



Cooking cures?

A case study of culinary medicine
as an academic strategy for
teaching community medicine

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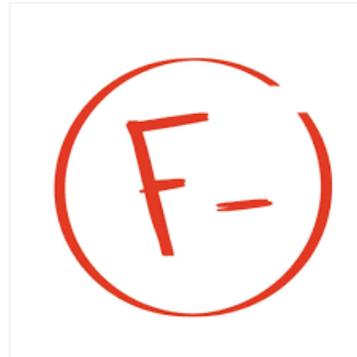
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 **Health** | School of
Community Medicine
The UNIVERSITY of OKLAHOMA



Nutrition in Medical School Education

- Nutrition is not a pre-requisite for US medical school admission
- About 10,000-12,000 hours in 4 years (class time, self-study, and clinical time)
- Another 10,000+ hours in residency, most of which have no required nutrition competencies
- Of that **20,000+ hours** in medical education, the average medical student receives **only 19 hours** of nutrition education
- That's **0.001%** of total medical education devoted to nutrition!

Meanwhile, nutrition has surpassed tobacco as a leading cause of preventable mortality and morbidity in the US.



AHA SCIENTIFIC STATEMENT

Rapid Diet Assessment Screening Tools for Cardiovascular Disease Risk Reduction Across Healthcare Settings

A Scientific Statement From the American Heart Association

ABSTRACT: It is critical that diet quality be assessed and discussed at the point of care with clinicians and other members of the healthcare team to reduce the incidence and improve the management of diet-related chronic disease, especially cardiovascular disease. Dietary screening or counseling is not usually a component of routine medical visits. Moreover, numerous barriers exist to the implementation of screening and counseling, including lack of training and knowledge, lack of time, sense of futility, lack of reimbursement, competing demands during the visit, and absence of validated rapid diet screener tools with coupled clinical decision support to identify actionable modifications for improvement. With more widespread use of electronic health records, there is an enormous unmet opportunity to provide evidence-based clinician-delivered dietary guidance using rapid diet screener tools that must be addressed. In this scientific statement from the American Heart Association, we provide rationale for the widespread adoption of rapid diet screener tools in primary care and relevant specialty care prevention settings, discuss the theory and practice-based criteria of a rapid diet screener tool that supports valid and feasible diet assessment and counseling in clinical settings, review existing tools, and discuss opportunities and challenges for integrating a rapid diet screener tool into clinician workflows through the electronic health record.

Maya Vadiveloo, PhD, RD, FAHA, Chair
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On behalf of the American Heart Association Council on Lifestyle and Cardiometabolic Health; Council on Arteriosclerosis, Thrombosis and Vascular Biology; Council on Cardiovascular and Stroke Nursing; Council on Clinical Cardiology; and Stroke Council

Key Words: AHA Scientific Statements
cardiovascular disease • decision support systems, clinical • diet • electronic health records • point-of-care systems
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<https://www.ahajournals.org/journal/circoutcomes>

“It is critical that diet quality be assessed and discussed at the point of care with clinicians and other members of the healthcare team to reduce the incidence and improve the management of diet-related chronic disease, especially cardiovascular disease.”



Behavior (and Systems) Change is Hard!
Not just for patients, *but also for providers*



What Is Culinary Medicine and What Does It Do?

John La Puma, MD, FACP¹

Introduction

OVER THE PAST 35 YEARS, a new enthusiasm has emerged about the relationship of food, eating, and cooking to personal health and wellness.¹ Though there are few peer-reviewed publications, grant monies, books, or biomedical journals entitled "culinary medicine," there are thousands of peer-reviewed publications, found mainly in mainstream medical journals that form its published research base. How can the emerging field of culinary medicine be helpfully described?

Culinary Medicine

tempt to empower the patient to care for herself or himself safely, effectively, and happily with food and beverage as a primary care technique.

