agrawal A, Marin T, Kirmani K, Quinn M, Quinn H, Dudding K, Clay T, Sauberan J, Porter C, Kijewski A, Wyles C, Ruiz, Reber K, Duchon J. NEC-Zero Recommendations from Scoping Review of Evidence to Prevent and Foster Early Recognition of Necrotizing Enterocolitis. *Maternal Health, Neonatology & Perinatology* 2017;3(23) DOI:10.1186/s40748-017-0062-0

44. **Hanson C**, Lyden E, Furtado J, VanOrmer M, White K, Overby N, Anderson-Berry A. Serum Lycopene Concentrations and Associations with Clinical Outcomes in Maternal-Infant Dyads**.** *Nutrients* 2018;10(2) DOI:10.3390/nu10020204

45. **Hanson C,** Lyden E, Furtado J, Van Ormer M, Johnson R, McGinn E, Cave C, Rilett K, Weishaar K, Maddipati S, Appeah H, Anderson-Berry A. Vitamin E Status and Associations in Maternal-Infant Dyads in the Midwestern United States. *Clinical Nutrition* 2018 DOI: 10.1016/j.clnu.2018.02.003

46. **Hanson C**, Schumacher M, Lyden E, Furtado J, Cammack R, Bereitschaft B, Su D, VanOrmer M, McGinn E, Rilett K, Cave C, Johnson R, Weishaar K, Anderson-Berry A. Fat Soluble Vitamins and Health Disparities in a Maternal-Infant Cohort. *Journal of Nutritional Science* 2018;7(14):1-8

47. Su D, Samson K, Garg A, **Hanson C,** Anderson-Berry A, Lin G, Ming Q. Birth History as a Predictor of Adverse Birth Outcomes: Evidence from State Vital Statistics Data. *Preventative Medicine Reports* 2018;11:63-68

48. Yates B, Hernandez-Vasquez M, Rowland S, Schumacher K, Bainton D, Schulz P, **Hanson C**. A Qualitative Study of Participants' Experiences in Cardiac Rehabilitation. *Journal of Cardiopulmonary Rehabilitation and Prevention* 2018;38:E6-E9

49. **Hanson C,** Lyden E, Anderson-Berry A, Kocmich N, Rezac A, Delair S, Furtado J, Van Ormer M, Obaro S. Status of retinoids and carotenoids and associations with clinical outcomes in maternal-infant pairs in Nigeria. *Nutrients* 2018, 10, 1286; doi:10.3390/nu10091286

50. Cave C, **Hanson C,** Lyden E, Delair S, Obaro S, Anderson-Berry A. A Comparison of Vitamin E Status and Associated Pregnancy Outcomes in Maternal-Infant Dyads between a Nigerian and a United States Population. *Nutrients* 2018, 10(9), 1300; https://doi.org/10.3390/nu10091300

51. Kvien Jensen S, Yates B, Lyden E, Stanek Krogstrand K, **Hanson C.** Dietary Micronutrient Intake of Participants in a "Partners Together in Health" Cardiac Rehab Intervention. *Journal of Cardiopulmonary Rehabilitation and Prevention* 2018;00:1-6

52. Nordgren T, Anderson-Berry A, VanOrmer M, Zoucha S, Elliott E, Johnson R, McGinn E, Cave C, Rilett K, Weishaar K, Maddipati S, Appeah H, **Hanson C.** Omega-3 fatty acid supplementation, pro-resolving mediators, and clinical outcomes in maternal-infant pairs. *Nutrients* 2018; 11(98); doi:10.3390/nu11010098

53. Thoene M, Anderson-Berry A, Van Ormer M, Furtado J, Soliman G, Goldner W, **Hanson C**. Quantification of Lutein + Zeaxanthin presence in human placenta and correlations with blood levels and maternal dietary intake. *Nutrients* 2019; 11(134); doi:10.3390/nu11010134

54. Thompson M, Hein N, **Hanson C,** Smith L, Anderson-Berry A, Richter C, Stessy Bisseou K, Adams KA, Kris-Etherton P, Skulas-Ray A, Nordgren T. Omega-3 fatty acid intake by age, gender and pregnancy status in the United States: National Health and Nutrition Examination Survey 2003-2014. *Nutrients* 2019; 11(177); doi:10.3390/nu11010177.

55. Cornell K, Morshed A, Lyden E, Wood L, LeVan T, Nordgren T, Bailey K, **Hanson C**. Saturated fat intake is associated with lung function in individuals with airflow obstruction: results from NHANES 2007-2012. *Nutrients* 2019; 11(317); doi:10.3390/nu11020317

56. Brigham E, Woo H, McCormack M, Rice J, Koehler K, Vulcain T, Wu T, Koch A, Sharma S, Koladooz F, Bose S, **Hanson C**, Romero K, Diette G, Hansel N. Omega-3 and Omega-6 Intake Modifies Respiratory Health and Response to Indoor Air Pollution in Children with Asthma. *American Journal of Respiratory and Critical Care Medicine* 2019; doi: 10.1164/rccm.201808-1474OC

57. Richter C, Stessy Bisseou R, Norgren T, **Hanson C**, Smith L, Adams KA, Hein N, Kris- Etherton P, Anderson-Berry A, Skulas-Ray A. Docosapentaenoic acid (DPA) intake compared to other long-chain n-3 fatty acids and relationship to plasm fatty acid concentrations in the United States: NHANES 2003-2014. *Lipids* 2019; 54: 221–230 DOI 10.1002/lipd.12146.

58. Knoell D, Smith D, Sapkota M, Heires A, **Hanson C**, Poole J, Wyatt T, Romberger D. Insufficient zinc exposure enhances airway inflammation in response to agricultural organic dust exposure. *Journal of Nutritional Biochemistry* 2019;70:56-64..

59. Lemoine C, Brigham E, Woo H, **Hanson C,** McCormack M, Koch A, Purcha N, Hansel N. Omega-3 fatty acid intake and prevalent respiratory symptoms among U.S. adults with COPD. *BMC Pulmonary Medicine* 2019; 19:97 doi: 10.1186/s12890-019-0852-4

60. Ulu A, Sahoo P, Yuil-Valdez A, Mukherjee M, VanOrmer M, Muthruaj P, Thompson M, Anderson-Berry A, **Hanson C,** Natarajan S, Nordgren T. Omega-3 fatty acid-derived resolvin D2 regulated human placental vascular smooth muscle and extravillous trophoblast activities. *International Journal of Medical Science* 2019, 20, 4402 doi:10.3390/ijms20184402 www.mdpi.com/journal/

61. Snyder K, **Hanson C**, Hill ., Dinkel D. Breasts & Burpees: Perceptions of Physical Activity While Breastfeeding Using the Self-Determination Theory. *Journal of Women's Health and Physical* Therapy doi:10.1097/JWH.0000000000000146

