

## CURRICULUM VITAE

### I. PERSONAL INFORMATION

**Name:** Joseph M. Awika  
**Rank:** Professor  
**Institution:** Texas A&M University  
**Address:** 2256 TAMU, College Station, TX 77843  
**Unit:** Food Science & Technology

### II. EDUCATION

2003 PhD, Food Science & Technology, Texas A&M University, College Station, TX  
2000 MS, Food Science & Technology, Texas A&M University, College Station, TX  
1996 B.S., Dairy Science & Tech, Egerton University, Kenya

### III. POSITIONS AND EMPLOYMENT

1997 – 1998 Production Supervisor, Kenya Cooperative Creameries, Mombasa, Kenya.  
1998 – 2003 Graduate research and teaching assistant, Texas A&M University.  
2004 – 2005 Assistant Professor, Arkansas State University, Jonesboro, AR  
2006 – 2008 Assistant professor, University of Missouri, Columbia, MO  
2008 – 2013 Assistant professor, Texas A&M University, College Station, TX  
2013 – 2017 Associate Professor, Texas A&M University, College Station, TX  
2017 – present, Professor, Texas A&M University, College Station, TX  
2020 – 2021, Associate Head, Food Science & Technology Dept, Texas A&M  
2021 – present, Head, Food Science & Technology Dept, Texas A&M

### IV. AWARDS AND HONORS

- a) National/International
- *National Academies of Science, Engineering and Medicine (NASEM) scientific committee on soil health-human health, 2023 – present.*
  - *Visiting Professor, Federal University of Vicosa, Minas Gerais, Brazil (funded by Brazilian Government), March 2023.*
  - *International Food Security Award in Honor of W.K. Kellogg and Bor S. Luh, Institute of Food Technologists, 2021.*
  - *Fulbright Faculty Fellow (Visiting Professor, Hawassa University, Ethiopia): 2018 – 2019.*
  - *Chair, Carbohydrate Division, Cereals & Grains Association, 2020 – 2021.*
  - *Editor, Journal of Cereal Science: 2018 – present*
  - *Associate Editor, Journal of the Science of Food & Agriculture, 2011-2019*
  - *Excellence in Teaching Award, American Association of Cereal Chemists Intl., 2016.*

- *Distinguished Professor*, Jiangsu Academy of Agricultural Sciences (JAAS) - 2012.
- *National Program Research Review Panelist*, USDA-ARS/NIFA, 2009-2010; 2015, 2017.
- *Graduate Fellowship*, American Association of Cereal Chemists, 2002-2003.
- *Bill Doherty Memorial Fellowship* (American Association of Cereal Chemists), 2001-2002.
- *Graduate Fellowship*, American Association of Cereal Chemists, 2000-2001.

b) University level

- 2016: Special Achievement Award for Teaching, Soil & Crop Sci Dept., Texas A&M
- 2015: Dean's Outstanding Award in Interdisciplinary Team Research, Texas A&M College of Agriculture & Life Sciences
- 2002: Tom Slick Senior Graduate Research Fellowship, Texas A&M University
- 2002-2003: Outstanding Graduate Student, Food Science & Tech. Intercollegiate Faculty Award, Texas A&M University
- 2002-2003: Academic Excellence Award, Food Science & Tech., Texas A&M University
- 2001-2002: Academic Excellence Award, Food Science & Tech., Texas A&M University

## V. EXPERIENCE

### Current position

November 2021 – present: Professor and Head, Food Science & Technology Department  
Appointment Structure: 60% Administration, 40% Research

### Relevant leadership and administrative experience

#### **2021 – present: As Department Head:**

##### *Key Administrative Responsibilities:*

- Elevate the research funding portfolio in the Department of Food Science and Technology and the international reputation and ranking of the program.
- Work with College of Agriculture and Life Sciences (COALS) administration, including COALS department heads, to advance the reputation of the College and guide the College's policies and practices.
- Maintain excellence in the teaching, research, and service missions of the department,
- Ensure excellent administrative stewardship of departmental operations, finances, and regulatory compliance.

##### *Key Accomplishments:*

- Negotiated for and hired 3 new faculty (2 tenure track) to the department, with additional 2 under advanced negotiation.
- Growth in undergraduate student numbers by 15% and graduate students by 36%.
- Growth in new external grants by more than 50%.

- Successfully mentored and supported faculty for national recognition, leading to 3 *Institute of Food Technologists* national faculty awards in our young department.
- Created new multiple fully-funded graduate fellowships to attract top talent to our department (4 currently funded).
- Created 12 new undergraduate scholarships targeting freshman students to help attract top students and grow our program. Currently in the process of raising funds to expand the new scholarships to fund a minimum of 20 freshmen annually.
- Invested \$1.6 million to upgrade undergraduate teaching pilot facilities; and an additional \$1.2 million to upgrade departmental research facilities.
- Won faculty support to raise graduate stipends by 50% over 3 years to be more nationally competitive and better support the cornerstone of our research enterprise. *The department allocated funds to provide bridge funding to faculty when needed.*
- Initiated a \$1.0 million fundraising campaign to support *undergraduate scholarships*. Donations have reached 40% within 3 months of launch.
- Established a new high impact experiential undergraduate learning (teacher-scholar) program, resulting in >5X increase in undergraduate research experience.
- Established an External Advisory Board comprised of prominent food industry leaders to support innovations, high impact learning, philanthropy, and advocacy for department.
- Developed initiatives to engage with external partners and alumni have resulted in growth in philanthropic giving and new endowments (by 15% in 2 years).

### **Other relevant leadership experience**

2021; *Chair, Promotion and Tenure Committee*, College of Agriculture and Life Sciences, Texas A&M AgriLife Research, & Texas A&M AgriLife Extension. One of the most important honors and responsibilities bestowed on a faculty at the University. Responsible for leading reviews and making recommendations for promotion and tenure of more than 60 faculty members.

2020 – 2021; *Associate Head*, Food Science and Technology Department.

- Led the development of the first Departmental Strategic Plan
- Oversaw acquisition and installation of a new hot fill food pilot processing line and advanced food analysis laboratory equipment (totaling > \$2.8 million) for the department.
- Oversaw the development of new departmental website, and graduate and undergraduate program promotional material.
- Led policy development to streamline graduate admissions into the program, by, e.g., eliminating GRE requirement.
- Led curriculum review for graduate program
- Developed a plan (currently under implementation) to improve departmental graduate stipend to be more competitive with our peer institutions.
- Developed rules and standard operating procedures for sustainable use of shared departmental resources.

**2020**; Chaired the Strategic Planning Committee for the newly formed Food Science and Technology department, successfully leading in formulating a vision and direction for the new department.

**2020 – 2021**; Member of the College of Agriculture and Life Sciences, and Texas A&M AgriLife Research & Extension Promotion and Tenure Committee.

**2020 – 2022**; Member, College of Agriculture and Life Sciences Graduate Programs Committee.

**2017**; Faculty-elected member of the College of Agriculture and Life Sciences Dean and Vice Chancellor search committee.

**2012 – 2015**; Faculty-elected member of the Texas A&M Council of Principle Investigators, elected to represent the College of Agriculture and Life Sciences in the University-wide body tasked with improving the research environment for faculty, students and staff to advance mission and stature of the University. We successfully established a major capital equipment and research infrastructure fund that is open to all faculty to compete for, and has led to numerous successful faculty team-led externally funded projects.

### **Activities prior to Texas A&M appointment**

**2006 – 2008**: *Assistant Professor, University of Missouri – Columbia, MO*

#### Research

*Overall research area*: Improve quality and health promoting properties of food.

*Research focus and activity*: Research focused on three areas;

A] – Understanding effect of food processing conditions on structure, stability and functional properties of rare phenolic compounds from cereal grains, with the goal of optimizing their food use to maximize potential health benefits.

*Accomplishments*: Provided first information on stability of natural 3-deoxyanthocyanin pigments in presence oxidizing food additives that bleach other natural pigments. Significant food industry interest was generated from this work and we continue to interact with the industry players at TAMU.

B] – Determining the structure-activity relationship of the rare cereal grain phenolic compounds using *in vitro* cell culture models that are good predictors of cancer prevention. Goal was to understand how the structure of these compounds may influence their ability to contribute to gastrointestinal cancer prevention.

*Accomplishments*: the work presented the first evidence that the rare 3-deoxyanthocyanin pigments in sorghum can induce protective phase II enzymes in non-malignant cells, and that the activity was highly specific depending on the structure of the compound. Phase II enzyme induction is widely accepted as a good predictor of cancer prevention.

C] – Development of rapid methods for toxin/contaminant detection in grain-based products; this research was partly in response to industry needs created by incidences of melamine contamination of imported wheat gluten and other foods from China in 2006-2007.

*Accomplishments:* Collaboratively developed a rapid and sensitive method to detect melamine in wheat and feed products using gold nanoparticles Surface-Enhanced Raman Spectroscopy (SERS) coupled with HPLC. The method is widely used by other researchers today. This work resulted in the most highly cited peer reviewed article ever in the *Journal of Food Science* within 3 years of publication. *Journal of Food Science* is the primary research outlet of the Institute of Food Technologists, the premier American organization of food scientists and technologists.

*Publications:* Six peer reviewed journal articles resulted from the work at University of Missouri.

*Student Advising:*

*Committee Chair:* 4 MS, 1 PhD

*Committee member:* 3 MS, 1 PhD

*Students graduated:* 2 MS as chair; 1 MS as committee member

Teaching:

*Undergraduate:* FS 3250 (Physical Principles for Food Processing), fall, yearly  
FS/AS 3231 (Principles of Dairy Foods Processing), spring, yearly

*Graduate:* FS 8440 (Functional Foods), fall, yearly

*Accomplishments:* Developed and taught a new graduate course dealing with chemical and biochemical aspects of food that contribute to disease prevention. Completely redesigned and taught two undergraduate courses as described above.

Service:

- 2007 – 2008: Served as the advisor for the undergraduate Food Science Association; advising and supervising issues related to networking with the food industry, internships, fundraising and social activities.

- 2008: Served as the chair of the American Chemical Society's University of Missouri section.

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**2005 – 2006: Adjunct Assistant Professor, University of Arkansas, Fayetteville**

- Co-advised 1 M.S. student who graduated in fall 2006.

- Participated in collaborative research on rice handling, processing and chemistry.

**2004 – 2005: Assistant Professor of Food Science, Arkansas State University**

*Main accomplishment:* Established a new food science and technology program. Developed a curriculum for the program, and successfully designed three new courses. Established a website for the program and created a liaison with the local food industry (includes Riceland, Anheuser Busch, Nestlé, ConAgra, Frito Lay and Kraft) to design practical training programs.

Teaching activities: Was responsible for teaching 5 courses, and interacting with more than 200 undergraduate students every semester. Courses taught:

1. AGRI 1211: Freshman Orientation for College of Agriculture (spring, fall)
2. AGRI 3721: Interpretation of Research (fall)
3. FDST 2013: Introduction to Food Science (spring)
4. FDST 2223: Principles of Food Processing (spring)
5. FDST 4213: Food and Health (fall)

Research activities: The position was mostly teaching and service oriented. However, Dr. Awika was successful in obtaining some grants (including USDA-NRI in 2005) and initiating 'phytochemicals for health' research, in addition to the collaborative work on rice milling and quality with Dr. Terry Siebenmorgen of University of Arkansas, Fayetteville.

Other service activities:

- Chaired Arkansas State University College of Agriculture library committee – successfully lobbied for university subscription to scientific databases like Web of Science to facilitate research activities.
- Food industry outreach; served as the food industry liaison for the university; co-organized food safety roundtables and a HACCP training workshop in conjunction with the USDA Food Safety and Inspection Services (FSIS).
- Chaired the dairy foods section of FFA (Future Farmers of America) annual regional contest. This contest brought close to 1000 high school students to ASU every year.
- Participated on faculty search committees.

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## **2003 – 2004: Research Associate – Soil & Crop Sciences, Texas A&M University**

Research activities:

1. Research focus was on characterizing health promoting phytochemicals from cereals. Specific activities included:
  - Identified of genetic and environmental factors that affect composition and levels of 3-deoxyanthocyanins, and proanthocyanidins in specialty sorghums.
  - Optimized methods to extract and separate flavonoids from specialty sorghums.
  - Demonstrated effects of food processing conditions (baking and extrusion) on extractability, structural and functional properties of polyphenols from specialty cereals.
2. Milling and processing quality of wheat

- Led the quality evaluated efforts as a component of the Texas A&M AgriLife Research wheat improvement program.

Other activities:

- Student advising: served on Ph.D. (1) and M.S. (3) student advisory committees on projects related to functional foods processing and chemistry.
- Laboratory supervision: supervised cereal chemistry, pilot processing and milling laboratories; as well as student technicians.

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**1997 – 1998: Production Supervisor, Kenya Cooperative Creameries (KCC) Dairy Processing, Ltd**

- Directly supervised over 30 personnel in a plant that processed 2.5 million liters of milk every week. Worked with continuous pasteurization systems; UHT and aseptic packaging systems, reconstituted milk systems; butter, cheese and ice cream processing and packaging systems, among others.

**1995: Industrial Intern, KCC Dairy Processing Ltd, Kenya**

- Developed a quality and process control system to improve cheddar cheese quality and reduce loss due to spoilage by molds.

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## **VI. TEACHING (Texas A&M)**

### **1. Program statement**

Dr. Awika's goal is to train students who can perform *at the highest* level in their profession and contribute creatively to addressing technical challenges relevant to their profession and society. Obesity, heart disease, cancer, and other chronic diseases are directly linked to food consumption and lifestyle. Food scientists are thus at the forefront of identifying and implementing solutions to these problems by ensuring the food supply is nutritious, healthy, affordable and tasty. It is imperative that Texas A&M food science graduates play a leading role in addressing these societal problems.

Dr. Awika, until recently, taught two undergraduate courses (FSTC 401, FSTC 305; described below) every year; both courses have laboratory sections. Through the FSTC 401, a capstone course, Dr. Awika also contributes to the Food Science and Technology Program assessment by providing annual feedback on student performance in various critical skill categories based on embedded assignments in the course. In addition, Dr. Awika teaches one graduate course (FSTC 631) in odd years, and directed graduate seminar (FSTC 681) between 2008 - 2017. Dr. Awika also supervises several graduate and undergraduate students involved in research every year.

### Summary of Courses Taught

| Course                             | Credit hours | Frequency                | Average Student Evaluation | Mean class GPA |
|------------------------------------|--------------|--------------------------|----------------------------|----------------|
| <i>Undergraduate</i>               |              |                          |                            |                |
| FSTC 401: Food Product Development | 3            | Every spring (2008-2021) | 4.7                        | 3.1            |
| FSTC 305: Fundamentals of Baking   | 3            | Every fall (2008-2021)   | 4.8                        | 3.2            |
| FSTC 491: Undergraduate Research   | variable     | As needed                | NA                         | N/A            |
| <i>Graduate</i>                    |              |                          |                            |                |
| FSTC 631: Food Carbohydrates       | 3            | Fall, odd years          | 4.9                        | 3.4            |
| FSTC 681: Graduate Seminar         | 1            | Fall, spring (till 2017) | NA                         | N/A            |
| FSTC 685: Directed Studies         | variable     | As needed                | NA                         | N/A            |
| FSTC & MEPS 691: Research          | variable     | As needed                | NA                         | N/A            |
| Dept. Average                      |              |                          | 4.5                        |                |

### Summary of student contact hours

*Undergraduate courses at TAMU (both fixed and variable credit).*

| Course                          | Sem    | Credit Hours | Number of students |            |            |           |           |            | TOTAL        |
|---------------------------------|--------|--------------|--------------------|------------|------------|-----------|-----------|------------|--------------|
|                                 |        |              | 2009-2016          | 2017       | 2018       | 2019      | 2020      | 2021       |              |
| FSTC 401                        | Spring | 3.0          | 317                | 30         | 54         | *         | 22        | 26         | 449          |
| FSTC 305                        | Fall   | 3.0          | 110                | 8          | *          | 9         | 7         | 6          | 140          |
| FSTC 491                        | All    | V            | 15                 | 1          | 3          | 0         | 0         | 5          | 24           |
| <b>Total student credit hrs</b> |        |              | <b>1,334</b>       | <b>115</b> | <b>171</b> | <b>27</b> | <b>87</b> | <b>108</b> | <b>1,836</b> |

\*Did not teach due to sabbatical leave.