Development

Five reasons for the rise in interest in culinary medicine are:

- Flourishing interest in eating out away from home and in food and cooking in popular entertainment media, as well as in oft-conflicting popular dietary advice, especially about weight management and chronic illness;
- Widespread dissatisfaction with conventional medical

- "A new evidence-based field in medicine that blends the *art of food and cooking* with the *science of medicine*. Culinary medicine is aimed at *helping people reach good personal medical decisions* about accessing and eating high-quality meals that help prevent and treat disease and restore well-being."
- "Culinary medicine attempts to improve the patient's condition with what she or he regularly eats and drinks. Special attention is given to how food works in the body as well as to the sociocultural and pleasurable aspects of eating and cooking. The objective of culinary medicine is to *empower the patient to care for herself or himself safely, effectively, and happily* with food and beverage as a primary care technique."

“The Doctor”



**Lori Whelan, MD,
DipABLM**

“The Chef”



**Chef Valarie Carter,
MPH**

“The Dietitian”



**Marianna Wetherill,
PhD, MPH, RDN/LD, DipACLM**



University of Oklahoma (OU) Culinary Medicine Program

Est. 2017

Mission:

*To improve the health of local
communities through
the power of food.*

Target Audiences: Healthcare students, medical residents and health practitioners; patients and the general public

Skills/Knowledge: Fundamental cooking techniques, nutrition prescriptions, mindful eating, and how food impacts the domains of wellness

Research Focus: Food is Medicine program design



2017

The 1st PA Program & one of the 1st MD Programs to Require Culinary Medicine

Our Curriculum

Kitchen Safety, Knife Skills & Meaning of Food in Life

Waking up all 5 Senses: Mindful Cooking; Experiencing Food with All 5 Tastes + Building Flavor with Acids, Herbs, and Spices

Nuts, Seeds, Peanuts, and Healthy Fats

Life in Full Color – Fruits & Veg

Beans, Lentils, Tofu, Tempeh & Lean Fish

Whole Grains

8 Pre-Clinical Cohorts:
190+ Physician Assistant Students
240+ Medical Students



2024



Mission:
To improve the health of local communities through the power of food.



WHAT IS A TEACHING KITCHEN?

A teaching kitchen can be described as a virtual learning laboratory for life skills. As envisioned, teaching kitchens offer education in basic cooking techniques in addition to other self-care topics like enhanced nutrition, mindfulness, physical activity, and behavioral health coaching.

While the kitchen itself is an essential component, it is only the “hardware,” while the entire teaching kitchen program can be viewed as the “software” that can be customized for different audiences.



CLASS FORMAT

- Each **food module** represents **one form of nutrition prescription** found in nearly all evidence-based **therapeutic diets**.
- Learners practice **essential cooking skills** for preparing minimally-processed and unprocessed (whole) foods.
- All cooking models provide students with the opportunity for applied learning, active discussion, and reflection.

“
Going to the teaching kitchen is one of my **favorite parts of medical school**. Our hands-on instruction and well-developed case studies have made me **much more confident** about engaging the role of nutrition and food environments in chronic health conditions. **I've already been able to apply what I've learned in my own life and in working with community members.**

-Mark Mills, MD Student
Intended Specialty: Family Medicine



Knife Skills & Meaning of Food in Life

Knife skills are an essential component of *cooking literacy*, defined as the ability to understand and prepare food. In this foundational module, medical and PA students learn how to properly hold a knife and practice core knife skills for cutting various types of vegetables. Then, in our discussion, we explore **hierarchy of food needs** and **meaning of food in life**. These concepts introduce opportunities for patient-centered nutrition counseling, including the ideas of food being part of the human experience that we can use to connect with our deeper values. Students then prepare a **simple lentil soup at home** with the vegetables they chopped in class and reflect on their experience to complete the module.



Homemade soup

LaMauri Franklin, PA Student

I scored highest on **aesthetics** and **social connection** on the survey. It made me realize that many of my food decisions are guided not just by hunger, but by the **enjoyment of taste**, the **way food looks**, but most of all by the **shared experiences it creates with others**.