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b. Articles accepted for publication in scholarly journals

c. Articles submitted for publication in scholarly journals

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d. Books published

e. Chapters in books

1. **Hanson C**, Thoene M, Wagner J, Anderson-Berry A. Parenteral Nutrition Additive Shortages: The Short-Term, Long-Term and Potential Epigenetic Implications in Premature and Hospitalized Infants. In: *Clinical and Translational Nutrition: The Interface between Metabolism, Diet, and Disease*. 1st ed. New York, NY: Apple Academic Press, Taylor & Francis. 2014

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f. Books or journals edited

1. Guest Editor, Special Issue: Fat Soluble Vitamins in Fetal, Newborn and Child Health *Journal of Biomedical Research International*, January 2017-January 2018

2. Guest Editor, Special Issue: Vitamin A and Human Health *Nutrients*, July 2018-June 2019

g. Conference Papers and Abstracts

Conference Papers

1. Tsai Chun-Hua, Thoene M, VanOrmer M, **Hanson C,** Anderson-Berry A. Generating Personalized Nutrition Recommendations with GPT-Powered AI Chatbot. Conference Paper, *Information Systems for Crisis Response and Management Conference,* May 2023, Omaha, NE.

Conference Abstracts

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2. **Hanson C**, Armas A, Lyden E, Anderson-Berry A. Prevalence and Associated Findings of Vitamin D Deficiency in Late Preterm Infants at Birth. Pediatric Academic Society Denver, Colorado, May 2011

3. Anderson Berry A, **Hanson C**, Lyden E, Sundermeier J, Dugick L. Implementation, Process and Outcomes of Nutrition Best Practices for Infants Less Than 1500 Grams American Academy of Pediatrics, Boston, Massachuttes, Oct. 2011

4. Dudley E, **Hanson C**, Anderson-Berry A, Lyden E, Armas L, Rafferty K, Lappe J. Folate Intake Over Time in Adolescents of Childbearing Age Pediatric Academic Society, Boston, Massachuttes, May 2012

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13. **Hanson C**, Sayles H, Rutten E, Wouters E, MacNee W, Calverley P, Meza J, Rennard S. Dietary Intake Is Associated With Lung Function In The Eclipse Cohort**.** American Thoracic Society, San Diego, California, May 2014

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36. **Hanson C**, Thoene M, Lyden E, Furtado J, Dugick L, Van Ormer M, Hageman C, Elliott E, Anderson Berry A. Serum Concentrations and Ratios of Alpha and Gamma Tocopherol in Newborn, Hospitalized Infants**.** European Society of Pediatric Gastroenterology and Nutrition Congress, Athens, Greece May 2016

37. Anderson Berry A, Thoene M, Lyden E, Furtado J, Dugick L, Van Ormer M, Hageman C, Elliott E, **Hanson C**. The Impact of Maternal Intake of Sources of Vitamin A for the Newborn. European Society of Pediatric Gastroenterology and Nutrition Congress, Athens, Greece May 2016

38. **Hanson C**, Thoene M, Lyden E, Furtado J, Dugick L, Van Ormer M, Hageman C, Elliott E, Anderson Berry A. Maternal-Fetal Dynamics of Vitamin A Compounds. Pediatric Academic Society, Baltimore, Maryland, May 2016

39. Anderson Berry A, Thoene M, Lyden E, Furtado J, Dugick L, Van Ormer M, Hageman C, Elliott E, **Hanson C**. Maternal and Fetal Dynamics of Vitamin E Tocopherols. Pediatric Academic Society, Baltimore, MD, May 2016

40. Anderson Berry A, Thoene M, Lyden E, Furtado J, Dugick L, Van Ormer M, Hageman C, Elliott E, **Hanson C**. Nutritional Antioxidant Composition of Donor Milk. European Society of Pediatric Gastroenterology and Nutrition Congress, Athens, Greece May 2016

41. Thomas R, Lowes B, Lyden L, **Hanson C**. Exploring BMI Changes in LVAD Patients. National Organization of Transplant Professionals NATCO meeting, Orlando, Florida, July 2016

42. **Hanson, C**, Lyden, E, Schwartz, M, Pfeiffer, H, Laughlin, A, & Lappe, J. Diet Quality of Adolescent Girls in Relation to Breast Cancer Risk. 27th Annual Sigma Theta Tau/Iota Tau Research Day, Creighton University, Omaha, Nebraska**,** May 2016

43. **Hanson C**, Sayles H, Bowler R. Vitamin E Supplementation Use and Pulmonary Outcomes in COPDGene. European Respiratory Society Congress, London, England May 2016

44. **Hanson C**, Sayles H, Nordgren T, Bowler R. Fish Intake and Pulmonary Outcomes in COPDGene. European Respiratory Society Congress, London, England May 2016

45. Tarazona-Meza C, Romero K, Pollard S, Galvez-Davila R, Rojas C, **Hanson C**, Hansel N, Checkley W. Diet Quality and Asthma in Peruvian Children. European Respiratory Society Congress, London, England May 2016

46. Custer T, Michael K, **Hanson C**, Hartman T, Schmidt C, List S, Wampler K. Following the Growth of Sarah's Baby: An IPE Activity of Medical Nutrition and Diagnostic Medical Sonography Students. Association of Schools of Allied Health Professions Annual Conference, New Orleans, Louisiana, October 2016

47. Nordgren T, Zoucha S, Anderson-Berry A, Van Ormer M, Johnson R, McGinn E, Cave C, Rilett K, Weishaar K, Maddipati S, Appeah H, **Hanson C**. Expression of omega-3 fatty acid-derived mediator Resolvin D2 is elevated in maternal serum during at-risk pregnancies. American Society for Parenteral and Enteral Nutrition, Clinical Nutrition Week. Orlando, Florida, February 2017

48. **Hanson C,** Lyden E, Furtado J, VanOrmer M, Schumacher M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A. Pro-vitamin A Compounds and Tocopherol Levels in Mother-infant Pairs from Midwest USA and Correlations with Fetal Growth. 16th Fat Soluble Vitamins Conference, Paris, France, March 21-23, 2017

49. **Hanson C,** Lyden E, Furtado J, VanOrmer M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A Maternal and Infant Dynamics of Vitamin E Tocopherols. 16th Fat Soluble Vitamins Conference, Paris, France, March 21-23, 2017

50. Yates B, Hanson C, Brugh J, Kuchera A, Kupzyk K, Choquette B, & Staskiewicz K. Changes over time in eating behavior of cardiac patients and spouses. 41st Annual Midwest Nursing Research Society Conference, Minneapolis, Minnesota, April 2017

51. Triplett L, **Hanson C,** Armas L. Calcium and Vitamin D Intake in Type 1 Diabetics and Impact on Bone Health. World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases. Florence, Italy. March 2017

52. **Hanson C**, Lyden E, Furtado J, VanOrmer M, Schumacher M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A. Maternal Lutein Levels and Correlations with Infant Clinical Outcomes Pediatric Academic Societies Meeting, San Francisco, California, May 2017