*Graduate courses at TAMU (both fixed and variable credit).*

| Course | Sem | Credit Hours | Number of students |      |      |      |      |      | TOTAL |
|--------|-----|--------------|--------------------|------|------|------|------|------|-------|
|        |     |              | 2008-2016          | 2017 | 2018 | 2019 | 2020 | 2021 |       |



|                                 |                 |     |            |            |           |            |           |            |            |              |
|---------------------------------|-----------------|-----|------------|------------|-----------|------------|-----------|------------|------------|--------------|
| FSTC 631                        | Fall            | 3.0 | 54         | 5          | -         | 10         | -         | 10         | 5          | 84           |
| FSTC 681                        | Fall,<br>spring | 1.0 | 135        | 8          | -         | -          | -         | -          | -          | 143          |
| FSTC 685                        | All             | V   | 17         | 1          | 4         | 1          | 0         | 0          | 3          | 25           |
| FSTC 691                        | All             | V   | 85         | 19         | 15        | 15         | 14        | 12         | 12         | 172          |
| <b>Total student credit hrs</b> |                 |     | <b>889</b> | <b>116</b> | <b>81</b> | <b>111</b> | <b>78</b> | <b>138</b> | <b>123</b> | <b>1,536</b> |

V = variable;

## 2.Course descriptions

*FSTC 401 (Food Product Development):* A 3 credit capstone course restricted to seniors in the FSTC program. The course is designed to enable students integrate knowledge acquired in various disciplines to solve problems relevant to the food science profession. The course requires students to apply knowledge from other food science courses and related disciplines to develop marketable innovative food products that address societal needs. The course particularly emphasizes two required competencies in the food science curriculum: *team work* and *creative technical problem-solving*. In small teams, the students conduct a semester-long, hands-on project that contributes 50% of their final grade. *Dr Awika taught class from 2008 – 202.*

Although at the beginning a lot of students are not enthusiastic about being ‘forced’ to work in teams assigned by the instructor and having to rely on others for their grade, collaborative teamwork is a skill that is recognized in the curriculum as extremely valuable for success in the profession. The course is designed to enable students to take true ownership of their team effort, and the students gradually grow to greatly enjoy the course during the semester. In fact the most common student opinion comment is that the course should be 2-semesters long to allow them more time to perfect their team projects.

*FSTC 305 (Fundamentals of Baking):* A 3 credit elective course that enables students to apply fundamental chemical and physical principles to convert wheat grain into various products. Wheat is one of the most important food commodities in the world, and has the most uniquely functional protein profile of all cereal and non-cereal food plants. The course combines rigorous theoretical principles with hands-on practice in the lab to enable students recognize how major and minor constituents of wheat interact with other ingredients and processes to produce different products. This is *the only cereal grain-based processing course offered* at the undergraduate level at TAMU. The course is restricted enrolment due to lab space limitations.

The course is very well received by students even though many find it a lot more rigorous than they anticipated based on the name. Several students have commented that this is the best course they have ever taken at TAMU. *Dr Awika taught class from 2008 – 2021.*

*FSTC 631 (Food Carbohydrates):* A 3 credit elective graduate course that enables students to recognize how the structure and chemical properties of carbohydrates (the most widely used food ingredients) affects their behavior and functionality. Mechanisms used to modify carbohydrate structure to improve their functionality for food applications are also covered.

*FSTC 681(Graduate Seminar):* A 1 credit required course that guides graduate students on aspects of professional research interpretation and oral presentation. (2008 – 2017).

*Graduate and Undergraduate independent research:* When guiding students through independent projects, Dr. Awika insists that students develop a clear understanding of the big picture, i.e., compelling societal problem their project contributes towards solving. This way the students learn to approach the project with more ownership and can better interpret and defend the relevance of their findings. Dr. Awika believes independent projects are a high impact way to impart critical thinking in students. He has guided 14 postdoctoral scholars, 112 graduate students (31 as chair). He has also mentored 28 undergraduate students through independent research projects, a majority of whom have proceeded to graduate school.

#### b. Student comments synthesis

##### *i) Most enjoyable aspects*

- Professor very knowledgeable in subject matter; answers questions thoroughly – *most common comment*
- Enthusiastic about subject and thorough – *second most common comment*
- Best professor I ever had
- Lively and interactive; Interesting
- Help available all the time
- Provides real world applications examples and experience
- Having to take my own notes encouraged me to come to class and stay awake
- Freedom to identify own problem to work on
- Course material and delivery effective and relevant
- Hands on learning
- The most interesting class that I had in the US, I learnt a lot ! Keep it up !! (foreign exchange student)

##### *ii) Least enjoyable aspects*

- No class text book
- Too much work
- Tough grading
- Working in team affects my grade

### **3. Innovations in teaching**

-In the FSTC 401 capstone course, Dr. Awika employs true team-based, student-centered practical problem solving. With the aid of the instructor, students (in small teams of 3-4 members) identify a problem relevant to the current societal needs and trends in the area of food science. The teams then spend the rest of the semester identifying and developing innovative food products that have the potential to solve the team-identified problem. The team project contributes 50% of students' final grade; the team grade is based on team performance, student self-evaluation, and peer evaluation. The experience enables students to cooperatively engage in high impact learning, and also learn to rely on each other for personal and collective success. The training provides practical team skills required by the food science program and the profession.

*Sample verbatim student comments 2020:*

-I learned so much in this course, and I loved the way it tied ALL the core food science classes together into one. My grades reflected how much effort I put into studying, which was encouraging to me (I don't think anything was unfair). Awika is a GREAT prof!

-The exams in this class are difficult and Dr. Awika is a hard grader but I enjoyed creating a product and being able to test it and make modifications to it.

-This professor was challenging but well worth it, he was extremely factual and interesting. I liked the content of the class and even at times where it was boring, Dr. Awika related it back and was interesting. I will miss this class and found it a great experience.

#### **4.High impact undergraduate training**

Dr. Awika has guided several undergraduate students through independent research projects. This is an important highly impact learning engagement for students, not just in research techniques, but also in independence of thought and logical formulation of researchable ideas and their execution with the goal of creating a positive impact on society health and wellbeing. I have always got very positive feedback from the students that engage in independent research under my supervision, usually long after they have graduated. This shows the research experience is making a positive impact on their careers.

*Undergraduate researchers in Awika's lab (chronological):*

|                         |                               |
|-------------------------|-------------------------------|
| -Lara Kerr –            | 2012 spring                   |
| -Dorothy Herrman –      | 2012 summer                   |
| -Brandon Carroll –      | 2013 fall                     |
| -Andy Shih –            | 2014 spring                   |
| -Brandon Carroll –      | 2014 spring                   |
| -David Rooney –         | 2014 spring                   |
| -Cai He –               | 2014 summer                   |
| -Pablo Velasquez –      | 2014 fall                     |
| -Cai He –               | 2014 fall                     |
| -Gabriela Calzada –     | 2015 spring                   |
| -May-Jane Lucia Bueso – | 2015 spring                   |
| -Reina Wong -           | 2015 fall                     |
| -Jonathan Flores -      | 2016 spring                   |
| -Reina Wong -           | 2016 spring                   |
| -Vanessa Chicaiza -     | 2016 spring (Zamorano intern) |
| -Shayna Smith -         | 2017 fall                     |
| -Shayna Smith -         | 2018 spring                   |
| -Lucas Haskins -        | 2018 spring                   |
| -Aubrey Gilbert -       | 2018 spring                   |
| -Helen Hernandez-       | 2021 spring                   |
| -Sainabou John -        | 2021 spring                   |
| -Lauren Yee -           | 2021 spring                   |
| -My Le -                | 2021 fall                     |

-Jacob Webster-Jones - 2021 fall  
 - Moni Fadamiro - 2023 spring  
 -Diego Gonzalez - 2023 spring  
 -Janice Jeung - 2023 spring  
 -Alex Hutchinson - 2023 summer [NSF REU scholar)

## 5. Direction of graduate students

### a. Summary of graduate student advising

#### i. *Committee Chair/Co-Chair:*

**Degree recipients: 25** (13 PhD, 12 MS)

**Current: 6** (5 PhD, 1 MS)

#### ii. *Committee Member:*

**Degree recipients: 70** (26 PhD, 44 MS)

**Current: 10** (8 PhD, 2 MS)

### b. Graduate advisee profile/status (chair/co-chair)

#### *PhD Student (chronological)*

| <i>Name (Origin)</i>               | <i>Comments; current status</i>   |
|------------------------------------|---|
| Leonnard Ojwang ( <i>Kenya</i> )   | MS Missouri. <b>Graduated</b> May 2012; <i>Research scientist, Kellogg's Inc., Battle Creek, MI.</i>                      |
| Frederico Barros ( <i>Brazil</i> ) | MS TAMU. Co-chaired with L Rooney; <b>Graduated</b> Dec 2012; <i>Associate Professor, Federal Univ of Vicosa, Brazil.</i> |
| Archana Gawde ( <i>India</i> )     | MS TAMU. <b>Graduated</b> in spring 2013; <i>Scientist, doTerra International, Utah</i>                                   |
| Liyi Yang ( <i>China</i> )         | MS TAMU. <b>Graduated</b> Aug 2013; <i>Senior Scientist, Mondelez Int'l</i>   |
| Tom Jondiko ( <i>Kenya</i> )       | MS TAMU. <b>Graduated</b> in spring 2014. Current: <i>Director of Ingredient Formulations, PAK Group, CA.</i>             |
| Shima Agah ( <i>Iran</i> )         | MS Iran. <b>Graduated</b> 05/2016. <i>Senior R&amp;D Food Scientist, Allied Blending, Bell, CA.</i>                       |
| Derrick Amoako ( <i>Ghana</i> )    | BS Ghana. <b>Graduated</b> 12/2017. <i>Associate Principal Scientist, Frito Lay, Plano, TX.</i>                           |
| Taehoon Kim ( <i>S. Korea</i> )    | MS, TAMU (co-chaired with M Riaz). <b>Graduated</b> 05/2018. <i>Research Scientist, Pulmuone Foods, CA.</i>               |
| Audrey Girard ( <i>USA</i> )       | BS Kansas State. <b>Graduated</b> 05/2018. <i>Assistant Prof, Univ Wisconsin-Madison</i>                                  |

|   |   |
|---|---|
| Shreeya Ravisankar ( <i>India</i> )       | MS Washington State. <b>Graduated</b> 12/2019; <i>Senior Food Scientist, PepsiCo, Plano, TX.</i>            |
| Tadesse Fikre ( <i>Ethiopia</i> )         | MS Haramaya, Ethiopia. <b>Graduated</b> May 2019. <i>Assistant Professor, Hawassa University, Ethiopia.</i> |
| Julia Brantsen ( <i>USA</i> )             | BS Michigan State. <b>Graduated 12/2020</b> <i>Research Scientist, General Mills, Minneapolis, MN</i>       |
| Fariha Irshad ( <i>Pakistan</i> )         | MS Pakistan, Started spring 2017  |
| Suleiman Althawab ( <i>Saudi Arabia</i> ) | MS Texas A&M. <b>Graduate fall 2023.</b> <i>Assistant Professor, King Saud University, Saudi Arabia</i>     |
| Cyprian Syeundu ( <i>Kenya</i> )          | MS, Egerton University, Kenya, started spring 2020  |
| Toyoshi George ( <i>Nigeria</i> )         | MS, Cape Peninsula University of Technology, S. Africa  |
| Chen Chen ( <i>China</i> )                | MS, Zhejiang University, China  |
| Gabrielle Scott ( <i>USA</i> )            | BS Texas Woman's Univ. Started fall 2020  |
| Evans Wanyama ( <i>Kenya</i> )            | MS, University of Reading, UK. Started fall 2023  |

### MS students

| Name                              | Comments; current status   |
|-----------------------------------|--|
| Victoria Spradling ( <i>USA</i> ) | BS U Missouri. Dr. Awika's first graduate advisee (Univ of Missouri), <b>graduated</b> 2008; joined Kerry Group, St Louis, MO, thereafter. |
| Leonard Ojwang ( <i>Kenya</i> )   | BS Kenya. <b>Graduated</b> Dec 2007 (U of Missouri); continued PhD with Dr. Awika  |
| Liyi Yang ( <i>China</i> )        | BS Nanjing, China. Transferred with Dr. Awika to TAMU from U Missouri, <b>graduated</b> 2009, continued on to PhD under Dr .Awika.         |
| Tom Jondiko ( <i>Kenya</i> )      | BS Kenya. <b>Graduated</b> 2010; continued on to PhD under Dr. Awika.  |
| Radhika Mankala ( <i>India</i> )  | BS India. Initiated program in fall 2009; discontinued after 2 semesters due to family & health reasons.                                   |
| Yunus Tuncil ( <i>Turkey</i> )    | BS Turkey. <b>Graduated</b> August 2012. Completed PhD at Purdue Univ. <i>Assistant Professor, Ordu University, Turkey</i>                 |
| Karla Siska ( <i>Mexico</i> )     | BS Mexico. A CONACYT fellow, <b>graduated</b> spring 2013. <i>R&amp;D Manager, Goodheart Brand, San Antonio, TX.</i>                       |
| Kristen Dunn ( <i>USA</i> )       | BS Texas Tech. Initiated studies in spring 2012; <b>Graduated</b> May 2014. <i>Manager, R&amp;D, Pecan Deluxe, Dallas, TX.</i>             |
| Amy Collison ( <i>USA</i> )       | BS TAMU. Started in the fall 2012; <b>Graduated</b> Aug 2014. <i>Research Scientist, Frito Lay Inc., Plano, TX</i>                         |
| Dorothy Hermann ( <i>USA</i> )    | BS TAMU. Began studies in spring 2013. <b>Graduated</b> Dec 2016. <i>Senior Food Scientist, JR Simplot, Boise, Idaho.</i>                  |
| Julia Brantsen ( <i>USA</i> )     | BS Michigan State. Initiated studies 2015. Switched to PhD, spring 2016.   |
| Kaitlyn Duke ( <i>USA</i> )       | BS TAMU, started spring 2018. <b>Graduated fall 2021</b>   |

|                        |   |
|------------------------|---|
| Katherine LeMere (USA) | BS Univ Wiscosin-LaSalle. Started fall 2020. <b>Graduated fall 2022. Research Scientist, Pecan Deluxe, Dallas, TX</b> |
| Emma Whaley (USA)      | BS Kansas State Univ. Started fall 2023   |

d. Graduate student advisee awards/recognition (Dr. Awika as Chair/\*Co-Chair)

Dr. Awika's graduate students have been extremely successful at the national stage, and have received highly competitive academic and research honors and fellowships locally and nationally. His lab has consistently had among the *highest concentration of national graduate fellowship and other award recipients in the profession nationally*. This has brought a lot of recognition to his program, exemplified by, for example, his students being regularly elected to prominent national office roles, and being hired long before they graduate.