-Karina Ferrera, PA Student

Mindful Cooking & Building Flavor With Spices, Herbs, and Acids

Building flavor with simple ingredients is an essential component of cooking literacy. In this module, students complete an experiential exercise involving the **5 basic tastes**--sweet, salty, sour, bitter, and umami. Students then apply these concepts to build flavor in their own vinaigrette. In our discussion, we explore ways to support mental health through **mindful eating** and **positive psychology**. Students then prepare roasted, diced sweet potatoes at home with their choice of two anti-inflammatory spices, **cumin** or **cinnamon**, and reflect on their experience to complete the module.



It was really interesting to think of cooking outside of just nutrition itself, studies show it boosts mental health by increasing positive emotions, flow, social connection & a sense of achievement.

We all want to be good providers when we are done with school, but **I never thought something as simple as cooking could help me be a better provider or a better version of myself all around**.

-Jailene Canales, PA Student

Nuts, Seeds, Peanuts & Healthy Fats

Fats play many essential roles in the body. In this module, students explore various uses for **nuts, seeds, and peanuts** in the kitchen. These foods are a satiating source of healthy fats and protein, and their rich taste can **deepen the flavor of foods** while adding **crunch or creaminess**. Through discussion, we explore essential daily fat needs and fatty acid roles in **immunomodulation**, practice applied label reading for fats, and the health benefits of adding one handful of nuts or seeds per day for **metabolic health**.



Isabella Hensley, PA Student

“

This week's readings discussed how nut consumption is associated with lower risks of cardiovascular disease, cancer mortality, and even respiratory disease deaths. What I found most interesting was that the **greatest benefits were seen with just one handful per day, making this a simple and realistic dietary addition for patient.**

-Kaylee Leybas, PA Student

”

Life in Full Color

For many therapeutic diets, **deeply-colored vegetables and fruits** cover around half the plate. In this module, students practice two *dry heat* cooking methods, **roasting** and **sautéing** to enhance the flavors of vegetables. Then, through facilitated discussion, we explore the role of these foods in **blood pressure management, cancer prevention, and vascular function**. We further explore the benefits of **produce prescriptions and nutrition incentive programs**, including Double Up Oklahoma, for promoting fruit and vegetable intake and how these programs can improve patient health outcomes. Students are then challenged to **practice a brief counseling session** with a friend or family member discussing the many benefits of these foods.



“

I learned that we do have some policies that are implementing veggies and fruits as a prescription. Amazing! However, there needs to be more push with prevention. Medicare Advantage covers this for those under Special Supplemental Benefits for the Chronically Ill. "Chronically ill". . .how can we better advocate to make this to where we aren't waiting until it's too late?

Let's prescribe to prevent.

-Jocelyn Sutter, PA Student

“

If the evidence is this strong, what's the biggest obstacle **keeping produce prescriptions from being used more widely** in regular healthcare?

- Douglas McDaniell, PA Student

”

Beans, Lentils, Tofu & Fatty Fish



Beans and lentils are an excellent source of fiber, while also being an economical source of lean protein. In this module, students learn how to use **beans creatively** in the kitchen, as well as different soy products like **tofu** and **tempeh**. Several recipes also feature low-cost canned fish, including **sardines** and **oysters**. Then, through facilitated discussion, we explore **essential amino acid** and **daily protein needs**, how **health conditions and life stages influence protein needs**, and risk factors for **protein malnutrition**. Students are then challenged to add beans to one of their meals at home that week and describe their experience.