53. **Hanson C**, Lyden E, Furtado J, VanOrmer M, Schumacher M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A. Maternal Lycopene Levels and Correlations with Fetal Growth Pediatric Academic Societies Meeting, San Francisco, California, May 2017

54. Nordgren T, Lyden E, Anderson-Berry A, **Hanson C**. Omega-3 Fatty Acid Intake of Pregnant Women and Women of Childbearing Age in the United States: Potential for Deficiency? Nutrition and Nurture in Infancy and Childhood: Biocultural Perspectives. Grange-over-Sands, Cumbria, United Kingdom, June 2017

55. **Hanson C**, Lyden E, Furtado J, VanOrmer M, Schumacher M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A. Retinol status in mother-infant pairs from Midwest USA and correlations with infant clinical outcomes. San Francisco, California, May 2017

56. **Hanson C**, Lyden E, Furtado J, VanOrmer M, Schumacher M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A. Vitamin A Compounds and Tocopherol Levels in Mother-infant Pairs and Correlations with Maternal Preeclampsia and Mode of Delivery. European Society of Pediatric Gastroenterology and Nutrition Congress, Prague, Czech Republic, May 2017

57. **Hanson C**, Lyden E, Furtado J, VanOrmer M, Schumacher M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A. Pro-vitamin A Compounds and Tocopherol Levels in Mother-infant Pairs and Correlations with Newborn Respiratory Distress Syndrome. European Society of Pediatric Gastroenterology and Nutrition Congress, Prague, Czech Republic, May 2017

58. **Hanson C**, Lyden E, Furtado J, VanOrmer M, Schumacher M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A. Retinol status in mother-infant pairs from Midwest USA: Is it a good indicator of vitamin A sufficiency in clinical practice? European Society of Pediatric Gastroenterology and Nutrition Congress, Prague, Czech Republic, May 2017

59. **Hanson C**, Lyden E, Furtado J, VanOrmer M, Schumacher M, McGinn E, Weishaar K, Cave C, Johnson R, Anderson Berry A. Levels of Pro-vitamin A Compounds and Tocopherol in Mother-infant Pairs from Midwest USA and Correlations with Fetal Growth. European Society of Pediatric Gastroenterology and Nutrition Congress, Prague, Czech Republic, May 2017

60. Anderson-Berry A, **Hanson C,** Samson K, Su D. State Population Based Changes in Preterm Delivery - Impact of Efforts to Enforce Recommendations to Eliminate Early Elective Deliveries. American Academy of Pediatrics National Conference, Chicago Illinois, September, 2017

61. Becker C, Lyden E, Robertson B, Woscyna G, **Hanson C**. Malnutrition Coding Practices in a Midwestern Academic Medical Center. Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, Chicago, Illinois, October 2017

62. Carpenter S, Woscyna G, Thomas R, Anderson-Berry A, **Hanson C**. Proportion of Heart Failure Patients who Meet Criteria for Malnutrition upon Hospital Admission Based on ASPEN Guidelines. Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, Chicago, Illinois, October 2017

63. Jardon R, Paseka J, Woscyna G, **Hanson C**. An Exploration of the Effects of PEG Tube Placement on Weight Loss in Patients with ALS. Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, Chicago, Illinois, October 2017

64. Jensen S, Yates B, Lyden E, **Hanson C**. Micronutrient Intake of Participants in a Partners Together in Health" Cardiac Rehab Intervention. Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, Chicago, Illinois, October 2017

65. McLarney M, Lyden E, Anderson-Berry A, Woscyna G, **Hanson C**. Registered Dietitians Improve LDL, BMI, A1C, Adherence as Diabetes Case Managers. Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, Chicago, Illinois, October 2017

66. McLarney M, Timmerman M, Woscyna G, **Hanson C**. Registered Dietitians Facilitate Diabetes Training and Care within a Patient Centered Medical Home Care Delivery Model. Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, Chicago, Illinois, October 2017

67. **Hanson C**, Custer T, Michael K, Hartman T, Lyden E, Schmidt C, List S, Wampler K. Interprofessional trailblazers: Outcomes of a Library, Sonography and Nutrition Pilot Program to Initiate Interprofessional Education. Collaborating Across Borders: Exploring New Heights Interprofessional Education Conference. Banff, Alberta, Canada, October 2017

68. Pralle D, Bice B, Hanson C. Comparison of growth in pediatric patients with Cystic Fibrosis before and after implementation of a nutrition-based follow-up protocol. North American Cystic Fibrosis Conference. Indianapolis, Indiana. November 2017

69. Anderson-Berry A, Su D, VanOrmer M, Schumacher M, Lyden E, **Hanson C.** Maternal and Neonatal Retinol Status in a Midwest Academic Medical Center is Associated with Race and Food Security Index. Midwest Society for Pediatric Research, Chicago, Illinois, October 2017

70. Nabower A, Meilak K, DelCore A, Lyden E, Hawkins MJ, **Hanson C**, Fernandez C. The effect of early antibiotic exposure on weight status at 2 and 5 years. Obesity Week, Washington D.C. October 2017

71. **Hanson C**, Schumacher M, Lyden E, Su D, Furtado J, Cammack R, Bereitschaft B, Van Ormer M, Needelman H, Anderson-Berry A. Health Disparities and Serum Levels of Nutritional Antioxidants at Birth. Pediatric Academic Society, Toronto, Ontario, May 2018

72. **Hanson C**, Groenen M, Rutten E, Franssen F, Vanfleteren L, Wouters E, Spruit M. Diet Patterns, Lung Function, and Smoking in the UK Biobank Cohort. European Respiratory Society Meeting, Paris, France, September 2018

73. **Hanson C**, Lyden E, Furtado J, Van Ormer M, White K, Overby N, Anderson-Berry A. Maternal Serum Lycopene and Lycopene Isoforms are Associated with Infant Growth at Delivery. 5th International Conference on Nutrition and Growth, Paris, France, March 2018

74. Cornell K, Lyden E, Alam M, Wood L, **Hanson C**. The Relationship between Dietary Intake of Saturated Fatty Acids and Lung Function in the National Health and Nutrition Examination Surveys. American Thoracic Society, San Diego, California, May 2018

75. Knoell D, Smith, Sapkota, Heires A, Poole J, Wyatt T, **Hanson C**, Romberger D. Insufficient zinc intake enhances lung inflammation in response to organic dust exposure. American Thoracic Society, San Diego, California, May 2018

76. Brigham EP, McCormack M, Woo H, Rice J, Koehler K, Vulcain T, Koch A, **Hanson C**, Sharma G, Kohladooz F, Romero K, Diette G, Bose S, Hansel N. Omega-3 and Omega-6 Fatty Acid Intake Modifies Response to Indoor Air Pollution in Children with Asthma. American Thoracic Society, San Diego, California, May 2018