*d.1. National awards from scientific societies (chronological)*

NOTE: Most of these awards are highly competitive with **success rates in the 4 -10% range**.

American Association of Cereal Chemists International (ACCI): (name changed to *Cereal & Grains Association* since 2018) [The national and primary global society for cereal scientists]

*Graduate Fellowships*

- 2011, Frederico Barros (Raymond J. Tarleton Graduate Fellowship)
- 2011, Tom Jondiko (Elvira A. Tarleton Graduate Fellowship)
- 2012, Tom Jondiko (Milling & Baking Division M. Rella Dwyer Graduate Fellowship)
- 2013, Tom Jondiko (Bill Doty Graduate Fellowship)
- 2015, Shima Agah (AACCI Foundation Fellowship)
- 2016, Derrick Amoako (Kellogg R&D Graduate Fellowship)

*Best Student Research Competition Awards (Oral)*

- 2009, Liyi Yang (2<sup>nd</sup> Place)
- 2011, Leonnard Ojwang (1<sup>st</sup> Place)
- 2012, Frederico Barros (2<sup>nd</sup> Place)
- 2014, Dorothy Herrman (3<sup>rd</sup> Place)
- 2015, Derrick Amoako (2<sup>nd</sup> Place)
- 2017, Shreeya Ravisankar (1<sup>st</sup> Place)
- 2019, Julia Brantsen (1<sup>st</sup> Place)

*Best Student Research Competition Awards (Poster)*

- 2015, Audrey Girard, Rheology Division (1<sup>st</sup> Place)
- 2016, Derrick Amoako, Nutrition Division (1<sup>st</sup> Place)

*Product Development Team Competition*

- 2011, Barros, Yang, Jondiko, Taleon, Gawde (2<sup>nd</sup> Place)
- 2011, Ojwang, Siska, Tuncil, Kim (3<sup>rd</sup> Place)

- 2013, Collison, Dunn, Herrman, Quinn (1<sup>st</sup> Place)
- 2014, Agah, Amoako, Girard, Herrman (2<sup>nd</sup> Place)
- 2016, Brantsen, Amoako, Ravisankar, Tefferra (2<sup>nd</sup> Place)
- 2017, Ravisankar, Teferra, Totten (1<sup>st</sup> Place)

*Cereal & Grains Association (formerly AACCI) Leadership Roles*

- 2010-11, Tom Jondiko (Student Association Vice Chair)
- 2011, 2012, 2013, Tom Jondiko (Product Development Chair)
- 2012-12, Yunus Tuncil (Student Association Secretary-Treasurer)
- 2013-14, Kristen Dunn Student Association Secretary-Treasurer)
- 2014-15, Shima Agah (Student Association Chair)
- 2015-16, Derrick Amoako (Student Association Secretary-Treasurer)
- 2016-17, Tadesse Tefferra (Student Association Product Development Chair)
- 2020-21, Cyprian Syeunda (Student Association Product Development Chair)
- 2022-2023, Cyprian Syeunda (Student Association Chair)

Institute of Food Technologists Awards and leadership roles:

- 2014, Derrick Amoako (Feeding Tomorrow Graduate Fellowship)
- 2015, Derrick Amoako (Kerry Graduate Fellowship)
- 2015, Audrey Girard (Feeding Tomorrow Graduate Fellowship)
- 2016, Derrick Amoako (Feeding Tomorrow Graduate Fellowship)
- 2023, Cyprian Syeunda, First place in the annual IFT First Food Chemistry Division Graduate Student Research Oral competition.
- 2022-23, Student Association Board Member

Sorghum Improvement Conference of North America (SICNA) Graduate Research Competition:

- 2009, Liyi Yang (1<sup>st</sup> Place)
- 2013, Dorothy Herrman (1<sup>st</sup> Place)
- 2013, Kristen Dunn (2<sup>nd</sup> Place)
- 2014, Dorothy Herrman (2<sup>nd</sup> Place)

National Association of Flavors and Food-Ingredient Systems (NAFFS)

- 2023, Cyprian Syeunda; scholarship in recognition of Academic excellence related to Sensory/Flavor Industry

*d.2. Campus/College/Departmental awards*

- ❖ Cyprian Syeunda, Professor Edward “Ed” Eugene Burns, Ph.D. Memorial Scholarship in Academic Excellence by the Department of Food Science and Technology, 2023-2024
- ❖ Cyprian Syeunda, Dr Kate Adele Endowed scholarship in Academic Excellence by the Association of Former Students-Texas A &M University, 2023-2024
- ❖ Shreeya Ravisankar, 1<sup>st</sup> Place, Oral Competition, NFS Nutrition Research Symposium, Texas A&M, 2018.
- ❖ Tadesse Teferra, 3<sup>rd</sup> Place Oral Competition, NFS Nutrition Research Symposium, Texas A&M, 2018.



- ❖ Tadesse Teferra, Sigma XI STEM Award, University wide category at the 21st annual Student Research Week, March 19-23, 2018.
- ❖ Tadesse Teferra, 2<sup>nd</sup> Place, Graduate Agriculture and Life Sciences category at the 21st annual Student Research Week, March 19-23, 2018.
- ❖ Derrick Amoako, Outstanding Graduate Student in Food Science & Technology, Texas A&M, 2017
- ❖ Dorothy Herrman – 2<sup>nd</sup> place, Oral Competition at the Nutrition Research Symposium sponsored by NFSC Department in April 2016.
- ❖ Dorothy Herrman - 1<sup>ST</sup> place, Oral Competition at the Nutrition Research Symposium sponsored by NFSC Department in April 2014.
- ❖ Derrick Amoako, Borlaug International Fellowship 2013 – 2015.
- ❖ Tom Jondiko; Texas A&M, Charles H and Frances Fleming Scholarship, 2013.
- ❖ Tom Jondiko; Texas A&M, Shibata International Memorial Scholarship 2013.
- ❖ Tom Jondiko; Texas A&M, Food Sci Academic Excellence Scholarship 2009 – 2013.
- ❖ Ms. Archana Gawde received:
  - 2012 Charles & Frances Fleming Academic Excellence Award
  - 2012 Outstanding Leadership Award
  - 2012 Aggie Core value Award
  - 2011 Texas A&M Diversity Award – March 2011.
- ❖ Ms. Liyi Yang; Intercollegiate Faculty of Food Sci Academic Excellence Award, 2010.
- ❖ Ms. Karla Siska; CONACYT fellowship for her entire MS program – fall 2010.
- ❖ Ms. Liyi Yang; FSTC Regents Fellowship for the 2009-2010 academic year.
- ❖ Mr. Leonnard Ojwang; FSTC Regents Fellowship for the 2008-2009 academic year.

### *d.3. Industry Internships*

- ❖ Ms Shreeya Ravisankar, Kellogg's Company, MI, summer/fall 2018
- ❖ Mr. Derrick Amoako; Frito Lay Inc., Plano, TX, 2016
- ❖ Ms. Dorothy Herrman; JR Simplot, Dec 2014 - present
- ❖ Ms. Amy Collison; 2013, Frito Lay, Plano, TX.
- ❖ Ms. Karla Siska; Kellogg's Company, Battle Creek, MI, July – Dec 2012
- ❖ Ms. Liyi Yang; Kellogg's Company, Battle Creek, MI, Jan – July 2011.
- ❖ Mr. Leonnard Ojwang; Kellogg's, Battle Creek, MI, Jan – July 2010.
- ❖ Mr. Tom Jondiko; Kellogg's Company, Battle Creek, MI, for Jan – July 2010.
- ❖ Mr. Tom Jondiko; Frito Lay, Plano, TX, 2009.

## **6. Post-doctoral advisees/visiting scholars profile (14 total)**



| <i>Name (period)</i>                                 | <i>Graduating institution/year</i>                             | <i>Comments; current status</i>   |
|--|--|---|
| Juma N. Alviola (2008-2010)                          | Texas A&M/2007   | Dr. Alviola's specialty was wheat protein chemistry. <i>Currently professor at University of the Philippines, Manila.</i>   |
| Bhimalingaserwappa Geera (2010-2011)                 | University of Nebraska; 2009                                   | Dr. Geera worked on cereal chemistry and processing. <i>Currently research director with JR Short Milling Co, Kankakee, IL.</i>   |
| Pingping Zhang (2012–2013)                           | Chinese Academy of Agricultural Science; 2007                  | Dr Zhang, Senior research scientist at Jiangsu Academy of Agricultural Sciences, Nanjing, China. <b>Visiting Scholar.</b>   |
| Frederico Barros (2013)                              | Texas A&M/2012   | Dr. Barros worked on the chemistry of starch-tannin interactions. <i>Currently on faculty at Federal University of Vicosa, Minas Gerais, Brazil.</i>  |
| Liyi Yang (2013-2015)                                | Texas A&M/2013   | Dr. Yang Proceeded to work for Dr Awika after graduation in 2013. <i>Currently Snr Scientist at Mondelez International, E. Hanover, NJ.</i>   |
| Xianghong Li (08/2014-07/2015)                       | Jiangnan University; 2008                                      | Associate Professor, Changsha University of Science & Technology, Hunan, China. <b>Visiting scholar.</b>  |
| Audrey Girard (2019-2020)                            | Texas A&M/2018   | Dr Girard proceeded to work with Dr Awika after graduating. <i>Currently Assistant Professor, University of Wisconsin-Madison.</i>  |
| Halef Dizlek Aug (2019 – July 2020)                  | Çukurova University, Turkey/2010                               | Associate Professor, Osmaniye Korkut Ata University, Turkey. <b>Visiting scholar</b>  |
| Valéria Aparecida Vieira Queiroz (07/2019 – 02-2020) | Universidade Federal do Norte Fluminense, UENF, Brazil/2006    | Senior Research Scientist, Empresa Brasileira de Pesquisa Agropecuária (Embrapa), Minas Gerais, Brazil. <b>Visiting scholar.</b>  |
| Mariela Patrignani (09 – 12/2019)                    | Universidad Nacional de La Plata, Argentina/2017               | Research Scientist, Research for Research and Development in Food Science and Technology (CIDCA), Universidad Nacional de La Plata, La Plata, Argentina. <b>Visiting Fulbright Scholar.</b> |
| Krishna Veda (06-07/2021)                            | ICAR- Indian Agricultural Research Institute, New Delhi, India | Senior Scientist, Department of, Biochemistry, ICAR-IARI, New Delhi. <b>Visiting Fulbright Scholar hosted by Purdue University</b>  |
| Shruti Nindawat (04/2022 - present)                  | University of Delhi/ India, 2021                               | Postdoctoral research scientist, Texas A&M IHA  |
| Abadi Mezgebe (09/2022 – 02/2023)                    | University of Pretoria, S. Africa/ 2018                        | Assistant Professor, Hawassa University, Ethiopia. <b>Visiting Fulbright Scholar</b>  |
| Tadesse Teferra                                      | Texas A&M University 2019                                      | Current   |

Graduate student committee receiving degrees

| <b>Name</b>              | <b>Degree Program</b>       | <b>Year/month</b> | <b>Major advisor</b> |
|--------------------------|-----------------------------|-------------------|----------------------|
| <i>PhD students</i>      |                             |                   |                      |
| ASM Faridul Islam        | Plant Breeding              | 2021              | Michael Thompson     |
| Robert Arnold            | Plant Breeding              | 2021              | Seth Murray          |
| Acharya Pratibha         | Horticulture                | 2020/12           | Bhimanagouda Patil   |
| Jisun Lee                | Horticulture                | 2019/12           | Bhimanagouda Patil   |
| Prerna Bhargava          | Food Science & Technology   | 2019/08           | Luis Cisneros        |
| Jing Zhou                | Nutrition                   | 2019/08           | Chaodong Wu          |
| Ya Pei                   | Nutrition                   | 2017/12           | Chaodong Wu          |
| Brian Pfeiffer           | Plant Breeding              | 2017/12           | William Rooney       |
| Priyanka Chaudhary       | Horticulture                | 2017/05           | Bhimanagouda Patil   |
| Shi Lung Woo             | Nutrition                   | 2016/12           | Chaodong Wu          |
| Sabrina Alam             | Soil Science                | 2016/12           | Youjun Deng          |
| Shima Shayanfar          | Food Science & Technology   | 2016/12           | Suresh Pillai        |
| Maria E. Schreckinger    | Food Science & Technology   | 2016/08           | Luis Cisneros        |
| Paula De Aguiar Cipriano | Food Science & Technology   | 2016/05           | Stephen Talcott      |
| Beatriz Acosta           | Food Engineering            | 2015/12           | †Monterrey Tech, MX  |
| Rachel Botchlett         | Nutrition                   | 2015/12           | Chaodong Wu          |
| Adria Grayson            | Meat Science                | 2014/05           | Rhonda Miller        |
| Alex Puerta Gomez        | Biological and Ag Eng       | 2014/05           | Elena Castel-Perez   |
| Victor Taleon            | Food Science & Technology   | 2013/08           | Lloyd Rooney         |
| Kimberly Krenek          | Food Science & Technology   | 2013/08           | Steve Talcott        |
| Xin Guo                  | Nutrition                   | 2013/05           | Chaodong Wu          |
| Ram Mohan                | Horticulture                | 2012/12           | Bhimanagouda Patil   |
| Cheryl Verbee            | Soil Science                | 2012/08           | William Payne        |
| Babitha Jampala          | Plant Breeding              | 2012/05           | Dirk Hays            |
| <i>MS students</i>       |                             |                   |                      |
| Mitchell Kent            | Plant Breeding              | 12/2020           | William Rooney       |
| Tianyang Zheng           | Biological & Ag Engineering | 08/2020           | Rosana Moreira       |
| Junyi Wang               | Horticulture                | 2019/05           | Bhimanagouda Patil   |
| Destiny Matthew          | Nutrition                   | 2019/05           | Chaodong Wu          |
| Isabella Yang            | Food Science & Technology   | 2017/12           | Bhimu Patil          |
| Maricella Gomez          | Food Science & Technology   | 2017/08           | Bhimu Patil          |
| Justine Christman        | Agronomy                    | 2017/05           | Seth Murray          |
| Bethany Andrews          | Molec. & Env. Plant Sci     | 2016/08           | William Rooney       |
| Hannah Laird             | Meat Science                | 2015/12           | Rhonda Miller        |
| Christina Curry          | Nutrition                   | 2015/12           | Clint Allred         |
| Jiyang Fang              | Food Science & Technology   | 2015/12           | Christine Alvarado   |
| Amber Vecera             | Food Science & Technology   | 2015/08           | Peter Murano         |
| Nicholas A. Pugh         | Plant Breeding              | 2015/08           | William Rooney       |
| Prerna Bhargava          | Food Science & Technology   | 2015/05           | Luis Cisneros        |
| Schuyler Smith           | Plant Breeding              | 2015/05           | Seth Murray          |
| Fang-Mian Chang          | Food Science & Technology   | 2014/12           | Luis Cisneros        |
| Brian Pfeiffer           | Plant Breeding              | 2014/08           | Seth Murray          |
| Nicholas Ng              | Food Science & Technology   | 2013/08           | Peter Murano         |

|                    |                           |         |                      |
|--------------------|---------------------------|---------|----------------------|
| Shirley Arbizu     | Food Science & Technology | 2013/08 | Steve Talcott        |
| Paula Simmons      | Food Science & Technology | 2013/08 | Luis Cisneros        |
| Zeynep Sevimli     | Biological and Ag Eng     | 2013/05 | Rosana Moreira       |
| Chad Hayes         | Plant Breeding            | 2012/12 | Bill Rooney          |
| Lisbeth Rives      | Food Science & Technology | 2012/12 | Peter Murano         |
| Hunter Couch       | Food Science & Technology | 2012/12 | Elsa Murano          |
| Ashima Poudel      | Plant Breeding            | 2012/05 | Dirk Hays            |
| John Lindsey       | Food Science & Technology | 2012/05 | Lloyd Rooney         |
| Naoko Nomura       | Horticulture              | 2011/12 | Bhimanagouda Patel   |
| Autumn Billimek    | Nutrition                 | 2011/05 | Clinton Allred       |
| Salvatore Bertucci | Nutrition                 | 2011/05 | Susanne Talcott      |
| Eliana Pinilla     | Food Science & Technology | 2010/12 | Lloyd Rooney         |
| Sarah Boswell      | Food Science & Technology | 2010/12 | Lloyd Rooney         |
| Tabitha Royball    | Meat Science              | 2010/12 | Rhonda Miller        |
| Ana Ortiz-Quezada  | Food Science & Technology | 2010/08 | Luis Cisneros        |
| Shannon Cruzen     | Meat Science              | 2010/08 | Rhonda Miller        |
| Francis Beecher    | Molec. & Env. Plant Sci   | 2009/12 | Dirk Hays            |
| Mo Chen*           | Food Science              | 2008/05 | Azlin Mustafa*       |
| Erin Truitt**      | Food Science              | 2006/05 | Terry Siebenmorgen** |
|                    |                           |         |                      |

\*University of Missouri, Columbia; \*\*University of Arkansas, Fayetteville

## VII. RESEARCH

### Research statement and areas of emphasis

Dr. Awika's research examines how complex interactions and structural properties of plant-derived bioactive constituents affect food quality attributes and human health. Identifying innovative methods that combine plant genetics and food processing to transform food polymers (carbohydrates and proteins) and secondary plant metabolites derived from grains into products that prevent chronic disease and eliminate nutrition insecurity in humans is of particular interest. In these endeavors, he collaborates closely with plant breeders and geneticists as well as nutritional biochemists. He is also involved in international initiatives aimed at improving livelihood through nutrition and food security and economic empowerment among vulnerable groups in Africa (*separately highlighted in the next section*).