“ I genuinely LOVED the tempeh chili we made this week in class. It had such a rich, nutty taste that made the meal feel hearty and complete.
-Karina Ferrera, PA Student



“ One fact I learned from this module is that beans naturally improve soil health by fixing nitrogen, which reduces the need for synthetic fertilizers and helps prevent nutrient runoff into waterways.
-Brendan Reiman, PA Student

“ Compounds in pulses like dietary fiber, resistant starch, and phenolic compounds may help prevent cancer by promoting healthy gut bacteria.
-Jayse Nicholas, PA Student

Intact Whole Grains

Whole grains contain greater amounts of fiber, vitamins, minerals, and phytonutrients than refined grains, and as a result, they metabolize quite differently. In this module, students learn how to cook **intact whole grains** including **gluten-free varieties** using different methods (**steaming, risotto, porridge, pilaf**). Then, through facilitated discussion, we explore **daily carbohydrate needs**, strategies for **lowering the glycemic impact** of carbohydrate foods, **lipid-lowering capacity** of barley and oats, and **economical whole grain options**. Students are then challenged to make an intact whole grain at home and share their experience..



“ Last night I made my barley as a side in the rice cooker. . . It was very good and filling. I think I will start buying more barley over rice!
- LaMauri Franklin, PA Student





Clinical Years

After completing lifestyle medicine coursework, which includes culinary medicine, students begin to practice “food is medicine” through the **OU Food First Pharmacy**. All student learners receive training on food insecurity screening using the “Hunger Vital Sign” and nutrition evaluation using a validated dietary screener to inform patient assessment and counseling.

During their year-long rotation at the Bedlam Longitudinal Clinic at OU Family Medicine, students provide care for medically-complex patients who lack health insurance.

An estimated 80% of patients experience food insecurity, and students gain experience providing patients with free “nutrition prescriptions” to support healthy lifestyle change.



Figures (Above and Left). Images of the Food First Pharmacy Nutrition Prescription Program.

After the launch of the new shelf-stable nutrition prescription program (above), we documented a doubling of nutrition assessment rates and nearly a 50% increase in nutrition counseling rates by student providers at the Bedlam-L clinic.

“

My experiences volunteering at the Bedlam Food Pharmacy have **opened my eyes to the overarching effect of food insecurity on overall health** and the impact we can have. Meeting these patients put into reality the lessons taught in OU's Culinary Medicine Program while providing an opportunity to use that knowledge to make a real difference. The gratefulness of these patients was a **profound experience** I will carry with me as a reminder of the **integral role of food as medicine and impact my time and care can have.**

-Kenny Wright, MD Student

”

Inspiring Community Change



Students and faculty prepare to being a nutrition needs assessment among Iron Gate guests affected by homelessness.



Findings from the needs assessment informed a healthy menu redesign, featuring new menu standards and recipes specially designed to address nutrition priorities for guests.

Article

Food Is Medicine for Individuals Affected by Homelessness: Findings from a Participatory Soup Kitchen Menu Redesign

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Abstract: Health disparities among people experiencing homelessness are likely exacerbated by limited access to healthy, fresh, and minimally processed foods. Soup kitchens and shelters serve as essential food safety nets for preventing hunger in this population, and community interest is growing in the potential of “food is medicine” interventions to improve the mental and physical wellbeing of people who receive meals from these providers. This study describes our two-phase approach to first identify and prioritize nutrition needs within an urban soup kitchen community and then test and implement new recipes and menu guidelines to help the standard soup kitchen menu better align with those priorities. We began by first conducting a nutrition needs assessment, including a collection of intercept surveys from a convenience sample of soup kitchen guests to better understand their nutrition-related health needs, dental issues, food preferences, and menu satisfaction (n = 112), as well as a nutrition analysis of the standard menu based on seven randomly selected meals. Most respondents reported at least one chronic health condition, with depressive disorders (50.9%) and cardiovascular diseases (49.1%) being the most common. Nearly all guests requested more fruits and vegetables at mealtimes, and results from the menu analysis revealed opportunities to lower meal contents of sodium, saturated fat, and added sugars and to raise micronutrient, fiber, and omega-3 content. We then applied these nutrition needs assessment findings to inform the second phase of the project. This phase included the identification of new food inventory items to help support cardiovascular and mental health-related nutrition needs, taste test sampling of new healthy menu items with soup kitchen guests, and hands-on culinary medicine training to kitchen staff on newly-developed “food is medicine” guidelines to support menu transformation. All taste tests of new menu items received over 75% approval, which exceeded satisfaction ratings of the standard menu collected during the phase I needs assessment. Findings from this community-based participatory research project confirm the great potential for hunger safety net providers to support critical nutrition needs within this vulnerable population through strategic menu changes. However, more research is needed on the longitudinal impacts of such changes on health indicators over time.