77. Rice J, Brigham E, Woo H, Koehler K, **Hanson C**, Sharma G, Kohladooz F, McCormack M, Diette G, Hansel N. Adherence to a Mediterranean diet attenuates the adverse effect of indoor particulate matter on asthma symptoms in children. American Thoracic Society, San Diego, California, May 2018

78. Lemoine C, Woo H, Romero K, Brigham E, McCormack M, Diettte G, **Hanson C**, Fawzy A, Putcha N, Hansel N. Association of omega-3 and omega-6 fatty acids intake in inflammation and respiratory outcomes in patients with COPD. American Thoracic Society, San Diego, California, May 2018

79. Yuil-Valdes A, Muhkerjee M, Nordgren T, **Hanson C**, Berry E, Anderson-Berry A. GRP expression and distribution in human placenta. Experimental Biology, San Diego, California, April 2018

80. Yuil-Valdes A, Muhkerjee M, Nordgren T, **Hanson C**, Berry E, Anderson-Berry A. GRP expression in placental smooth muscle cells. Pediatric Academic Society, Toronto, Ontario, May 2018

81. **Hanson C,** Anderson-Berry A, Lyden E, Obaro S, Delair S. Serum vitamin E tocopherols are associated with mode of delivery in Nigerian women. Pediatric Academic Society, Toronto, Ontario, May 2018

82. **Hanson C,** Anderson-Berry A, Lyden E, Obaro S, Delair S Maternal Vitamin D Status and Head Covering are Associated with Infant Z-scores at Birth in a Population of Nigerian Women. Pediatric Academic Society, Toronto, Ontario, May 2018

83. Brigham E, **Hanson C**, Schweitzer A, Oh S, Thaxton S, Wineke J, LeVan T, Quiros-Alcal l, McCormack M**.** Diet, the Microbiome, and Asthma: The BREATHE-Easy Trial Protocol. Association for Clinical and Translational Science meeting, Washington DC, April 2018

84. Anderson-Berry A, **Hanson C,** Kocmich N, Rezac A, Obaro S, Delair S. Fat Soluble Vitamin Carotenoid Status in Nigerian Mothers and Newborns Associates with Socioeconomic Status. Pediatric Academic Society, Toronto, Ontario, May 2018

85. Cave C, **Hanson C,** Anderson-Berry A, Lyden E, Kocmich N, Rezac A, Delair S, Obaro S. Serum concentrations of retinol and pro-vitamin A carotenoids in Nigerian vs. United States pregnant women. American Society for Nutrition, Boston, Massachusetts, June 2018

86. Cave C, **Hanson C,** Anderson-Berry A, Lyden E, Kocmich N, Rezac A, Delair S, Obaro S. Serum concentrations of vitamin E tocopherols in Nigerian vs. United States pregnant women. American Society for Nutrition, Boston, Massachusetts, June 2018

87. Thompson M, **Hanson C,** Nordgren T, Anderson-Berry A, Lyden E, Kocmich N, Rezac A, Delair S, Obaro S. Specialized Pro-Resolving Mediators in United States and Nigerian Pregnant Women. American Society for Nutrition, Boston Massachusetts, June 2018

88. Delair S, **Hanson C,** Lyden E, Kocmich N, Rezac A, Obaro S. Maternal Vitamin D Status is associated with increased risk of Neonatal Sepsis in a Cohort of Nigerian Women. American Society for Nutrition, Boston, Massachusetts, June 2018

89. Skulas-Ray A, Richter C, Nordgren T, Lyden E, Smith S, Bisselou K, Appiah A, Hein N, Anderson-Berry A, Kris-Etherton P, **Hanson C**. Docosapentaenoic acid (DPA) intake in the United States and relationship to serum n-3 fatty acid concentrations: NHANES 2003-2014. International Society for the Study of Fatty Acids and Lipids, Las Vegas, Nevada, May 2018

90. Manker B, Anderson-Berry A, **Hanson C**. Gestational length and birthweight are affected by maternal Omega-3 and Omega-6 intake. Global Health Conference Midwest, Omaha Nebraska, February 2018

91. **Hanson C,** Richter C, Nordgren T, Smith S, Bisselou K, Appiah A, Hein N, Anderson-Berry A, Kris-Etherton P, Skulas-Ray A. Intake of fish and omega-3 fatty acid in pregnant vs. non-pregnant US women: NHANES 2003-2014. Academy of Nutrition and Dietetics Food and Nutrition Expo, Washington, D.C., October 2018

92. Thiemann R, **Hanson C,** Waltman N, Bilek L, Lappe J, Smith K, Poole J, Woscyna G, Timmerman M. Omega-3 fatty acid intake and asthma in post-menopausal women. Academy of Nutrition and Dietetics Food and Nutrition Expo, Washington, D.C., October 2018

93. **Hanson C,** Lyden E, Weissenburger-Moser L, LeVan T, Romberger D. Protein Intake is Associated with Lung Function in Veterans with COPD. Midwest Rural Agricultural Safety and Health Conference, Council Bluffs, Iowa, November 2018

94. Dinkel D, Hein N, Snyder K, Siahpush M, Maloney S, Smith L, Paraskevi L, **Hanson C**. The impact of weight and sociodemographic factors on physical activity and sedentary behaviors of mothers with young children: A cross-sectional examination. Society of Behavioral Medicine, Washington, DC, March 2019.

95. Thoene M, **Hanson C,** Lyden E, VanOrmer M, Anderson Berry A. Proportion of Lutein + Zeaxanthin among the top six carotenoids in maternal dietary intake, maternal serum, umbilical cord blood, and placenta. 6thAnnual Conference on Nutrition and Growth, Valencia, Spain, March 2019.

96. Lemoine Soto C, Brigham E, Woo H, **Hanson C,** McCormack M, Koch A, Putcha N, Hansel N. Omega-3 fatty acid intake and respiratory symptoms among U.S. adults. American Thoracic Society, Dallas, Texas, May 2019.

97. Saeed A, Morshed A, Lyden E, **Hanson C,** LeVan T. Protective effect of dietary fiber on inflammation and lung Function in the adult NHANES population. American Thoracic Society, Dallas, Texas, May 2019

98. Thoene M, Anderson-Berry A, Furtado J, Van Ormer M, **Hanson C**. Maternal and social and demographic factors influence placental concentrations of lutein+zeaxanthin. European Society of Pediatric Gastroenterology, Hepatology, and Nutrition, Glasgow, Scotland June 2019

99. Van Ormer M, **Hanson C,** Furtado J, Anderson-Berry Ann. Maternal and cord serum carotenoid levels and their impact on neonatal hearing screen results. European Society of Pediatric Gastroenterology, Hepatology, and Nutrition, Glasgow, Scotland June 2019

100.Snowden J, Anderson-Berry A, Furtado J, Van Ormer M, **Hanson C**. Maternal serum nutrient levels are associated with biomarkers of inflammation at the time of delivery. European Society of Pediatric Gastroenterology, Hepatology, and Nutrition, Glasgow, Scotland June 2019