On-going projects include structure-function properties of grain-derived flavonoids; interactions of polyphenols with carbohydrates and proteins and consequences on food polymer behavior and biological properties (including effects on gut microbiome); factors affecting bioavailability and metabolism of polyphenols as found in native food matrix; mutation and gene editing technologies to alter grain endosperm composition and structure.

### Research productivity summary

*Research funding summary:*

- ❖ Total (Awika and Co-PIs) = **\$17,747,320** [Awika's lab portion: **\$5,722,136**]
- ❖ Grant sources: USDA-NIFA, USDA-ARS, USAID, NIH, McKnight Foundation, Bayer Crop Science, Howard Buffett Foundation, CONACYT, Texas Wheat Producers Board, Texas A&M AgriLife

### Relevant research & related accomplishments and impact summary

- **Highly successful grantsmanship**, contributing to acquisition of almost **\$18 million** in grants as PI/Co-PI (over 30% of total going to Awika's program) from federal, private foundation, industry, state, and other sources.
  - **High impact scientific output**. Research on the chemistry and structure-function properties of grain-derived phenolic compounds for food quality and chronic disease prevention is widely recognized, and is among the most highly cited in food chemistry and cereal science fields. Dr. Awika's publications (98 including book chapters) have been cited over *9,000 times*, with *H-index of 45*, and *I-10 index of 84* (*Google Scholar*, Dec 25, 2023). According to *Dimensions®* and *ScholarGPS metrics*, Dr. Awika's research output is among the most impactful in the field, cited on average **4.2X more** than comparable publications (*Dimensions*, 2022), and ranked in the **top 0.23 percentile** for quality and impact in Food Chemistry (*ScholarGPS*, 2022).
  - **Global prominence in the field**. Expertise in the field is highly regarded at the global stage, exemplified by prestigious awards, regular invitations to speak at major national and international forums and serve on prominent scientific panels, including the most recent service on the *National Academies of Science Engineering and Medicine* (NASSEM) scientific committee in 2023.
  - **Outstanding graduate/postdoctoral mentoring**. Training among the most successful graduate students in the nation in the cereal and food science fields. Dr. Awika's graduate advisees have held multiple national leadership roles and won more than 20 highly competitive national fellowships and research competition awards from the *Institute of Food Technologists* (IFT) and *American Association of Cereal Chemists* (now *Cereals & Grains Association*), our professional societies.
  - **Technology adoption by food industry**. Research has contributed to technologies and products that benefit society. For example, Grain Berry® line of products by *Silver Palate*, Cresskill, NJ (*Texas A&M AgriLife licensed IP sorghum exclusively* used in their products). Dr. Awika has also worked with numerous companies to develop proprietary technologies, including PepsiCo, Bunge NA, among others.
  - **Plant variety release**. Collaborative research with Texas A&M crop improvement programs has led to the release of 6 commodity grain varieties that are widely produced in Texas and other states in the mid-west, including; Onyx sorghum (*licensed to Silver Palate*), and TAM 305 wheat (2015), TAM 114 bread wheat (2018), TAM 204 wheat (2019), TAM 115 and TAM 205 wheats (2019).
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## VIII. INTERNATIONAL ACTIVITIES

### A. Program statement

A significant component of Dr. Awika's research effort has been dedicated to using food science to address economic and food insecurity in low-income regions. In particular, his research has focused on combining postharvest and food processing technologies with plant genetics and human nutrition research to develop grain-based product value chains that *innovatively* and *impactfully* address food and nutrition security needs among vulnerable populations in developing countries, with a strong focus in Sub Saharan Africa. In this endeavor, he has worked to develop technologies that improve functional and nutritional quality of *drought tolerant and sustainable* production system-friendly crops (especially sorghum and cowpea), to meet consumer needs and improve economic wellbeing of vulnerable groups. To achieve these goals, he works closely with plant scientists, nutritionists, entrepreneurs, and NGOs in multiple regions to ensure the products of these complex efforts appropriately address the needs of target stakeholders and create long term impact.

For example, we have used a natural mutation previously documented in sorghum endosperm protein body structure to develop sorghum varieties with enhanced food processing quality and consumer acceptability. The mutation makes it possible to overcome a primary limitation of sorghum endosperm processing induced by its naturally hydrophobic kafirins proteins. Working with plant breeders and agronomists, we have combined the mutation with grain starch properties and food processing technologies to ensure not only superior product quality, but also agronomic feasibility in target regions. The project was supported by USAID-Feed the Future targeting Ethiopia. The project has major economic potential, owing the central role of sorghum as a resilient, cost effective food security crop in Ethiopia.

#### *International Activities Support:*

- USAID Feed the Future SMIL Phase II (2019 – 2023)
- Fulbright Fellowship (2018-2019)
- USAID Feed the Future SMIL Phase I (2014 – 2018)
- Howard Buffett Foundation (2012 – 2016)
- USAID; Dry Grain Pulses CRSP (2010 – 2012)
- McKnight Foundation (2009 – 2012)
- CONACYT (2012)
- Texas A&M International Programs (2009)

#### *International Project Collaborators:*

- **Ethiopia:** Hawassa University, Ethiopian Institute of Agricultural Research (EIAR)
- **Zambia:** University of Zambia, and Zambian Agricultural Research Institute
- **Kenya:** Egerton University, and Kenya Agricultural Research Institute
- **South Africa:** University of Pretoria, University of the Free State; Ukulima Farms
- **Niger:** National Institute of Agronomic Research (INRAN)
- **Burkina Faso:** Institute for Agricultural and Environmental Research (INERA)
- **IITA-** International Institute for Tropical Agriculture (based in Nigeria)
- **Mexico:** Universidad Autonoma de Puebla, Puebla, Mexico

## B. Select international activity accomplishments

- Led multiple federal and private foundation funded projects (**over \$3.0 million**) since 2010 targeting innovative technologies to improve food applications of climate resilient food crops in Sub Sahara Africa.
- Release of 5 locally adapted high protein and improved food quality cowpea varieties in Eastern and Southern Africa.
- Newly developed sorghum hybrids with significantly enhanced processing and food product quality currently under advanced testing for potential commercial release in Ethiopia.
- Developed national quality standards for the sorghum grain and milling industry to facilitate trade and commercial sorghum utilization in Ethiopia.
- Long term human capacity building at local institutions in Africa; 5 PhD and 3 MS students successfully trained at local institutions in Africa and are currently working in private sector or on faculty at Universities in Zambia, Ethiopia, and Kenya and contributing directly to local research capacity.
- Short term human capacity building: More than 200 small and medium scale food processors and entrepreneurs successfully trained (Kenya, Zambia, South Africa, Ethiopia) on appropriate food processing technologies to ensure consistent and safe products that meet consumer demand. Most trainees are successfully employed or operating small businesses based on knowledge from the training.
- Food science research laboratory established at Hawassa University and equipped with research instruments purchased through collaborative research program.

## C. Summary of international project-related activities

### *a. Presentations (presenting author in ALL CAPS; graduate advisees underlined)*

1. AWIKA, J., Abegaz, K, Rooney, W. Advancing high digestible protein sorghum for food applications in Ethiopia. USAID-Feed the Future Sorghum and Millet Innovation Lab Project Update, Niamey, Niger, March 26 – 28, 2019
2. AWIKA, J., Abegaz, K, Taylor, J., Rooney, W. Functional properties of high digestible protein sorghum with waxy starch in food applications. USAID-Feed the Future Sorghum and Millet Innovation Lab Project Update, Saly, Senegal, March 6 – 9, 2017.
3. AWIKA, J., Abegaz, K, Taylor, J., Rooney, W. Developing superior functionality in sorghum endosperm for food applications in Ethiopia. USAID-Feed the Future Sorghum and Millet Innovation Lab Project Mid Term Update, Saly, Senegal, March 7 – 10, 2016.
4. AWIKA, J. Host Country technical training in cereal grain analysis, Hawassa University, Ethiopia, Jan 3 – 8, 2016.
5. AWIKA, J. Post-harvest research to enhance food security. Bill and Melinda Gates Foundation Program for Emerging Agricultural Research Leaders (PEARL) Workshop, Naivasha, Kenya, June 12 – 21, 2014.



6. AWIKA, J., Abegaz, K, Fikre, T. Combining high digestible protein with (hetero)waxy traits to develop superior functionality in sorghum for food applications in Ethiopia. USAID-Feed the Future Sorghum and Millet Innovation Lab Project Initiation Workshop, Adama, Ethiopia, March 26 – 28, 2014.
7. AWIKA, J. Wheat Quality Research and Collaborative Opportunities. Agricultural Research Council (ARC) consultative meeting, Bethlehem, South Africa, Dec 8, 2013.
8. Ojwang, L.; Tuncil, Y.; Siska, K.; Kim, T.; Agah, S.; and AWIKA, J. Potential synergistic health benefit of combining cereals and legumes, 2<sup>nd</sup> International Food R&D Brokerage Event, Izmir Turkey June 3-4, 2013.
9. AWIKA, JM, 2012. Defining grain quality for the 21st century and beyond: The role of health and nutrition. Research Seminar, Jiangsu Academy of Agricultural Sciences 80<sup>th</sup> Anniversary Celebration. Nanjing, China, November 25-30, 2012.
10. AWIKA, JM, 2012. Grain quality & human health. General Seminar, Jiangsu Academy of Agricultural Sciences 80<sup>th</sup> Anniversary Celebration. Nanjing, China, November 25-30, 2012.
11. AWIKA, JM, 2012. Improving cowpea for nutrition and health in Africa. Stakeholder Workshop, Dry Grain Pulses Collaborative Research Support Program (CRSP) TAMU PIII Project, Lusaka Zambia, June 1-3, 2012.
12. AWIKA, JM, 2012. African Grains as Health-promoting Functional Foods. University of Pretoria, Institute for Food, Nutrition and Well-being launching ceremony, Pretoria, South Africa, May 28, 2012.
13. AWIKA, JM, Talcott, S., Ojwang L., Gawde, A. Singh, BB. 2012. Cowpea for nutrition and health; preliminary collaborative research findings. Dry Grain Pulses Collaborative Research Support Program (CRSP) Global Meeting. February 12 – 18, 2012, Kigali, Rwanda.
14. Archana Gawde, B. B. Singh, J. Ehlers, J. M. AWIKA. 2012. Associating *Vigna unguiculata* phenotypes with composition of bioactive compounds. Dry Grain Pulses Collaborative Research Support Program (CRSP) Global Meeting (poster). February 12 – 18, 2012 Kigali, Rwanda.
15. AWIKA, JOSEPH. 2012. Fundamentals of cereal quality research. Universidad Autonoma de Puebla, CONACYT Research Collaborative Meeting. January 25-28, Puebla, Mexico.
16. AWIKA, JM, Ojwang L., Gawde, A., Singh, BB, Talcott, SU. 2011. Increasing utilization of cowpea to promote health and food security in Africa. Dry Grain Pulses Collaborative Research Support Program (CRSP) Stakeholder Workshop. May 24, 2011, Nairobi, Kenya.
17. TALCOTT, SU, Ojwang L., Awika, JM. 2011. Cowpeas in the Prevention of Inflammation and Chronic Diseases. Dry Grain Pulses Collaborative Research Support Program (CRSP) Stakeholder Workshop. May 24, 2011, Nairobi, Kenya.
18. Archana J. Gawde, B. B. Singh, Jeff Ehlers, and JOSEPH AWIKA. 2010. Association of seedcoat color to polyphenols, tannins and antioxidant activity in *Vigna unguiculata* Varieties. Fifth World Cowpea Conference, Sept 26 – Oct 2, 2010, Dakar, Senegal.
19. B.B. SINGH and J. Awika. 2010. Breeding high yielding cowpea varieties with enhanced nutritional and health traits. Fifth World Cowpea Conference, Sep 26 – Oct 2, 2010, Dakar, Senegal.

20. AWIKA, JM. 2010. Using cell models to screen compounds and extracts for bioactivity. Dry Grain Pulses Collaborative Research Support Program (CRSP) Collaborator Meeting and Training at University of Pretoria. July 26-30, 2010 Pretoria, South Africa.
21. AWIKA, JM, Singh, BB. 2010. Increasing utilization of cowpea to promote health and food security in Africa. Dry Grain Pulses Collaborative Research Support Program (CRSP) Global Meeting. April 7 – 11, 2010, Quito, Ecuador.
22. AWIKA, JM. 2010. Assessment of the potential health promoting attributes of pulses. Dry Grain Pulses Collaborative Research Support Program (CRSP) Global Meeting. April 7 – 11, 2010, Quito, Ecuador.
23. AWIKA, JOSEPH. 2008. Cereal chemistry and processing. Universidad Autonoma de Nuevo Leon, Facultad de Agronomia. 54<sup>th</sup> Anniversary keynote lecturer, December 1-2, Escobedo (Monterrey), NL, Mexico.