Keywords: food insecurity; homelessness; food is medicine; culinary medicine; soup kitchens; nutrition; fruits and vegetables



Culinary Medicine at KUMC

Marissa Love, MD

November 2025

Pediatrician

Allergist/Immunologist

Food allergy specialist

Director of Culinary Medicine

Program Director for COD in Lifestyle Medicine





What is Culinary Medicine?





The Gap &...

2022 SOM curriculum

21 class sessions with any nutrition discussion

13 class descriptions exploring clinically relevant nutrition knowledge

Recommended by National Research Council: 25 hours of nutrition education for medical students

Our Students

Among KUMC students, 26% overall confident in their abilities to provide nutrition counseling.

82% considered themselves as novice or home cooks

12% screened positive for food insecurity

38% had a food restriction



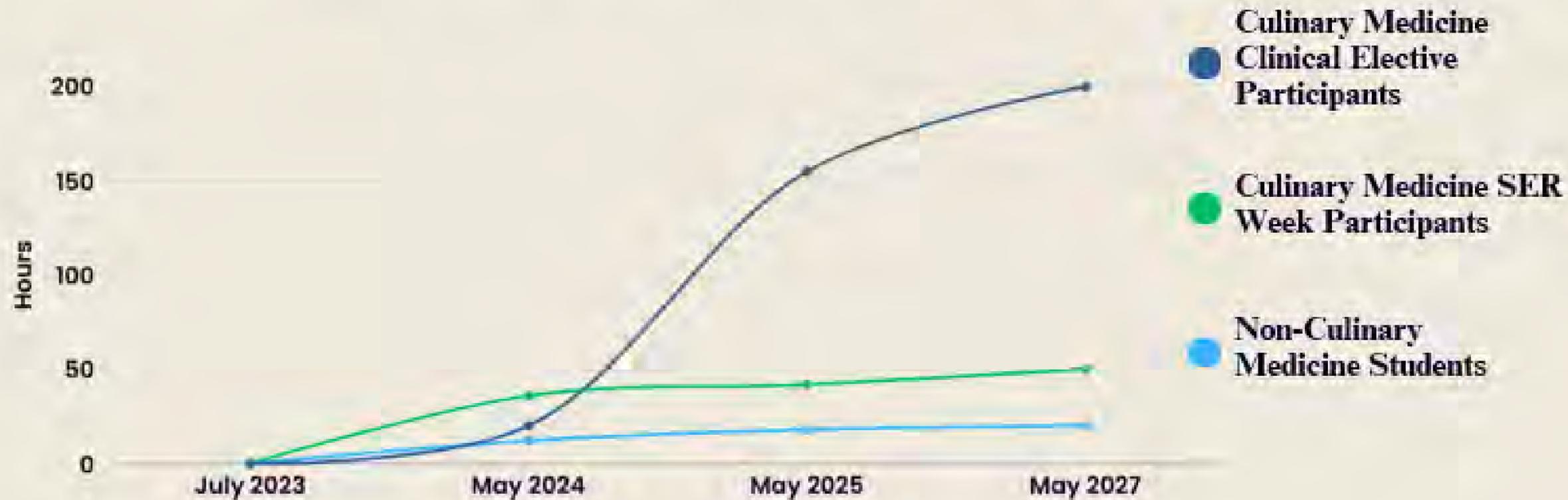


Teaching Nutrition Through Experience: Initial Outcomes from a Culinary Medicine Elective Week for Medical Students



Authors: Grace Gyllenborg, BA¹; Clare Brady, MD²; Margaret Smith, MD²; Marissa Love, MD³
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³Division of Allergy, Clinical Immunology & Rheumatology, Department of Medicine, University of Kansas Medical Center

Comparison of Nutrition Education Hours Across Four Years of Medical School: Culinary Medicine SER Week Participants vs. Non-Participants at KUSOM





The Innovation

Launched The KUMC Culinary Medicine SER week program with AME Med Ed Grant in late 2023 which addresses 3 graduation competencies.