101. Connolly M, **Hanson C**, White K, Lyden E, Mattson K, Fernandez C. Utilizing the 6-minute walk test to assess weight management interventions for obese children. Pediatric Academic Societies Meeting, Baltimore, Maryland, April 2019

102. Snowden J, **Hanson C**, Furtado J, Van Ormer M, Anderson-Berry A. Maternal tobacco use affects the relationship between nutritional anti-oxidants and infant inflammation Pediatric Academic Societies Meeting, Baltimore, Maryland, April 2019

103. Snowden J, **Hanson C**, Furtado J, Van Ormer M, Anderson-Berry A. Infant serum nutrient levels are

associated with biomarkers of inflammation at the time of delivery. Pediatric Academic Societies Meeting, Baltimore, Maryland, April 2019

104. Brooks D, **Hanson C**,Lyden E, Theone M, Van Ormer M, Furtado J, Anderson-Berry A. Is maternal and cord serum deficiency of vitamins A, E and D at delivery a risk for adverse perinatal outcomes in mother-infant dyads? Pediatric Academic Societies Meeting, Baltimore, Maryland, April 2019

105. Thoene M, Anderson-Berry A, Furtado J, Goldner W, Soliman G, Van Ormer M, **Hanson C.** Maternal to Infant Transfer Rate of Combined Lutein + Zeaxanthin According to Maternal Dietary Intake**.** Pediatric Academic Societies Meeting, Baltimore, Maryland, April 2019

106. Evans S, **Hanson C**, Khandalvala B, Timmerman M, Geske J. Effects of month-long Interprofessional nutrition rotation on medical student Interprofessional attitudes. Society of Teachers of Family Medicine Medical Student Education Conference, Jacksonville, Florida, February 2019

107. Wang J, Liu B, Kroll F, **Hanson C,** Uribarri J, Coca S, Bose S. Higher dietary intake of advanced glycation end-products is associated with increased respiratory symptoms in the National Health and Nutritional Survey (NHANES) pediatric population. American Thoracic Society, Philadelphia, Pennsylvania, May 2019

108. Yuil-Valdez A, Mukherjee M, Hein A, Cox J, Santiago Pintado A, Molani M, Talmon G, Hanson C, Lyden E, Nordgren T, Akhter A, Anderson-Berry A. Preliminary findings of QuPath digital immunohistochemical analysis of placental tissue. Digital Pathology Association Visions 2019, Orlando, Fl, October 2019

109. Morozov A, VanOrmer M, Thoene M, Switchenko N, Kibaru E, **Hanson C,** Anderson-Berry A. Growth Assessment of Infants Admitted to a Government Hospital Newborn Unit in Nakuru, Kenya. Western Society for Pediatric Research, Carmel, California, January 2020.

110. **Hanson C,** Thompson M, VanORmer M, Thoene M, Enmeier M, Freeman A, Morozov A, Anderson-Berry A. Correlation of maternal serum tocopherol levels and placental weight with infant growth outcomes. Nutrition and Growth, London, England, March 2020.

111. Freeman A, **Hanson C,** VanOrmer M, Thompson M, Thoene M, Enmeier M, Evans P, Morozov A, Anderson-Berry A. Associations between maternal tocopherol levels and pregnancy-induced blood pressure changes. American Society for Nutrition, Seattle, Washinton May 2020.

112. Morozov A, VanOrmer M, Thoene M, Switchenko N, Kibaru E, **Hanson C,** Anderson-Berry A. Growth Assessment of Infants Admitted to a Government Hospital Newborn Unit in Nakuru, Kenya. Nutrition and Growth, London, England, March 2020.

113. Thoene M, VanOrmer M, Thompson M, **Hanson C,** Anderson-Berry A. Impact of Maternal Pre-pregnancy Body Mass Size on Placental Weight & Infant Growth Measures. Pediatric Academic Society, Philadelphia, PA, May 2020.

114. Thoene M, Thompson M, VanOrmer M, Furtado J, **Hanson C,** Anderson-Berry A. Proportion of Tocopherol Isoforms within Maternal Serum, Umbilical Cord Blood, and Placenta and Transfer Dynamics between Mother and Infant. Pediatric Academic Society, Philadelphia, PA, May 2020.

115. Thoene M, Morozov A, VanOermer M, Kibaru E, **Hanson C**, Anderson Berry A, Switchenko N. Malnutrition and Growth Assessment of Infants Admitted to a Government Hospital Newborn Unit in Nakuru, Kenya. Midwest Global Health Conference, Omaha, NE, February 2020.

116. Haskett H, Thoene M, Thompson M, Van Ormer M, Furtado J, **Hanson C,** Anderson Berry A. Effect of

Maternal Retinol Insufficiency or Deficiency at Time of Delivery on Intrauterine Transfer Rate and Neonatal Retinol Status. Pediatric Academic Society, Philadelphia, PA, May 2020.

117. Thompson M**,** Jackson KH, Harris WS, Thoene M, Natarajan SK, Yuil-Valdes AG, Mukherjee M, Van Ormer M, **Hanson CK**, Nordgren TM, Anderson Berry A. Impact of Obesity on Omega-3 Fatty Acid Concentration. Pediatric Academic Society, Philadelphia, PA, May 2020.

118. VanOrmer M, Thoene M, Riethoven JJ, LeVan T, **Hanson C**, Anderson-Berry A. Gastrointestinal Microbiome Diversity in Very-Premature Infants Before and After Initiation of Enteral Iron Supplementation in the NICU Setting. Pediatric Academic Society, Philadelphia, PA, May 2020.

119. VanOrmer M, Thoene M, Riethoven JJ, LeVan T, **Hanson C**, Anderson-Berry A. Quantifying Change in Gastrointestinal Inflammation After Initiation of Routine Iron Supplementation in Very Premature Infants. Pediatric Academic Society, Philadelphia, PA, May 2020.

120. Bruett T, **Hanson C,** Anderson-Berry A, Nordgren T, Natarajan S. Environmental Particulate Matter Exposure to Placental Trophoblast cells. Society for the Study of Reproduction, Ottowa, Canada, July 2020.

121. Brand S, Dougherty M, Lappe J, Bilek L, Waltman N, **Hanson C.** The Association between Vitamin A and Related Carotenoid Intake and Bone Related Outcomes in Post-Menopausal Women. Food and Nutrition Conference and Expo, Indianapolis, Indianan, October 2020.

122. Johnson J, Dougherty M, Kraay R, Timmerman M, **Hanson C.** The Effect of Bariatric Surgery and Non-Surgical Weight Loss in Pre- and Post-Kidney Transplant Patients. Food and Nutrition Conference and Expo, Indianapolis, Indianan, October 2020.

123. Wess L, Dougherty M, Paseka J, Timmerman M, **Hanson C.** The Relationship Between Vitamin Intake and Disease Severity in Patients with Parkinson's Disease. Food and Nutrition Conference and Expo, Indianapolis, Indianan, October 2020.