*b. Training and other activities*

- i) Host Country stakeholder technical training, Hawassa, Ethiopia, Jan 2017 - Feb 2019.*  
Training entrepreneurs and scientists (118) on various aspects new sorghum hybrid as a processing ingredient and product quality evaluation on grain analytical techniques specific to sorghum and wheat processing quality assessment.
- ii) Host Country stakeholder technical training, Ukulima Farms, South Africa, May 2016.*  
Training students and entrepreneurs (15) on sorghum milling and processing into value added products (in collaboration with Prof John Taylor, Univ of Pretoria; Garry Peterson, Texas A&M AgriLife).
- iii) Host Country stakeholder technical training, Hawassa, Ethiopia, Jan 2016.* Training graduate students and technical staff (21) on grain analytical techniques specific to sorghum and wheat processing quality assessment.
- iv) Host Country stakeholder technical training, Ukulima Farms, South Africa, April 2015.*  
Training students and entrepreneurs (12) on sorghum milling and processing into value added products (in collaboration with Prof John Taylor, Univ of Pretoria; Garry Peterson, Texas A&M AgriLife).
- v) Host Country stakeholder training workshop, Nairobi, Kenya, May 24, 2011:* Dr. Awika (along with Dr. Susanne Talcott) participated in stakeholder workshop in Nairobi, Kenya, aimed at disseminating findings of the USAID Dry Grain Pulses CRSP project and seeking input from government of Kenya representatives on way forward; 23 NGO and government representatives participated
- vi) Host: doctoral candidates from University of Pretoria (South Africa); July – Dec, 2011.* Dr. Awika, along with his colleague, Dr. Susanne Talcott (NFSC) hosted 2 female PhD students (Ms. Alice Nderitu and Twambo Hachibamba) undergoing training at University of Pretoria, S. Africa, for 6 months. The students were trained on advanced UPLC-MS techniques and use of cell culture to characterize bioactive compounds in cowpea. The students also collected data as a part of their PhD thesis projects.
- vii) Cowpea Nutrition and Health project planning and Host Country (HC) scientist training meeting, University of Pretoria, South Africa, July 26-30, 2010.* In collaboration with scientists at University of Pretoria, Dr. Awika provided training primarily to Kenyan and



Zambian personnel involved in the Dry Grain Pulses CRSP project. Specific techniques covered included principles of cell culture, HPLC analysis, total phenols, tannins and antioxidant assays. A total of 20 HC personnel from Kenya, Zambia, Rwanda, Nigeria, Lesotho, and South Africa were trained.

- viii) *Host Country Training and Stakeholder Workshop, University of Zambia, Lusaka, Zambia, August 1- 5, 2010.* Dr. Awika provided training to two HC personnel at University of Zambia on how to use fluorescence and UV-Vis spectroscopy to perform basic polyphenolic characterization of plant material.
- ix) *Host Country Stakeholder meetings and training, Egerton, University, Kenya August 9- 13, 2010.* Dr. Awika provided training to five HC personnel at Egerton University on use of UV-Vis spectroscopy to perform basic phenolic and antioxidant characterization.

*International project-related training summary*

| Type of training                     | Zambia | Kenya | Ethiopia | S Africa | Total |
|--------------------------------------|--------|-------|----------|----------|-------|
| Short term training (2010-2019)      | 16     | 23    | 144      | 31       | 214   |
| Long term Training MS*               |        |       | 3        |          | 3     |
| Long term training- PhD* (2010-2019) | 1      | 1     | 3        | NA       | 5     |

\*Non TAMU students, trained in collaboration with Univ. of Pretoria, S. Africa; and Hawassa Univ., Ethiopia.

## IX. GRANTS AND CONTRACTS

### A. Grants and contracts summary

| Type and Role      | Since TAMU Appointment |                         | Career                |                         |
|--------------------|------------------------|-------------------------|-----------------------|-------------------------|
|                    | Total to all PIs (\$)  | Allocated to Awika (\$) | Total to all PIs (\$) | Allocated to Awika (\$) |
| <b>External</b>    |                        |                         |                       |                         |
| PI                 | 5,123,260              | 3,549,386               | 5,277,290             | 3,703,416               |
| Co-PI              | 10,198,462             | 1,129,340               | 10,198,462            | 1,160,340               |
| Total (PI + Co-PI) | 15,321,722             | 4,678,726               | 15,475,752            | 4,863,756               |
| <b>Internal</b>    |                        |                         |                       |                         |
| PI                 | 754,398                | 582,030                 | 754,398               | 582,030                 |
| Co-PI              | 1,517,170              | 276,350                 | 1,517,170             | 276,350                 |
| Total (PI + Co-PI) | 2,271,568              | 858,380                 | 2,271,568             | 858,380                 |
| <b>Grand Total</b> | <b>17,593,290</b>      | <b>5,537,106</b>        | <b>17,747,320</b>     | <b>5,722,136</b>        |

**B. Current Projects (funding source in parentheses)****[Lead PI name in bold]**

- a) Project No.: N/A (IHA-ARS): 06/01/2022 – 12/31/2024
  - a. Project title: Prediction of microbiota-dependent effects of fine-scale food composition on human health using Big Data and AI/ML approaches. **Awika, J. (PI)**; Lemay, D. (co-PI)
  - b. Amount funded: **\$ 348,200 (Awika Lab: 176,200)**
- b) Project No.: GRANT13064593 (USDA-AFRI)
  - a. Project title: 3-Deoxyanthocyanins as natural, stable, bioactive food colorants: overcoming barriers to commercial application.
  - b. Investigators: **Awika, J. (PI)**; Gomes, C.
  - c. Duration: 01/01/2021 – 08/31/2024
  - d. Amount funded: **\$ 471,250 (Awika Lab: 306,250)**
- c) Project No.: 2005253 (USDA Pulse Crop Health Initiative)
  - a. Project title: Improving Pulse Protein Properties for Expanded Functionality Using Naturally Derived Polymeric Polyphenols.
  - b. Investigators: **Awika, J. (PI)**; Girard, A., Riaz, M.
  - c. Duration: 09/01/2020 – 02/28/2024
  - d. Amount funded: **\$ 310,000 (Awika Lab: 240,000)**
- d) Project No.: 408231(Texas Wheat Producers Board)
  - a. Project title: Enhancing Texas wheat marketability through end-use quality assessment.
  - b. Investigators: **Awika, J. (PI)**; Girard, A.
  - c. Duration: 09/01/2023 – 08/31/2024
  - d. Amount funded: **\$ 35,000 (Awika Lab: 35,000)**
- e) Project No: 1 R01 DK124854-01 (NIH)
  - a. Project title: Novel protective role for adenosine 2A receptor (A2AR) in non-alcoholic fatty liver disease (NAFLD).
  - b. Investigators: **Wu, C.,...Awika, J.**
  - c. Duration: 04/01/2020 – 03/31/2024
  - d. Amount funded: \$1,827,291 (**Awika Lab: 65,578**)
- f) Project No: A00-0239-S002 (Kansas State University)
  - a. Project title: Productive specialty grain sorghums for diversified end-use applications.
  - b. Investigators: **Rooney, W.**, Bell, J., Awika, J.
  - c. Duration: 01/01/2020 – 12/31/2023
  - d. Amount funded: **\$ 385,108 (Awika Lab: 34,116)**
- g) Project No: S19169 (USAID-Feed the Future)
  - a. Project title: Advancing improved functionality and protein quality sorghum hybrids for food or food applications in Ethiopia.
  - b. Investigators: **Awika, J. (PI)**; Rooney, W., Abegaz, K. Tirfesa, A.
  - c. Duration: 04/01/2019 – 07/30/2023
  - d. Amount funded: **\$ 1,049,792 (Awika Lab: 425,527)**

**C. Completed Projects (funding source in parentheses)**

- a) Project No: A00-0239-S002 (Kansas State University)
  - a. Project title: Productive specialty grain sorghums for diversified end-use applications.
  - b. Investigators: **Rooney, W.**, Bell, J., Awika, J.
  - c. Duration: 01/01/2020 – 12/31/2023
  - d. Amount funded: **\$ 385,108 (Awika Lab: 34,116)**
- b) Project No: S19169 (USAID-Feed the Future)
  - a. Project title: Advancing improved functionality and protein quality sorghum hybrids for food or food applications in Ethiopia.
  - b. Investigators: **Awika, J. (PI)**; Rooney, W., Abegaz, K. Tirfesa, A.
  - c. Duration: 04/01/2019 – 07/30/2023
  - d. Amount funded: **\$ 1,049,792 (Awika Lab: 425,527)**
- c) Project No: 1014928 (USDA-AFRI)
  - a. Project title: Mechanisms for synergistic interactions of combined cereal flavones and legume 3-hydroxyflavones against inflammation.
  - b. Investigators: **Awika, J. (PI)**; Wu, C.
  - c. Duration: 03/01/2018 – 02/28/2021
  - d. Amount funded: **\$ 461,528 (Awika Lab: 311,528)**
- d) Project No.: 408231(Texas Wheat Producers Board)
  - a. Project title: End-use quality assessment to expand market opportunity for Texas wheat.
  - b. Investigators: **Awika, J. (PI)**; Girard, A.
  - c. Duration: 09/01/2020 – 08/31/2021
  - d. Amount funded: \$ 35,000
- e) Project No.: 408231(Texas Wheat Producers Board)
  - a. Project title: Enhancing Texas wheat marketability through end-use quality assessment.
  - b. Investigators: **Awika, J.**; Girard, A.
  - c. Duration: 09/01/2019 – 08/31/2020
  - d. Amount: \$34,000
- f) Project No: US Department of State - Fulbright
  - a. Project title: Strengthening postharvest infrastructure of drought tolerant cereal staples (sorghum and teff) for nutrition and food security in Ethiopia.
  - b. Investigators: **Awika, J.**
  - c. Duration: 09/01/2018 – 06/31/2019
  - d. Amount funded: \$ 95,000
- g) Project No.: 408231 (Texas Wheat Producers Board)
  - a. Project title: End-use quality assessment to expand market opportunity for Texas wheat.
  - b. Investigators: **Awika, J. (PI)**; Girard, A.
  - c. Duration: 09/01/2018 – 08/31/2019
  - d. Amount funded: \$ 30,000

- h) Project No.: 504888 (USAID Feed the Future- Sorghum and Millet Innovation Lab).
  - a. Project title: Combining high digestible protein with (hetero)waxy traits to develop superior functionality in sorghum for food applications in Ethiopia.
  - b. Investigators: **Awika, J. (PI)**, Rooney, W., Hays, D., Abegaz, K., Taylor, J.
  - c. Duration: 04/01/2014 – 07/31/2019
  - d. Amount funded: \$ 809,941
- i) Project No.: 408231 (Texas Wheat Producers Board)
  - a. Project title: Screening Texas wheat for end use quality traits.
  - b. Investigators: **Awika, J.**
  - c. Duration: 09/01/2017 – 08/31/2018
  - d. Amount funded: \$ 30,000
- j) Project No: 408169 (PepsiCo Inc)
  - a. Project title: Sorghum pigments as functional food ingredients.
  - b. Investigators: **Awika, J.**
  - c. Duration: 05/01/2017 – 12/31/2017
  - d. Amount funded: \$ 45,000
- k) Project No.: 407594 (Texas Wheat Producers Board)
  - a. Project title: Screening Texas wheat for end use quality traits.
  - b. Investigators: **Awika, J.**
  - c. Duration: 09/01/2016 – 08/31/2017
  - d. Amount funded: \$ 30,000
- l) Project No.: N/A (US Grains Council)
  - a. Project title: US Sorghum quality survey, 2016 crop.
  - b. Investigators: **Awika, J.**
  - c. Duration: 09/01/2016 – 08/31/2017
  - d. Amount funded: \$ 26,000
- m) Project No.: 407594 (Texas Wheat Producers Board)
  - a. Project title: End use quality evaluation of Texas wheat.
  - b. Investigators: **Awika, J.**
  - c. Duration: 09/01/2015 – 08/31/2016
  - d. Amount funded: \$ 30,000
- n) Project No.: 406507 (Howard Buffet Foundation/ TAMU Borlaug Institute)
  - a. Project Title: Improved cowpea varieties and cowpea-based cropping systems for sustainable increase in food production in Sub-Saharan Africa.
  - b. Investigators: **Foster, J.**, Payne, W., Awika, J., Asiwe, J., Singh, B.
  - c. Duration: 01/01/2013 – 12/30/2016
  - d. Amount funded: \$ 385,000
- o) Project No.: 406507 (Howard Buffet Foundation /TAMU Borlaug Institute)
  - a. Project Title: Sorghum Production and End-Use Product Development for Increased Food Security.
  - b. Investigators: **Peterson, G.**, Awika, J., Taylor, J., Chisi, M., McLaren, N.
  - c. Duration: 01/01/2013 – 12/30/2016
  - d. Amount funded: \$ 412,000
- p) Project No.: 203389 (Bayer Crop Science)

- a. Project Title: An accelerated pipeline to develop superior commodity and identity preserved hard winter wheat varieties.
  - b. Investigators: **Rudd, J.**, Ibrahim, A., Hays, D., Awika, J., Xue, Q., Liu, S., Johnson, C.
  - c. Duration: 09/01/2011 – 08/30/2016
  - d. Amount funded: \$ 7,679,233
- q) Project No.: 407336 (Texas Wheat Producers Board)
- a. Project title: End use quality evaluation of Texas wheat.
  - b. Investigators: **Awika, J.**
  - c. Duration: 09/01/2014 – 08/31/2015
  - d. Amount funded: \$ 30,000
- r) Project No.: 406647 (Texas Wheat Producers Board)
- a. Project title: Wheat quality analysis for the Texas wheat improvement program.
  - b. Investigators: **Awika, J.**
  - c. Duration: 09/01/2013 – 08/31/2014
  - d. Amount funded: \$ 20,000
- s) Project No.: 406334 (Texas Wheat Producers Board)
- a. Project title: Wheat quality analysis for the Texas wheat improvement program.
  - b. Investigators: **Awika, J.**
  - c. Duration: 09/01/2012 – 08/31/2013
  - d. Amount funded: \$ 15,000
- t) Project No.: (Texas AgriLife Research)
- a. Project Title: QTL mapping for three value added traits in corn: Aflatoxin resistance, blue grain, and high-oleic acid in a high resolution population.
  - b. Investigators: **Murray, S.**, Klein, P., Awika, J.
  - c. Duration: 09/01/2011 – 08/30/2013
  - d. Amount funded: \$ 100,000
- u) Project No.: 427951 (USAID Pulses CRSP)
- a. Project Title: Increasing utilization of cowpeas to promote health and food security in Africa.
  - b. Investigators: **Awika, J. (PI)**; Talcott, S., Sing, B., Minnaar, A., Shindano, J. Faraj, A.
  - c. Duration: 01/01/2010 – 12/31/2012
  - d. Amount funded: \$ 620,690
- v) Project No.: 406334 (Texas Wheat Producers Board)
- a. Project title: Predictive potential of flour and dough rheological properties on tortilla quality.
  - b. Investigators: **Awika, J. (PI)**; Geera, B.
  - c. Duration: 09/01/2011 – 08/31/2012
  - d. Amount funded: \$ 10,000
- w) Project No.: 09-957 (McKnight Foundation)
- a. Project Title: Improving millet-sorghum-cowpea System productivity in Niger Republic by introducing high yielding drought-resistant phosphate-efficient cowpea varieties.