Experiential chain: Online learning → kitchen → garden → clinic → community

Interprofessional model: Physicians, RDs, chefs, fellows, and students teaching together

Scalable design: Flipped classroom & volunteerism

National alignment: Direct response to HHS/DOE directives on nutrition education





Culinary Medicine: Summer Elective at KUMC

Since 2024, the culinary medicine team has successfully offered a 4- or 8-week summer rotation in Culinary Medicine for medical students. The rotation integrates nutrition education, sustainable cooking and eating, and health equity into an immersive, hands-on learning experience. Students have gained practical culinary skills, partnered with the KUMC Botanic Gardens, and developed affordable, plant-forward, and culturally relevant recipes.





Farm → Table → Clinic & Beyond



"I have never eaten healthier than in these past three days, and I had a great time during it all!"



The Gardens

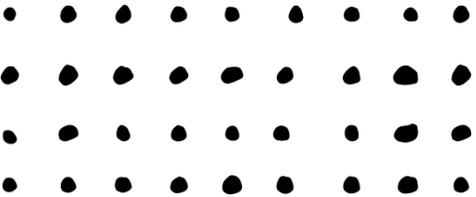
LEGEND

- 1 Pollinator Garden
- 2 Dr. Storm Water Garden
- 3 Kitchen Garden
- 4 South Garden
- 5 Chef Keith Culver Garden
- 6 Auxiliary Garden
- 7 Green Roof
- 8 Tranquility Garden
- 9 Bee Hives
- 10 Cambridge Tower A Herb & Vegetable Garden
- 11 Thrive Garden
- 12 North Garden
- 13 Student Gardens
- 14 Bee Hives on Daffodil Hill
- P** State public/patient parking





Farm/Garden



Kitchen/Table

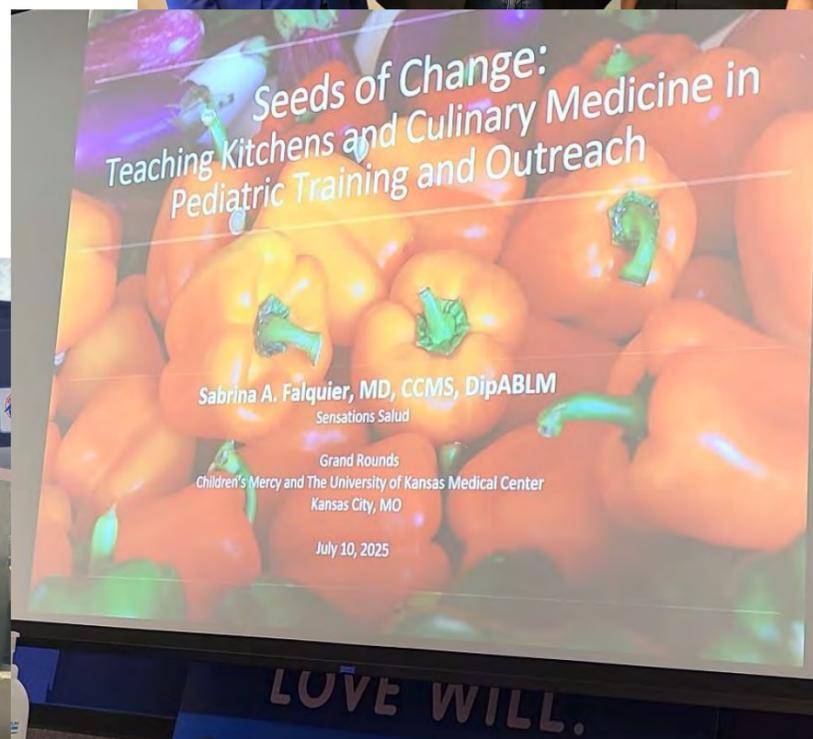


“I have never eaten healthier than in these past three days, and I had a great time during it all!”