124. Wescom M, Dougherty M, Woscyna G, Timmerman M, **Hanson C.** Assessment of Malnutrition Coding Practices at a Midwestern Academic Medical Center. Food and Nutrition Conference and Expo, Indianapolis, Indianan, October 2020.

125. Jonson M, Dougherty M, Timmerman M, Anderson-Berry A, VanOrmer M, **Hanson C.** The relationship between food insecurity and diet diversity in a population of Midwestern pregnant women. Food and Nutrition Conference and Expo, Indianapolis, Indianan, October 2020.

126. Jordan A, Dougherty M, Timmerman M, Muhkerjee M, **Hanson C.** The Use of an Eye-Tracking Technology Tool in Analyzing and Assessing the Nutrition Focused Physical Exam Performance between Novice Nutrition Students and Expert Registered Dietitians. Food and Nutrition Conference and Expo, Indianapolis, Indianan, October 2020.

127. Dougherty M, Nessetti S, Overman K, McClarney M, Timmerman M, **Hanson C.** Impact of Medical Nutrition interventions on clinical outcomes in oncology patients. Food and Nutrition Conference and Expo, Indianapolis, Indianan, October 2020.

128. Dougherty M, Ma J, Lyden E, Lappe J, Shivappa N, Hebert J, **Hanson C.** Changes in the Dietary Inflammatory Index over time and cancer development within rural post-menopausal women. American Society for Nutrition, Seattle, Washington, June 2020.

129. Thoene M, Thompson M, VanOrmer M, Furtado J, **Hanson C,** Anderson-Berry A. Associations between

maternal tocopherol levels and pregnancy-induced blood pressure changes. American Society for Nutrition, Seattle, Washington, June 2020.

130. Thoene M, **Hanson C,** Anderson-Berry A. A Short-Form Dietary Questionnaire to Assess Intake and Status of Lutein + Zeaxanthin during Pregnancy. European Society for Parenteral and Enteral Nutrition, Lyon, France, September 2020.

131. Thoene M, Furtado J, Thompson M, VanOrmer M, **Hanson C**, Anderson-Berry A. Intrauterine Transfer of Fat-Soluble Nutrients as Analyzed at Time of Delivery. European Society for Parenteral and Enteral Nutrition, Lyon, France, September 2020.

132. Woodard V, Thoene M, VanOrmer M, Thompson M, Hanson C, Anderson-Berry A. Intrauterine Transfer of Polyunsaturated Fatty Acids in Analyzed at Time of Delivery. . European Society for Parenteral and Enteral Nutrition, Lyon, France, September 2020.

133. Thoene M, Furtado J, VanOrmer M, **Hanson C**, Anderson-Berry A. Status of Nutritional Antioxidants in Preterm Infants Receiving Oxygen Therapy. European Society for Parenteral and Enteral Nutrition, Lyon, France, September 2020.

134. Wells J, Paskea J, Swaminathan A, Adamec J, **Hanson C**. The Effect of Essential Fatty Acid Intake on Seizure Severity in Patients with Epilepsy Admitted to an Epilepsy Monitoring Unit at a Midwestern Hospital. American Epilepsy Society 2020 (virtual meeting due to COVID-19).

135. **Hanson C**, Isaak M, Heires A, Nordgren T, Niu F, Ji Y, Wu R, Ngaya R, Smith L, LeVan T, Wichman C, Furtado J, Poole J, Romberger D. Plasma concentrations of fatty acids are associated with amphiregulin production in a cohort of Midwestern veterans with COPD. American Thoracic Society Meeting, San Diego, California, May 2021 (held virtually due t COVID-19).

136. Wells J, Smith E, Wuebker J, Torres-Russotto D, Bhatti D, Roeder B, **Hanson C**, Bertoni J. Prevalence of Deficiencies of Vitamin D, B1, B6, and B12 in Parkinson Disease and Associations with Nutrient Intake. World Congress of Parkinson's Disease Related Disorders, 2021 (held virtually due to COVID-19). *Awarded one of 10 Best Abstracts*

137. Thoene M, Furtado J, Thompson M, VanOrmer M, **Hanson C**, Anderson-Berry A. Status and Intrauterine Transfer Rate of the Six Most Plentiful Carotenoids in the United States in Mother-Infant Dyads Across Five Birth Gestational Age Groups. Pediatric Academic Society, May 2021(held virtually due to COVID-19).

138. Thompson M, Thoene M, VanOrmer M, **Hanson C**, Anderson-Berry A. The influence of omega-3 and omega-6 derived bioactive metabolites in maternal and umbilical cord plasma on birth outcomes. Pediatric Academic Society, May 2021(held virtually due to COVID-19).

139. Jackson M, Wu R, Smith L, Lappe J, **Hanson C**. The Association of Dietary Fiber and Cancer Development in Rural Post-menopausal Women of Nebraska. American Society for Nutrition: Nutrition 2021 Conference (held virtually due to COVID-19).

140. Jackson M, Niu F, Smith L, Bilek L, Waltman N, **Hanson C**. The Association of Protein Intake and Bone Outcomes in Midwestern Post-menopausal Women. American Society for Nutrition: Nutrition 2021 Conference (held virtually due to COVID-19).

141. Ponce J, Cameron-Smith E, Wuebker J, Bhatti D, Torres D, **Hanson C**, Bertoni J. Prevalence of Vitamin B1 Deficiency in Subjects with Advanced Parkinson's Disease. World Congress of Neurology 2021 (held virtually due to COVID-19).

142. Ponce J, Wuebker J, Swaminathan A, Johnson A, Adamec J, **Hanson C**. Intakes of fatty acids with anti-inflammatory properties and seizure outcomes in a population of epileptic patients following a general diet. World Congress of Neurology 2021 (held virtually due to COVID-19).

143. Timmerman M, Krusen N, Wells T, Hyde M, Kennel V, Hay W, **Hanson C.** Team-based Development of a Telehealth Curriculum for Health Professions Training Students. Associations of Schools Advancing Health Professions 2021 Annual Conference, October 2021 *(held virtually due to COVID-19).*

144. Ponce J, Wuebker J, Swaminathan A, Jackson M, Timmerman M, **Hanson C**. Dietary Intake of Anti-Oxidative Trace Elements in Individuals with Epileptic Seizures. American Epilepsy Society 2021 Annual Meeting, Chicago, IL, December 2021.

145. Timmerman M, Ponce J, Nessetti S, Payzant K, **Hanson C**. The Association Between Screening Tools Used to Assess Nutrition Status in an Acute Care Setting. American Society of Parenteral and Enteral Nutrition, Seattle, WA, April 2022.