- b. Investigators: **Awika, J. (PI)**, Loeppert, R., Singh, B., Mahamane, S., Lompo, F.
  - c. Duration: 10/01/2009 – 09/30/2012
  - d. Amount funded: \$ 353,980
- x) Project No.: 405801 (Texas Wheat Producers Board)
- a. Project title: Relationship between wheat flour properties and tortilla quality.
  - b. Investigators: **Awika, J.**, Alviola, N.
  - c. Duration: 09/01/2010 – 08/31/2011
  - d. Amount funded: \$ 15,000
- y) Project No.: (Texas AgriLife Research - Cropping Systems)
- a. Project Title: Bioethanol and feed value systems evaluation of identity preserved grain sorghum with optimized endosperm matrices for enhanced bioethanol conversion and high lysine DDG feed and food value.
  - b. Investigators: **Hays, D.** Rooney, L., Awika, J., Capareda, S., Rooney, W., Peterson, G.
  - c. Project duration: 09/2009 - 06/2011
  - d. Amount funded: \$200,000
- z) Project No.: (Texas A&M International Programs)
- a. Project title: Improving micronutrient bioavailability and quality of grain-based staple foods in Kenya.
  - b. Investigators: **Awika, J.**
  - c. Project duration: 04/01/2009 – 05/01/2010
  - d. Amount funded: \$ 1,400
- aa) Project No.: (National Sorghum Checkoff)
- a. Project title: Development of new uses for sorghum in healthy foods and nutraceuticals.
  - b. Investigators: **Rooney, L.**, Awika, J., Rooney, W., Peterson, G., J. Turner, N.
  - c. Project duration: 09/01/2010 – 08/31/2011
  - d. Amount funded: \$103,000
- bb) Project No.: 405801 (Texas Wheat Producers Board)
- a. Project title: Developing efficient methods to evaluate wheat for tortilla production
  - b. Investigators: **Awika, J.**, Alviola, N.
  - c. Duration: 09/01/2009 – 08/31/2010
  - d. Amount funded: \$20,000
-

## X. PUBLICATIONS AND PROFESSIONAL OUTPUT

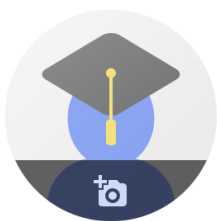
### A. Summary of Publications and Scholarly Work

| Type                   | Since last promotion | Career |
|------------------------|----------------------|--------|
| Refereed/Peer Reviewed | 36                   | 86     |
| Scientific Abstracts   | 40                   | 137    |
| Books                  | 1                    | 2      |
| Book Chapters          | 4                    | 10     |

### Publications impact (Google Scholar)

Note: Citation trend dips apparent in years following Dr Awika’s one-year sabbatical leave (2018-2019), and when he became an administrator (2021).

### Google Scholar citation trajectory (Jan 2024)



Joseph Awika

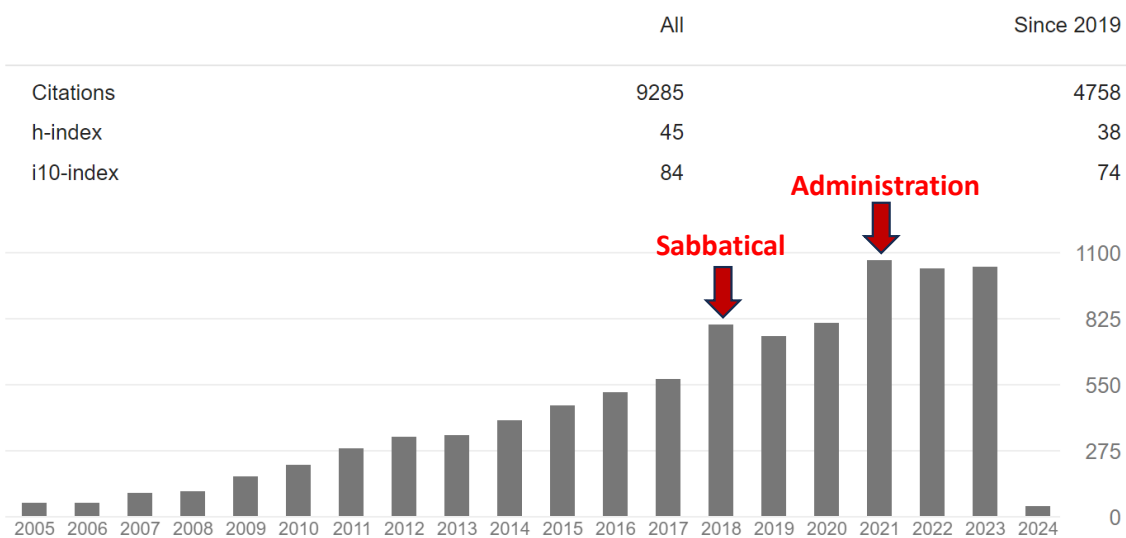
FOLLOW

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[Cereal Science](#) [Cereal Chemistry](#) [Sorghum](#)

ARTICLES CITED BY PUBLIC ACCESS CO-AUTHORS



**B. Peer reviewed, refereed journal articles [[Available at Google Scholar](#)]**

\*Dr. Awika is the corresponding author

§ Dr. Awika is senior/supervising author

Underlined: Dr. Awika's graduate/postdoctoral advisee

\*\*Dr. Awika served on author's graduate committee

1. Awika, J.M.\*, Suhendro, and E., Rooney, L.W. 2002. Milling value of sorghums compared by adjusting yields to a constant product color. *Cereal Chemistry* 79, 249-251.
2. Awika, J.M.\*, Rooney, L.W., Wu, X., Prior L., and Cisneros-Zevallos, L. 2003. Screening methods to measure antioxidant activity of sorghum and sorghum products. *Journal of Agricultural and Food Chemistry* 51, 6657-6662.
3. Awika, J.M.\*, Dykes, L., Gu, L., Rooney, and L.W., Prior, L. 2003. Processing of sorghum (*Sorghum bicolor*) and sorghum products alters procyanidin oligomer and polymer distribution and content. *Journal of Agricultural and Food Chemistry* 51, 5516-5521.
4. Earp, C.F., McDonough, C.M., Awika, J., and Rooney, L.W. 2004. Testa development in the caryopsis of *Sorghum bicolor* (L.) Moench. *Journal of Cereal Science* 39, 303-311.
5. Awika, J.M.\*, Rooney, LW, and Waniska, RD. 2004. Properties of 3-deoxyanthocyanins from sorghum. *Journal of Agricultural and Food Chemistry* 52, 4388-4394.
6. Awika, J.M.\*, and Rooney, LW. 2004. Sorghum phytochemicals and their potential impact on human health. *Phytochemistry* 65, 1199-1221.
7. Awika, J.M.\*, Rooney, LW, and Waniska, RD. 2005. Anthocyanins from black sorghum and their antioxidant properties. *Food Chemistry* 90, 293-304.
8. Rooney, LW, and Awika, J.M. 2005. Overview of products and health benefits of specialty sorghums. *Cereal Foods World*, 50, 109-115.
9. Awika, J.M.\*, McDonough, C.M., and Rooney, L.W. 2005. Decorticating sorghum to concentrate healthy phytochemicals. *Journal of Agricultural and Food Chemistry* 53, 6230-6234.
10. L. He\*\*, L. Yang, M. Lin, J. Awika<sup>§</sup>, D. R. Ledoux, H. Li, and A. Mustapha. 2008. A New approach to measure melamine, cyanuric acid, and melamine cyanurate using surface enhanced Raman Spectroscopy coupled with gold nanosubstrates. *Sensing and Instrumentation for Food Quality and Safety* 2, 66-71.
11. J.M. Awika\*. 2008. Behavior of 3-deoxyanthocyanidins in the presence of phenolic copigments. *Food Research International* 41, 532-538.
12. Ojwang, L.O., and Awika, J.M.\*. 2008. Effect of pyruvic acid and ascorbic acid on stability of 3-deoxyanthocyanidins. *Journal of the Science of Food and Agriculture*, 88, 1987-1996.
13. M. Lin, L. He\*\*, J. Awika<sup>§</sup>, L. Yang, and D. R. Ledoux, H. Li. 2008. Detection of melamine in gluten, chicken feed and processed foods using surface-enhanced Raman Spectroscopy and HPLC. *Journal of Food Science* 73, T129-T134.
14. L. Yang, J.D. Browning, and J. M. Awika\*. 2009. Sorghum 3-deoxyanthocyanins possess strong phase II enzyme inducer activity and cancer cell growth inhibition properties. *Journal of Agricultural and Food Chemistry*, 57, 1797-1804.



15. J. M. Awika\*, L. Yang, J. D. Browning, and A. Faraj. 2009. Comparative antioxidant, antiproliferative and phase II enzyme inducing potential of sorghum (*Sorghum bicolor*) varieties. *LWT – Food Science & Technology*, 42, 1041-1046.
16. J. N. Alviola, T. Jondiko and J. M. Awika\*. 2010. Effect of cross-linked resistant starch on wheat tortilla quality. *Cereal Chemistry*, 87, 221–225.
17. J. N. Alviola and J. M. Awika\*. 2010. Relationship between objective and subjective tortilla quality evaluation methods. *Cereal Chemistry*, 87, 481-485.
18. Leonnard O. Ojwang and J. M. Awika\*. 2010. Stability of apigeninidin and its methoxylated derivatives in the presence of sulfites. *Journal of Agricultural and Food Chemistry*, 58, 9077-9082.
19. J. N. Alviola, T. Jondiko and J. M. Awika\*. 2012. Effect of strong gluten flour on quality of wheat tortillas fortified with cross-linked resistant starch. *Journal of Food Processing and Preservation* 36, 38 – 45.
20. Yang, L., Allred, K., Geera, B., Allred, C., and Awika, J.\* 2012. Sorghum phenolics demonstrate estrogenic action and induce apoptosis in non-malignant colonocytes. *Nutrition and Cancer*, 64, 419-427.
21. L. O. Ojwang, L. Dykes, J. M. Awika\*. 2012. Ultra-performance liquid chromatography-tandem quadrupole mass spectrometer profiling of anthocyanins and flavonols in cowpea (*Vigna unguiculata*) of varying genotypes. *Journal of Agricultural and Food Chemistry* 60, 3735-3744.
22. Geera, B., Ojwang, L., Awika, J\*. 2012. New highly stable dimeric 3-deoxyanthocyanidin pigments from *Sorghum bicolor* leaf sheath. *Journal of Food Science*, 77, C566-C572.
23. T. O. Jondiko, N.J. Alviola, D.B. Hays, A. Ibrahim, M. Tilley, and J.M. Awika\*. 2012. Effect of high molecular weight glutenin subunit allelic composition on wheat flour tortilla quality. *Cereal Chemistry*, 89, 155-161.
24. Beecher F\*\*, Mason E., Mondal S., Awika J., Hays D., Ibrahim A. 2012. Identification of quantitative trait loci (QTLs) associated with maintenance of wheat (*Triticum aestivum* Desf.) quality characteristics under heat stress conditions. *Euphytica*, 188, 361-368.
25. Frederico Barros, Joseph M. Awika<sup>§</sup>, Lloyd W. Rooney. 2012. Interaction of tannins and other sorghum phenolic compounds with starch and effects on *in vitro* starch digestibility. *Journal of Agricultural and Food Chemistry* 60, 11609-11617.
26. William L. Rooney, Lloyd W. Rooney, Joseph Awika, and Linda Dykes. 2013. Registration of Tx3362 sorghum germplasm. *Journal of plant Registration*, 7, 104-107.
27. Ojwang, L.O., L. Yang, L. Dykes, J. M. Awika\*. 2013. Proanthocyanidin profile of cowpea (*Vigna unguiculata*) reveals catechin-O-glucoside as the dominant compound. *Food Chemistry*. 139, 35-43.
28. Nderitu, A. M\*\*, L. Dykes, J. M. Awika<sup>§</sup>, Minnaar, A., Duodu, K. G. 2013. Phenolic composition and inhibitory effect against oxidative DNA damage of cooked cowpeas as affected by simulated *in vitro* gastrointestinal digestion. *Food Chemistry*. 141, 1763-1771.
29. Frederico Barros, L. Dykes, J.M. Awika<sup>§</sup>, L. W. Rooney. 2013. Accelerated solvent extraction of phenolic compounds from sorghum brans. *Journal of Cereal Science* 58, 305-315.
30. Hachibamba, T\*\*, L. Dykes, J. M. Awika<sup>§</sup>, Minnaar, A., Duodu, K. G. 2013. Effect of

- simulated gastrointestinal digestion on phenolic composition and antioxidant capacity of cooked cowpea (*Vigna unguiculata*) varieties. *International Journal of Food Science and Technology* 48, 2638-2649.
31. C Petti, R Kushwaha, M Tateno, AE Harman-Ware, M Crocker, J Awika, S DeBolt. 2014. Mutagenesis Breeding for Increased 3-Deoxyanthocyanidin Accumulation in Leaves of Sorghum bicolor (L.) Moench: A Source of Natural Food Pigment. *Journal of Agricultural and Food Chemistry* 62, 1227-1232.
  32. F Barros, J Awika<sup>§</sup>, LW Rooney. 2014. Effect of molecular weight profile of sorghum proanthocyanidins on resistant starch formation. *Journal of the Science of Food and Agriculture* 94, 1212–1217.
  33. P Zhang, TO Jondiko, M Tilley, JM Awika\*. 2014. Effect of high molecular weight glutenin subunit composition in common wheat on dough properties and steamed bread quality. *Journal of the Science of Food and Agriculture*, 94, 2801-2806.
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**C. Books**

1. *Gluten-Free Ancient Grains: Cereals, Pseudocereals and Legumes--Sustainable, Nutritious, and Health-Promoting Foods for the 21st Century*. 2017. Taylor, JRN & Awika, JM, eds., Woodhead Publishing (Elsevier), 342 pp. ISBN: 978-0-08-100866-9
2. *Advances in Cereal Science: Implications to Food Processing and Health Promotion*, ACS Symposium Series. Oxford University Press: 2011. Awika, J. M., Piironen, V., Bean, S, eds. ISBN13: 978-0-8412-2636-4

**D. Book Chapters**

1. Rooney, LW, Awika, JM. 2005. Specialty sorghums for health foods. Pages 283-312, in Abdel-Aal, E. and Wood, P., eds. *Specialty Grains for Food and Feed*, Eagan Press, MN.
2. Awika, JM. 2011. Health promoting effects of cereal and cereal products. Chapter 4, in Tokusoglu, O., and Hall, C., eds. *Fruits and Cereal Bioactives: Sources, Chemistry and Applications*, CRC Press.

3. Awika, JM. 2011. Effect of bioactive components on dough rheology, baking and extrusion. Chapter 17, in Tokusoglu, O., and Hall, C., eds. *Fruits and Cereal Bioactives: Sources, Chemistry and Applications*, CRC Press.
4. Awika, J. M., Sorghum Flavonoids: Unusual Compounds with Promising Implications for Health. In *Advances in Cereal Science: Implications to Food Processing and Health Promotion*, American Chemical Society: 2011; Vol. 1089, pp 171-200.
5. Awika, J. M., Major Cereal Grains Production and Use around the World. In *Advances in Cereal Science: Implications to Food Processing and Health Promotion*, Awika, J. M., Piironen, V., Bean, S., Ed. American Chemical Society: 2011; Vol. 1089, pp 1-13.
6. SR Bean, JD Wilson, RA Moreau, A Galant, JM Awika, RC Kaufman, SL Adrianos, BP Ioerger. Structure and composition of the sorghum grain. In, Sorghum: State of the Art and Future Perspectives. I. Ciampitti and V. Prasad (ed.). American Society of Agronomy and Crop Science Society of America, Inc., 2016. doi:10.2134/agronmonogr58.2014.0081
7. Awika, J.M. Sorghum: Its Unique Nutritional and Health-promoting Attributes. Chapter 3, In, *Gluten-Free Ancient Grains: Cereals, Pseudocereals and Legumes--Sustainable, Nutritious, and Health-Promoting Foods for the 21st Century*. Taylor, JRN & Awika, JM, eds., Woodhead Publishing, 2017; Pages 21–54.
8. Taylor, JRN & Awika, JM. Future Research in the Ancient Grains. Chapter 11 In, *Gluten-Free Ancient Grains: Cereals, Pseudocereals and Legumes--Sustainable, Nutritious, and Health-Promoting Foods for the 21st Century*. Taylor, JRN & Awika, JM, eds., Elsevier, 2017; Pages 297–328.
9. Joseph Awika, Leonnard Ojwang, Audrey Girard. Anthocyanins, Deoxyanthocyanins and Proanthocyanidins as Dietary Constituents in Grain Products. Chapter 14 in *Cereal Grain-based Functional Foods*. Trust Beta, and Mary E Camire, Eds., Royal Society of Chemistry, 2019, 305-331.
10. Kwaku G. Duodu1, Joseph M. Awika. Phytochemical-Related Health-Promoting Attributes of Sorghum and Millets. Chapter 8 in *Sorghum and Millets: Chemistry, Technology, and Nutritional Attributes*. Taylor, J.R.N., Duodu, K.G., Eds., Woodhead Publishing, 2019, 225-258.
11. Awika, J.\* Foreword. *Breeding Sorghum for Diverse End Uses*. Arun C., Visarada, K., Bhat, B. V., Tonapi, V. A., Eds. Woodhead Publishing, 2019; VX (*Foreword*).