Clinic and Beyond...





In the news:



Home | Food Access | When Going Under the Knife Does Not Mean Surgery

When Going Under the Knife Does Not Mean Surgery

KU Medical Students Slice And Dice In Culinary Medicine Class



Jill Wendholt Silva



[← NEWS ARCHIVE](#)

Course helps future doctors engage with food as medicine

Medical students gain real-world experience on how to use food to help patients avoid a lifetime of health problems.

September 27, 2024 | Susan Loyacono

For people fighting illness, the right nutrition can make a world of difference. A new course in the University of Kansas School of Medicine demonstrates how food can be medicinal — especially for those with allergies. Taken a step further, it's about teaching medical students the role of nutrition in





Teaching Nutrition Through Experience: Initial Outcomes from a Culinary Medicine Elective Week for Medical Students



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AAFP | **FMX** KEY MOMENTS FROM 2025 EDUCATION EXPO HALL EXHIBIT & SPONSOR

FMX Content Hub
Replay key moments every day of the 2025 event and



Presented at **FMX 2025!**

Lifestyle Medicine Original Research by Residents and Medical Students

- Up to twenty (20) posters will be selected for live 10-minute presentations during a designated award showcase at FMX 2025.

Lifestyle Medicine Poster Scholarships

New this year, FMX 2025 Lifestyle Medicine Poster Scholarships will be provided to students and residents by the [American Academy of Family Physicians Foundation](#) with support from the



Program Impact

UME	GME	Campus Outreach	Community Outreach
<p>Elective 3-day experience at end of block (SER week)</p> <p>Summer rotation between M1 & M2</p> <p>Independent M4 elective</p>	<p>Resident leads the case-based discussions for UME classes</p> <p>Wellness activities</p> <ul style="list-style-type: none"> - WIC Challenge - Volunteering 	<p>Demonstrations</p> <ul style="list-style-type: none"> - Heritage months - Cray Diabetes Center - Juneteenth <p>Well-being conference</p> <p>Team building activities</p> <p>Tabling events</p>	<p>ACCM/HMF resources</p>
<p>Culinary Medicine Interest Group</p> <p>Lifestyle Medicine Interest Group</p>		<p>Food is Medicine body or Food security committee</p>	<p>Networking with culinary societies</p>
<p>Certificate of Distinction Program</p> <ul style="list-style-type: none"> - Lifestyle Medicine 	<p>Board Certification</p> <ul style="list-style-type: none"> - Lifestyle Medicine - Culinary Medicine 		
<p>Summer media journal club</p>	<p>Disease focused journal club</p>	<p>Grand Rounds</p> <p>Newsletters</p>	<p>Media Interviews</p> <p>Tabling Events via Health System</p> <p>Partnerships</p>
UME	GME	Campus Outreach	Community Outreach
<p>Survey based research:</p> <ul style="list-style-type: none"> - Nutrition confidence in students - Nutrition literacy in students 	<p>Retrospective research</p> <ul style="list-style-type: none"> - Impact of SDOH on chronic disease 	<p>QI research</p> <ul style="list-style-type: none"> - Benefits of Botanic Gardens 	<p>Pilot Study</p> <ul style="list-style-type: none"> - Designing an intervention with culinary medicine



Questions?



Kendra Smith, RD
Senior Research
Associate



Scan to give feedback

Contact Dr. Marissa Love at: CulinaryMedicine@kumc.edu