146. Ponce J, Anzalone A, Bailey K, Sayles H, Timmerman T, **Hanson C.** The Impact of Malnutrition on Clinical Outcomes in Patients Diagnosed with COVID-19. American Society of Parenteral and Enteral Nutrition, Seattle, WA, April 2022. *Selected as a Harry M. Vars research award candidate as one of five of the top-scoring, highest quality manuscript submissions.*

147. Ponce J, Timmerman M, Jackson M, Anzalone A, Bailey K, Sayles H, **Hanson C**. The Impact of Malnutrition on Mortality and Clinical Outcomes in Patients Hospitalized with COVID-19. American Thoracic Society, San Francisco CA, May 2022.

148. Eisenberg E, Liu B, Wang G, Choi Y, Jacobs D, Kalhan R, Jackson M, **Hanson C**, Bose S. Association between a Plant Centered Diet and Lung Function Trajectory and Incident Emphysema: Findings from the CARDIA Lung Study. American Thoracic Society, San Francisco CA, May 2022.

149. Schwartz M, Connelly S, **Hanson C,** VanOrmer M, Anderson-Berry A, Lappe J. Determining the Associations between Late Preterm Infant Nutrient Intake and Growth Parameters from Birth to NICU Discharge. Midwest Nursing Research Symposium, Chicago IL, March 2022.

150. Daniel C Belz, MD MPH; Han Woo, PhD; Nirupama Putcha, MD MHS; Abigail Koch MD MHS; Wendy Lorizio, MD MPH; **Corrine K Hanson**, PhD; Nadia N Hansel, MD MPH. Limited Food Access Is Associated with Decreased Omega-3 Fatty Acid Levels Among Individuals with Chronic Obstructive Pulmonary Disease. Poster presented at the American Thoracic Society International Conference; 2022 May 13-18; San Francisco, CA.

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h. Published audio-visual or computer based educational materials

1. Adult Parenteral (PN) Nutrition Writing. Collier D, **Hanson C**. 2018.

i. Published continuing education materials

University of Nebraska Lincoln

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Nutrition and Health Sciences

November 29, 2023

Kyle P. Meyer, PhD
Dean, College of Allied Health Professions
University of Nebraska Medical Center
Omaha, NE 68198-4000

Dear Dr. Meyer,

This letter is to convey that the Department of Nutrition and Health Sciences and the College of Education and Human Sciences at the University of Nebraska-Lincoln (UNL) support the development of the Advanced Practice Doctor of Nutrition and Dietetics Practice proposed by the College of Allied Health Professions (CAHP) at the University of Nebraska Medical Center (UNMC).

This program complements the accredited nutrition and dietetics program at the University of Nebraska-Lincoln. The Advanced Practice Doctorate degree will allow practicing graduates from the UNL Professional Studies in Dietetics Future Education Model program the option to pursue a practice-based professional doctorate. UNL and UNMC provide the only nutrition and dietetics programs in the State of Nebraska and have historically worked together to meet the needs in the state for Registered Dietitian Nutritionists.

The proposed degree does not represent a conflict or duplication of programs in the Department of Nutrition and Health Sciences and supports the mutual efforts of UNMC and UNL in providing nutrition services to the citizens of Nebraska and beyond its borders (see Appendix A).

Sincerely,

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Appendix A

Opportunities for Partnership and Synergy between UNMC and UNL

Drs. Rasmussen (UNL) and Hanson (UNMC) have a long history of collaboration and have worked together in the development of this proposal to identify **areas of synergy** and opportunities for **resource sharing** across both institutions. The purpose of this addendum is to provide additional information from these discussions to **clarify collaborations** (existing and future) and **opportunities to expand**.

A. Analysis of synergy and examination of duplication between UNL and UNMC doctoral level programs.

A.1 UNMC DND program overview: The proposed DND program focuses on ***advancing clinical practice*** through accreditation-defined competency-based education. The goal of the DND program is to develop graduates who are competent in the practice of advanced clinical nutrition.

A.2 UNL PhD program overview: The department of Nutrition and Health Sciences at UNL offers a PhD in Nutrition and a PhD in Human Sciences. Both UNL PhD options in are designed for students who hold a strong interest in ***nutrition research.*** *Doctoral students can focus on several specific areas of nutrition research:*

1. *Biochemical and Molecular Nutrition:* This STEM focus area is designed to meet the needs of nutritional specialists with biochemical and molecular knowledge in academia, industry, government, and non-government organizations.

2. *Community Nutrition and Health Promotion:* This focus area prepares students for teaching, outreach, and research careers in Extension, community health, and related areas to lead community-based food, nutrition, and health programs.

3. *Nutrition and Exercise:* This focus area is designed for students with a focus in exercise physiology and performance nutrition.

A.3 Takeaways and Opportunities:

1. Analysis of programs currently available to students identifies a clear gap in doctoral-level education in medical/clinical nutrition. ACEND data indicates that approximately 70% of Registered Dietitian Nutritionists work in the field of medical/clinical nutrition practice (acute and ambulatory health care). This provides a rationale for an advance course of study geared towards students who are engaged in the practice of medical/clinical nutrition therapy.

2. Analysis of doctorate programs and focus areas at UNL and UNMC identifies no duplication with the proposed degree.

3. The UNMC doctorate degree offers an alternate path for UNL masters-level graduates who do not wish to pursue a research-oriented doctorate while **promoting retention of UNL graduates in the NU system.**

4. Ongoing collaboration continues between the programs (PhD and DND) to identify any opportunities which would optimize existing faculty resources and content expertise. Some examples of this may include offering select DND courses to PhD students (see table map below)

B. Analysis of courses offered for doctoral-level training at UNMC and UNL

B.1: Crosswalk of UNMC and UNL doctorate level courses

Course	UNMC	UNL	Offered online, asynchronous	Clinical or Healthcare focus	STEM focus	Opportunity for resource sharing*
NTSC 760: Integrative Nutrition and Emerging Concepts in Advanced Nutrition Practice	x		x	x		
NUTR 763: Applied Advanced Nutrition Sciences	x		x	x		
NUTR 766: Advocacy and Global Health in the Advanced Practice of Nutrition	x		x	x		
HPTT 801: Foundations of Health Professions Education	x		x	x		Option for UNL students
HPTT 802: Instructional Design for Health Professions Education	x		x	x		Option for UNL students
HPTT 805: Evaluation and Assessment of Teaching and Learning in Health Profession Education	x		x	x		Option for UNL students
HDS 831: Management in Health Care	x		x	x		Option for UNL students
HDS 852: Design of Quality Improvement Initiatives	x		x	x		Option for UNL students
HPPT 823: Leadership in Health Professions Education	x		x	x		Option for UNL students
HDS 815: Communication and Culture in Healthcare	x		x	x		Option for UNL students
BIOS 806: Biostatistics	x		x		x	Option for UNL students
NUTR 785: Research Methods for Advanced Nutrition Practice	x		x	x		
NUTR 820: Molecular Nutrition		x			x	
NUTR 821: Molecular Nutrition Techniques		x			x	
NUTR 845: Complications of Maternal Obesity		x		x	x	Option for UNMC students who are Nebraska-based with a clinical emphasis in maternal-child health
NUTR 926: Carbohydrate and Lipid Nutrition		x			x	Option for UNMC students who are Nebraska-based
NUTR 950: Integrated Principles of Human Nutrition		x			x	Option for UNMC students who are Nebraska based
NUTR 805: Research Methods		x			x	
NUTR 859: Nutrition: A Focus on Life Stages		x	x	x		Option for UNMC students with a clinical emphasis in a specific life stage
NUTR 860: Health Behavior Theories and Approaches		x	x	x		Option for UNMC students with a clinical emphasis in behavioral therapy
NUTR 976: Organization and Management in Community Nutrition and Health Promotion		x	x			

*All 700-level professional courses based on doctoral-level practice competencies as defined by ACEND.
*All options subject to advisor approval (UNL and UNMC) and competency attainment (UNMC).
*700-level courses used for professional, graduate level courses at UNMC. UNL requires 800 or 900 level courses for graduate level programs. If interest exists, UNMC will explore cross-listing 700 level courses as 800 level courses.