#### A. Published Abstracts

Key: \*Refereed abstracts; ALL CAPS = presenting author; underlined = Dr. Awika's graduate advisee. All listed abstracts were presented.

##### 1. National/International level scientific meeting or symposium

###### a. Invitational

1. J. AWIKA, Improving functional performance of climate resilient food crops to address food security and human health: Genomics meets food science. Institute of Food Technologists Annual Meeting, Virtual, July 10-13, 2021.
2. J. AWIKA, Transforming raw material into food products that meet changing consumer needs: Advances and challenges. American MENSA Foundation Colloquium, Houston Texas, July 5, 2021.
3. J. AWIKA, Teferra, T. Sorghum, a resilient crop uniquely suited to meet nutritional needs of the 21st century. In 'Novel grain quality attributes, processing approaches and functional properties' symposium. Cereal & Grains Association Annual Meeting, Denver CO, Nov 3-5, 2019
4. J. AWIKA. The nexus between polyphenols and dietary carbohydrate quality: towards healthier high 'carb' foods. In 'Exploiting natural polyphenols to improve dietary quality of carbohydrates and their benefits to health' symposium. Cereal & Grains Association Annual Meeting, Denver CO, Nov 3-5, 2019
5. J. AWIKA. Sorghum bioactives as functional and health promoting food ingredients. International Sorghum Conference, Cape Town, S. Africa, April 9-12, 2018
6. J. AWIKA. Health-promoting attributes of sorghum. International Sorghum Workshop, S. African Department of Science and Technology, Pretoria, April 6, 2018.
7. J. AWIKA. Exploiting sorghum and millet bioactives as functional and health promoting food ingredients. Organics and Millets 2018-International Trade Fair and Conference, Bengaluru, India, January 19-21, 2018.
8. J. AWIKA. Sorghum & Millets: Value chain, gaps and Opportunities in the US. Organics and Millets 2018-International Trade Fair and Conference, Bengaluru, India, January 19-21, 2018.
9. J. AWIKA. Sorghum & Millets as Vehicles for Chronic Disease Prevention. Indian Institute of Millets Research, Hyderabad, India, January 23, 2018.
10. J. AWIKA. Exploiting unique sorghum polyphenols as bioactive and functional food ingredients. Kansas State University Center for Sorghum Improvement Seminar series, June 04, 2017.
11. J. AWIKA. Exploiting polyphenol chemistry to enhance benefits of whole grains to colon health. University of Minnesota Food Science & Nutrition Department graduate seminar series, Jan 29, 2017.
12. J. AWIKA; Ojwang LO; Yang, L.; S. Agah; C. Allred; S. Talcott. Whole grain polyphenols in colon health: Positive interaction of complementary sorghum-legume flavonoids. Whole Grain Polyphenols and Health Symposium; 252<sup>nd</sup> American Chemical Society National Meeting, Philadelphia, PA, Aug 21-25, 2016.
13. J. AWIKA; Ojwang LO; Yang, L. Polyphenols in grain pulses and their contribution to health benefits associated with the pulses. Crop Science Society of America, Minneapolis, MN, November 18-22, 2015.
14. D. B. HAYS, J. Awika, W. Rooney, J. Taylor. Prospects for genetic improvement of Ancient Grains. AACCC International Centennial Meeting, Minneapolis, MN, October 15-18, 2015.



15. J. AWIKA. Ancient Grains: Do they really have better nutritional quality and health promoting properties than the Big 4 cereals? AACC International Centennial Meeting, Minneapolis, MN, October 15-18, 2015.
16. J. AWIKA, Shima Agah. Strong positive interaction of combined cereal-legume polyphenols against oxidative stress and inflammation. International Society for Nutraceuticals and Functional Foods (ISNFF) Conference, Wuxi, China, Sept 20-23, 2015.
17. J M AWIKA. Sorghum polyphenols as bioactive and functional food ingredients. Sorghum Improvement Conference of North America (SICNA) annual meeting, Manhattan, KS, Sept 1-3, 2015.
18. JOSEPH AWIKA, Frederico Barros, Derrick Amoako. Emerging evidence on potential application of grain polyphenols to reduce carbohydrate availability in foods. In: Current issues relevant to phytonutrients in grains and their health implications Symposium. ISNFF Conference, Istanbul Turkey, October 14-17, 2014.
19. AWIKA, J., Yang, L., Allred, K., Allred, C. Unusual composition of bioactive flavonoids accounts for the enhanced chemoprotective properties of sorghum relative to other grains. International Symposium on Bioactive Compounds in Cereal Grains and Foods in Vienna, ICC, Austria, 24 – 25 April 2014.
20. AWIKA, J. 2013. Emerging evidence on the role of sorghum and millet polyphenols in nutrition and disease prevention: Implications for global nutrition challenges and opportunities to expand food use. Global Consultation on Millets Promotion for Health & Nutritional Security, Directorate of Sorghum Research, Hyderabad, India. Dec 18 – 20, 2013.
21. K. G. Duodu, J. M. AWIKA. 2013. Overview of the effect of processing on non-nutritive phytochemicals in grains and implications for the health food market. AACC Symposium; Bioactive Components of Grains: Health Benefits, Effects of Processing, and Bioavailability. AACC International Annual Meeting 2-S, Sept 29 – Oct 2, Albuquerque, NM.
22. L. YANG, K. F. Allred, L. Dykes, C. D. Allred, J. M. Awika. 2013. Whole grains in colon cancer prevention: Estrogen-like activity of minor polyphenols. AACC Symposium; Bioactive Components of Grains: Health Benefits, Effects of Processing, and Bioavailability. AACC International Annual Meeting 1-S, Sept 29 – Oct 2, Albuquerque, NM.
23. Leonnard O. Ojwang; Liyi Yang; Susanne Talcott; Clint Allred; JOSEPH M. AWIKA. Cereal-legume synergy: Exploiting differences in polyphenolic composition of sorghum and cowpea to provide complementary health benefits. American Association of Cereal Chemists International Meeting, Hollywood, FL, October 2012.
24. AWIKA, JM, Talcott, S., Ojwang L., Gawde, A. Singh, BB. 2012. Cowpea for nutrition and health; preliminary collaborative research findings. Dry Grain Pulses Collaborative Research Support Program (CRSP) Global Meeting. February 12 – 18, 2012 Kigali, Rwanda.
25. J. AWIKA, Archana Gawde, Leonnard Ojwang, B. B. Singh. 2012. Identifying health attributes of cowpea. 72<sup>nd</sup> Southern Region of the American Society of Horticultural Science, Feb 4-7, Birmingham, AL.
26. Liyi Yang, Kimberly F. Allred, Dykes, L., Clinton D. Allred, and JOSEPH M. AWIKA. 2011. Phytoestrogenic Properties of Sorghum with Different Phenolic Composition. Cereal

- Chemistry and Health Symposium, American Chemical Society Annual meeting, Anaheim, CA, Mar 25-31, 2011.
27. JOSEPH M. AWIKA, Liyi Yang, and Leonnard Ojwang. 2011. Sorghum flavonoids in cancer prevention. Cereal Chemistry and Health Symposium, American Chemical Society Annual meeting, Anaheim, CA, Mar 25-31, 2011.
  28. JOSEPH AWIKA, Archana Gawde, Leonnard Ojwang, B. B. Singh. 2011. Potential of cowpea as a health promoting food to prevent chronic disease. 71<sup>st</sup> Southern Region of the American Society of Horticultural Science, Feb 5-7, Corpus Christi, TX.
  29. ROONEY, LW, Dyke, L, Awika JM. 2009. Special sorghums for health foods, pages 85-89, in: *Functional Foods for Chronic Diseases - Diabetes and Related Diseases: The 6<sup>th</sup> International Conference Proceedings*, Dec 4-5, Texas Woman's University. Martirosyan, DM, and Prasad, C., eds. Functional Foods Center Inc., Richardson, TX.
  30. AWIKA, JOSEPH. 2009. Byproducts of sorghum processing as a source of health-promoting ingredients. Sorghum Improvement Conference of North America (SICNA) biennial meeting, Feb 25-26, Grapevine, TX.
  31. AWIKA, JM. 2006. Use of sorghum by-products to enhance health of the American population. Healthy Products from Agricultural By-Products Symposium, *ACS National meeting*, March 26-30, Atlanta, GA.
  32. AWIKA, JM, Rooney, LW. 2004. Antioxidant properties of specialty sorghums. Sorghum Symposium, AACC Annual Meeting, September 19-22, San Diego, CA.
  33. AWIKA, JM, Dykes, L, Gu, L, Rooney, LW, Prior, L. 2004. Effect of processing on molecular weight distribution and antioxidant properties of sorghum proanthocyanidins. 4<sup>th</sup> Tannin Conference, *American Chemical Society (ACS) Annual Meeting*, August 22-26, Philadelphia, PA. <http://oasys2.confex.com/acs/228nm/techprogram/S15616.HTM>.

### *Volunteer*

34. GABRIELLE SCOTT and Joseph Awika. Impact of heat treatment on structure and functionality of sorghum proteins with altered protein body morphology. Cereals and Grains Association Meeting, Schaumburg, Illinois, Oct 18-20, 2023.\*
35. CYPRIAN SYEUNDA and Joseph Awika. Flavones contribute to strong Maillard reaction product formation in a model system. Cereals and Grains Association Meeting, Schaumburg, Illinois, Oct 18-20, 2023.\*
36. TOYOSI GEORGE and Joseph Awika. Polymeric proanthocyanidins protects 3-deoxyanthocyanins colloidal complex from degradation effect of ascorbic acid. Cereals and Grains Association Meeting, Schaumburg, Illinois, Oct 18-20, 2023.\*
37. SYEUNDA, C., and Awika, J.M. Effect of cereal flavonoids on inhibition of Maillard reaction production formation. IFT First, Chicago, Illinois, Jul 16-19, 2023.\*
38. TOYOSI GEORGE and Joseph Awika. Sorghum polymeric proanthocyanidin improves the stability of 3-Deoxyanthocyanins in aqueous colloidal system. IFT First, Chicago, Illinois, Jul 16-19, 2023.\*

39. GABRIELLE SCOTT and Joseph Awika. Mechanism of Improved Functionality in High Protein-Digestibility Trait Sorghum Endosperm. Cereal & Grains Association Annual Meeting, Minneapolis, MN, Nov 9-11, 2022.\*
40. CYPRIAN SYEUNDA and Joseph Awika. Effect of cereal derived polyphenol structure on non-volatile Maillard reaction product formation. Cereal & Grains Association Annual Meeting, Minneapolis, MN, Nov 9-11, 2022.\*
41. CHEN CHEN and Joseph Awika. Effect of Proanthocyanidins on Pulse Proteins Properties. Cereal & Grains Association Annual Meeting, Minneapolis, MN, Nov 9-11, 2022.\*
42. SULEIMAN ALTHAWAB and Joseph Awika. Effect of irradiating starch-proanthocyanidins complexes on pasting properties and in-vitro starch digestibility. Cereal & Grains Association Annual Meeting, Minneapolis, MN, Nov 9-11, 2022.\*
43. TOYOSI GEORGE and Joseph Awika. Storage solvent contributes to the enhanced color intensity of Sorghum 3-Deoxyanthocyanins. Cereal & Grains Association Annual Meeting, Minneapolis, MN, Nov 9-11, 2022.\*
44. KATHERINE LE MERE and Joseph Awika. Effect of heat treatment on the stability of 3-deoxyanthocyanin-pectin complexes. Institute of Food Technologists Annual Meeting, Chicago, IL, July 16-19, 2022.\*
45. CYPRIAN SYEUNDA and Joseph Awika. Effects of sorghum proanthocyanidins on Maillard reaction product formation. Institute of Food Technologists Annual Meeting, Chicago, IL, July 16-19, 2022.\*
46. GABRIELLE SCOTT and Joseph Awika. Effects of a High Protein Digestibility (HD) Trait on Sorghum Endosperm Functionality in a Chemically Leavened Batter System. Institute of Food Technologists Annual Meeting, Chicago, IL, July 16-19, 2022.\*
47. SULEIMAN ALTHAWAB and Joseph Awika. Effect of Crosslinking Starch with Proanthocyanidins and POCl<sub>3</sub> on Pasting Properties and In vitro Starch Digestibility. Institute of Food Technologists Annual Meeting, Chicago, IL, July 16-19, 2022.\*
48. TOYOSI GEORGE and Joseph Awika. Trends in growth of Sorghum research: insight from two decades of scientific studies. Sorghum Improvement Conference of N. America, Dallas, TX, Mar 28-30, 2022.
49. CYPRIAN SYEUNDA and Joseph Awika. Effect of polyphenol profile on development of Maillard reaction products in bran. Cereal & Grains Association Annual Meeting, Calgary, Canada, Oct 25 – Nov 13, 2020 (*Virtual meeting due to COVID*).\*
50. SULEIMAN A ALTHAWAB and Joseph Awika. Effect of food processing conditions on digestibility of proanthocyanidin-complexed starch. Cereal & Grains Association Annual Meeting, Calgary, Canada, Oct 25 – Nov 13, 2020 (*Virtual meeting due to COVID*).\*
51. JULIA BRANTSEN and Joseph Awika. Effect of amphiphilic polysaccharides on 3-deoxyanthocyanin stability in a beverage model. Cereal & Grains Association Annual Meeting, Denver CO, Nov 3-5, 2019.\*
52. SULEIMAN A ALTHAWAB and Joseph Awika. Effects of sorghum proanthocyanidin interactions with partially gelatinized wheat starch and potato starch on resistant starch content. Cereal & Grains Association Annual Meeting, Denver CO, Nov 3-5, 2019.\*