B.2 Takeaways and Opportunities:

1. Analysis of coursework between UNL and UNMC identified minimal areas of duplication.
2. Analysis of coursework between UNL and UNMC identifies opportunities for resource sharing, potentially enhancing uptake of UNL courses.

C. Analysis of research collaborations for UNL and UNMC

C.1 Synergy in research collaborations across UNMC and UNL. Current funded research collaborations include:

1. Nutrition phenotyping: A Novel Tool for Improving Dietary Assessment in Cancer Survivors. Collaborators: Jackson (UNMC), Wang (UNL).
2. Nutrition Phenotyping in Rural Stroke Survivors. Collaborators: Jackson (UNMC), Wang (UNL).
3. Impact of Blueberry Consumption on Intestinal Permeability, Gut Microbiota, and Gut-Derived Inflammation in Individuals with Elevated Risk of a Pro-Inflammatory Gut Milieu. Collaborators: Rasmussen (UNL), Hanson (UNMC).
4. Palmitoleate protects against Zika virus infection in trophoblasts by activating innate immunity. Collaborators: Natajaran (UNL), Hanson (UNMC).
5. High Fiber Wheat for a Healthier Society. Collaborators: Rose (UNL), Hanson (UNMC).
6. Use of Omega-3 Fatty Acids to Inhibit Drug-Induced Inflammation and Synaptic Alterations. Collaborators: Ponce (UNMC), Member of UNL Rural Drug Addiction Research Center (RDAR).

C2. Takeaways and opportunities

1. Multiple areas of research synergy exist which combine UNL's pre-clinical and UNMC's clinical research strengths.
2. Existing research collaborations provide students with opportunities across the spectrum of translational research.
3. Exploring feasibility of in sharing research databases will enhance collaborations and increase student opportunities.

Table 6: Revenue Projections

	2025 Year 1	2026 Year 2	2027 Year 3	2028 Year 4	2029 Year 5	**Total**
Existing Funds [1]						$0
Required New Public Funds [2]	0	$0	0	0	0	$0
1. State Funds						$0
2. Local Tax Funds (community colleges)						$0
Tuition and Fees [3]	$45,270	$104,262	$209,501	$352,039	$451,515	$1,162,587
Other Funding [4]						$0
1						$0
2						$0
3						$0
Total Revenue	$45,270	$104,262	$209,501	$352,039	$451,515	$1,162,587

[1] No existing funds are needed. Tuition generation will be sufficient to cover program expenses

[2] No new public funds are required.

[3] Tuition generation is based on $625 per credit hour inflated at 2.5% per year. Fees are limited to the NU Online per credit hour fee of $35 and tuition is net of a UNMC 5% tax on online programs.

[4] N/A

NOTE: Where appropriate, show calculations and/or formulas that were used to project new revenue; e.g. number of new students projected multiplied by tuition and fees.

CCPE; 11/19/08

Table 6. Tuition and Fees Calculation

	Academic Year				
	2025	2026	2027	2028	2029
Yr 1 students matriculating annually taking 9 CH	8	10	12	16	20
Yr 2 students taking 9 CH		8	10	12	16
Yr 3 students taking 15 CH			8	10	12
Yr 4 students taking 15				8	10
Total credit hours	72	162	318	522	654
Tuition generated ($625/CH inflated at 2.5%/yr)	$ 45,000	$ 103,781	$ 208,812	$ 351,336	$ 451,184
NU Online course fee @ $35/CH	$ 2,520	$ 5,670	$ 11,130	$ 18,270	$ 22,890
UNMC online program fee 5%	$ (2,250)	$ (5,189)	$ (10,441)	$ (17,567)	$ (22,559)
Total Revenue	$ 45,270	$ 104,262	$ 209,501	$ 352,039	$ 451,515

Projecting 8 part-time students in AY 25, increasing to 20 during 5 year ramp-up period. Projecting 4 years for part-time students to complete the program.

Table 8: Projected Expenses

	2025 Year 1		2026 Year 2		2027 Year 3		2028 Year 4		2029 Year 5		**Total**	
Personnel	**FTE**	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	**FTE**	**Cost**
Faculty [1]	0.1	$9,698	0.1	$9,988	0.60	$70,219	0.76	$103,189	0.76	$106,285	0.76	$299,379
Professional [2]											0	$0
Graduate assistants											0	$0
Support staff	0		0		0.50	$36,135	0.50	$37,219	0.5	$38,336	0.5	$111,690
Subtotal	0.1	$9,698	0.1	$9,988	1.1	$106,354	1.26	$140,408	1.26	$144,621	1.26	$411,069
Operating												
General Operating [3]		$1,940		$2,497		$21,271		$28,082		$36,155		$89,944
Tuition due to other progams[5]		$18,900		$43,588		$87,701		$147,561		$189,497		$487,247
Equipment[6]		$0		$0		$0		$0		$0		$0
												$0
Subtotal		$20,840		$46,085		$108,972		$175,643		$225,652		$577,191
Total Expenses	0.1	$30,537	0.1	$56,074	1.1	$215,325	1.26	$316,051	1.26	$370,273	1.26	$988,260

[1] Includes a Program Director who will receive an administrative stipend, an assistant professor will be hired in year three who will move to .75 FTE in year 4. Salaries are inflated at 3% per year. 50% of the program curriculum exists in other CAHP online programs and will be taught by faculty in those programs. See note # 5.

[2.] NA

[3.] General operating expenses include basic office supplies, faculty professional development, travel, etc. and are estimated at 20% of salaries and benefits. Expenses are inflated at 3% per year.

[4] Program is delivered online, no new equipment needs are anticipated.

[5.] 56% of program curriculum exists in other UNMC online programs. 75% of the Tuition generated by students enrolled in those courses will be transferred to those programs. The tuition transfer will be sufficient to pay faculty teaching stipends in those programs.

NOTE: All items requiring explanation may be included on this page or in the proposal narrative.