53. KAITLYN M DUKE and Joseph Awika. The use of microwave assisted extraction to increase sorghum polyphenolic extraction efficiency. Cereal & Grains Association Annual Meeting, Denver CO, Nov 3-5, 2019.\*
54. AUDREY L. GIRARD and Joseph Awika. Effect of condensed tannins on wheat, barley, and rye flour functionality. Cereal & Grains Association Annual Meeting, Denver CO, Nov 3-5, 2019.\*
55. AUDREY L. GIRARD and Joseph Awika. Effect of tannins on gluten film formation and stabilization. AACCI Annual Meeting, October 21-23, 2018, London, UK.\*
56. JULIA F. BRANTSEN, and Joseph M. Awika. Stabilizing effect of condensed tannins on pectin–3-deoxyanthocyanin solutions and possible mechanisms involved. AACCI Annual Meeting, October 21-23, 2018, London, UK.\*
57. JULIA F. BRANTSEN, and Joseph M. Awika. Effect of pectins on aqueous stability of sorghum 3-deoxyanthocyanins extracted using microwave energy. IFT Annual Meeting, July 15-18, 2018, Chicago IL.\*
58. TADESSE F. TEFERRA, William Rooney, and Joseph Awika. Field emission -scanning electron microscopy (FE-SEM) as a method of screening sorghum lines with highly digestible protein mutation. International Sorghum Conference, Cape Town, S. Africa, April 9-12, 2018.
59. JULIA F. BRANTSEN, Shreeya Ravisankar, and Joseph M. Awika. Effect of microwave energy on sorghum 3-deoxyanthocyanins and copigments. AACCI Annual Meeting, October 8-11, 2017, San Diego, CA.\*
60. AUDREY L. GIRARD, Scott Bean, & Joseph M. Awika. Elucidating mechanisms for proanthocyanidin interactions with gluten proteins. AACCI Annual Meeting, October 8-11, 2017, San Diego, CA.\*
61. SHREEYA RAVISANKAR, and Joseph M. Awika. Mechanisms for strong synergistic anti-inflammatory action of cereal-pulse flavonoid combinations in Caco-2 monolayer model. AACCI Annual Meeting, October 8-11, 2017, San Diego, CA.\*[1<sup>st</sup> PLACE GRADUATE RESEARCH COMPETITION WINNER]
62. TADESSE F. TEFERRA, and Joseph M. Awika. Field Emission - Scanning Electron Microscopy (FE-SEM) as a rapid and robust method of screening sorghum lines with highly digestible protein trait. AACCI Annual Meeting, October 8-11, 2017, San Diego, CA.\*
63. DERRICK B. AMOAKO and Joseph M. Awika. Interactions involved in the formation of starch-tannin complexes. AACCI Annual Meeting, October 23-26, 2016, Savannah, GA.\*
64. JULIA F. BRANTSEN and Joseph M. Awika. Effect of degree of pectin methoxylation on aqueous stability of sorghum 3-deoxyanthocyanins. AACCI Annual Meeting, October 23-26, 2016, Savannah, GA.\*
65. AUDREY L. GIRARD, M Elena Castell-Perez, & Joseph M. Awika. Effect of proanthocyanidin MW profile on dough rheology. AACCI Annual Meeting, October 23-26, 2016, Savannah, GA.\*

66. SHREEYA RAVISANKAR, and Joseph M. Awika. Structural profiling of flavonoids in different cowpea and sorghum phenotypes for potential synergistic bioactivity. AACCI Annual Meeting, October 23-26, 2016, Savannah, GA.\*
67. TADESSE F. TEFERRA, Derrick B. Amoako, and Joseph M. Awika. Functional properties of improved high protein digestibility-hard endosperm sorghum lines. AACCI Annual Meeting, October 23-26, 2016, Savannah, GA.\*
68. TADESSE F. TEFERRA, Derrick B. Amoako, and Joseph M. Awika. Functional properties of combined waxy/heterowaxy – high digestible protein traits in hard endosperm sorghum. Sorghum Improvement Conference of North America (SICNA) Annual Meeting, Sept 19-21, Manhattan, KS.
69. CRYSTAL WATERS, Rhonda K. Miller, Chris R. Kerth, Christine Z. Alvarado, Joseph M. Awika, William L. Rooney. Sorghum bran as an antioxidant in pre-cooked ground pork and poultry products. American Meat Science Association, AMSA2016-1146
70. D. B. AMOAKO, J. M. Awika. Interaction of proanthocyanidins with partially gelatinized normal and waxy maize starch and impact on in-vitro starch digestibility. AACCI Centennial Meeting, 46-S, October 18-21, 2015, Minneapolis, MN.\* [2<sup>nd</sup> PLACE GRADUATE RESEARCH COMPETITION WINNER]\*
71. S. AGAH, H. Kim, S. Talcott, J. Awika. Mechanisms for synergistic interaction of sorghum & black-eyed pea flavonoid mixtures in Caco-2 cell model. AACC International Annual meeting. AACCI Centennial Meeting 226-P, October 18-21, 2015, Minneapolis, MN.\*
72. A. L. GIRARD, J. M. Awika. Effect of sorghum proanthocyanidin interaction with gluten on dough rheology. AACCI Centennial Meeting, 120-P, October 18-21, 2015, Minneapolis, MN.\*
73. AGAH, SH., Yang, L., and Awika, J. Synergistic effect of combining sorghum and cowpea polyphenols on reducing LPS-induced inflammation in non-malignant colon myofibroblast in vitro. AACC International Annual meeting 44-O, Oct 5 – 8, 2014, Providence, RI.\*
74. HERRMAN, J. Awika. Improving aqueous stability of sorghum 3-deoxyanthocyanin pigments for food colorant application. AACC International Annual meeting 50-S, Oct 5 – 8, 2014, Providence, RI. [3<sup>rd</sup> PLACE GRADUATE RESEARCH COMPETITION WINNER]\*
75. K. L. Dunn, A. L. GIRARD, S. R. Bean, J. M. Awika. Effects of sorghum polyphenols on wheat protein profile during tortilla processing. AACC International Annual meeting 41-O, Oct 5 – 8, 2014, Providence, RI.\*
76. B. AMOAKO, J. M. Awika. Effects of the interaction of sorghum proanthocyanidins with ungelatinized corn starch on starch digestibility. AACC International Annual meeting 98-P, Oct 5 – 8, 2014, Providence, RI.\*
77. P. Zhang, T. Liu, J. Yao, L. YANG, H. Ma, J. M. Awika. 2013. Quality performance of an excellent Chinese soft wheat cultivar and its derivative lines. AACC International Annual meeting 91-P, Sept 29 – Oct 2, Albuquerque, NM.\*
78. K. L. DUNN, T. O. Jondiko, F. Barros, J. M. Awika. 2013. Effects of sorghum bran fortification on dough rheology, starch digestibility, and phenolic profile of wheat flour tortillas. AACC International Annual meeting 74-P, Sept 29 – Oct 2, Albuquerque, NM.\*



79. HERRMAN, L. Yang, J. Awika. 2013. Microwave energy significantly increases extractability of grain pigments. AACC International Annual meeting 231-P, Sept 29 – Oct 2, Albuquerque, NM.\*
80. S. AGAH, L. Yang, J. Awika. 2013. Potential synergistic effect of combining sorghum and cowpea polyphenols. AACC International Annual meeting 34-P, Sept 29 – Oct 2, Albuquerque, NM.\*
81. T. JONDIKO, L. Yang, M. Tilley, J. M. Awika. 2013. Prediction of tortilla quality using multivariate model of kernel, flour and dough properties. AACC International Annual meeting 25-P, Sept 29 – Oct 2, Albuquerque, NM.\*
82. COLLISON, L. Yang, L. Dykes, S. Murray, J. Awika. 2013. Influence of genetic background on the anthocyanin and co-pigment content and profile of colored corn. AACC International Annual meeting 47-P, Sept 29 – Oct 2, Albuquerque, NM.\*
83. V. M. TALEON, J. M. Awika, S. U. Mertens-Talcott, L. W. Rooney. 2013. Absorption of sorghum polyphenolics using an in-vitro Caco-2 cell model. AACC International Annual meeting 160-P, Sept 29 – Oct 2, Albuquerque, NM.\*
84. BARROS, J.M. Awika, and L. W. Rooney. 2013. Effect of molecular weight of sorghum tannins on resistant starch formation. AACC International Annual meeting 54-P, Sept 29 – Oct 2, Albuquerque, NM.\*
85. BARROS, J.M. Awika, and L. W. Rooney. 2013. Role of condensed and hydrolysable tannins on resistant starch formation. AACC International Annual meeting 55-P, Sept 29 – Oct 2, Albuquerque, NM.\*
86. K. P. SISKA, C. Wu, J. Awika. 2013. Anti-inflammatory properties of cowpea polyphenols in raw 264.7 macrophages. AACC International Annual meeting 30-P, Sept 29 – Oct 2, Albuquerque, NM.\*
87. DOROTHY HERRMAN, Liyi Yang, Joseph Awika. 2013. Microwave Accelerated Reaction System Increases Extractability of Sorghum 3-deoxyanthocyanin Pigments. Sorghum Improvement Conference of North America (SICNA) Annual Meeting, August 28-30, Lubbock, TX. [BEST GRADUATE RESEARCH COMPETITION WINNER]\*
88. KRISTEN L. DUNN, Liyi Yang, Frederico Barros, and Joseph M. Awika. 2013. Effects of sorghum bran fortification on phenolic profile, proanthocyanidin content, and starch digestibility of wheat flour tortillas. Sorghum Improvement Conference of North America (SICNA) Annual Meeting, August 28-30, Lubbock, TX. [2<sup>nd</sup> PLACE GRADUATE RESEARCH COMPETITION WINNER]\*
89. LIYI YANG, Linda Dykes, and Joseph M. Awika. 2013. Thermal stability of sorghum 3-deoxyanthocyanin pigments. Sorghum Improvement Conference of North America (SICNA) Annual Meeting, August 28-30, Lubbock, TX.\*
90. BARROS, J.M. Awika, and L. W. Rooney. 2013. Effect of sorghum bran tannin on resistant starch and dietary fiber contents of toasted bread. Sorghum Improvement Conference of North America (SICNA) Annual Meeting, August 28-30, Lubbock, TX.\*

91. PINGPING ZHANG, Tom O. Jondiko, Michael Tilley, and Joseph M. Awika. 2013. Effect of high molecular weight glutenin subunit deletion on gluten and dough properties in common wheat. IFT Annual Meeting 066-12, July 13 – 16, Chicago, IL.\*
92. JONDIKO, T.O., Tuncil, Y.E., Puerta-Gomez, A.F., Castell-Perez, M.E., and Awika, J.M. 2012. Use of dynamic tests to determine the effects of sodium reduction on dough rheology and its correlation with tortilla quality. AACC International Annual meeting, October 2012, Hollywood, FL.\*
93. FREDERICO BARROS, J. M. Awika and L.W. Rooney. 2012. Effect of sorghum polyphenols on in-vitro starch digestibility. AACC International Annual meeting, October 2012, Hollywood, FL.\* [SECOND PLACE STUDENT PAPER COMPETITION WINNER].
94. LIYI YANG, Linda Dykes, and Joseph M. Awika. 2012. Stability of sorghum based pigments to thermal degradation. AACC International Annual meeting, October 2012, Hollywood, FL.\*
95. TUNCIL, Y.E., Jondiko, T.O., Tilley, M., Hays, D.B., and Awika, J. 2012. Analysis of Glu-1 Deletion lines reveals the importance of high molecular weight glutenin subunits 7+9 at *Glu-B1* in wheat flour tortilla making. AACC International Annual meeting, October 2012, Hollywood, FL.
96. ARCHANA J. GAWDE, Bir. B. Singh, Jeff Ehler and Joseph Awika. 2012. Effect of post-flowering drought on flavonoid composition and antioxidant activity in *Vigna unguiculata*. ASA Annual Meeting, Cincinnati, OH, Oct 21-24.\*
97. GAWDE, B. B. Singh, J. Ehlers, J. M. Awika. 2011. Associating *Vigna unguiculata* phenotypes with composition of bioactive compounds. *Cereal Foods World*, 56, A41-A42.\*
98. L. O. OJWANG and Joseph M Awika. 2011. Anti-inflammatory properties of cowpea phenotypes with different phenolic profiles [BEST GRADUATE RESEARCH COMPETITION WINNER]. *Cereal Foods World*, 56, A3-A4.\*
99. FREDERICO BARROS, Joseph M. Awika and Lloyd W. Rooney. 2011. Effect of sorghum phenolics on starch pasting, thermal and digestive properties. *Cereal Foods World*, 56, A30-A30.\*
100. LIYI YANG, K. F. Allred, B. Geera, C. D. Allred, J. M. Awika. 2011. Sorghum may contribute to cancer prevention via activities mediated by estrogen receptor. Sorghum Improvement Conference of North America (SICNA) Annual meeting, Stillwater, OK.
101. ARCHANA GAWDE, B B Singh, Jeff Ehlers, & Joseph Awika. Seed phenotypes show high correlation with nutritional compounds in *Vigna unguiculata*. National Cowpea Improvement Association Meeting, Corpus Christi, TX, Feb 5-7, 2011.
102. LIYI YANG, Kimberly F. Allred, Clinton D. Allred, and Joseph M. Awika. 2010. Phytoestrogenic Potential of Sorghum Phenolic Extracts. AACC International Annual meeting, October 2010, Savannah, GA. *Cereal Foods World*, 55, A76-A76.\*
103. T. JONDIKO, F. Barros, J. N. Alviola, L. W. Rooney, M. Tilley, A. Ibrahim, D. Hays and J. Awika. 2010. Relationship of tortilla quality to flour and dough properties. AACC International Annual meeting, October 2010, Savannah, GA. *Cereal Foods World*, 55, A52-A52.\*



104. Archana J. Gawde, B. B. Singh, Jeff Ehlers, and JOSEPH AWIKA. 2010. Association of Seedcoat Color to Polyphenols, Tannins and Antioxidant Activity in *Vigna unguiculata* Varieties. Fifth World Cowpea Conference, Dakar Senegal, Sept 26 – Oct 2, 2010.
105. B.B. SINGH and J. Awika. 2010. Breeding high yielding cowpea varieties with enhanced nutritional and health traits. Fifth World Cowpea Conference, Dakar Senegal, Sept 26 – Oct 2, 2010.
106. JONDIKO, T.O, Alviola, J.N, Awika, J.M and Rooney, L.W. 2010. Improving shelf stability of fiber enriched wheat flour tortillas using high gluten bread flour. IFT National meeting, Chicago, IL.\*
107. JONDIKO, T, Alviola J. N, Rooney L. W and Awika J.M. 2009. Effects of resistant starch on the physical, sensory and textural properties of wheat flour tortillas. AACC International Annual meeting, Baltimore, MD. *Cereal Foods World*, 54, A48-A48.\*
108. OJWANG, LO; Awika JM. 2009. Effect of bisulfite on color properties of 3-deoxyanthocyanins at different pH levels. AACC International Annual meeting, Baltimore, MD. *Cereal Foods World*, 54, A57-A57.\*
109. YANG, LIYI; Awika, JM. 2009. Inhibitory effect of sorghum 3-deoxyanthocyanin structure on esophageal cancer cell proliferation *in vitro*. AACC International Annual meeting, Baltimore, MD [SECOND PLACE STUDENT PAPER COMPETITION WINNER]. *Cereal Foods World*, 54, A31-A31.\*
110. LIYI YANG and Joseph M. Awika. 2009. Potential of sorghum to protect against gastrointestinal cancer. Sorghum Improvement Conference of North America (SICNA) biennial meeting, Feb 25-26, Grapevine, TX. [FIRST PLACE STUDENT PAPER COMPETITION WINNER].\*
111. Ojwang, LO; J. Awika. 2008. Influence of ascorbic acid, pyruvate and pH on color stability of 3-deoxyanthocyanins. *Cereal Foods World* 53:A72\*
112. VICTORIA SPRADLING, Joseph Awika, Elizabeth Koutsos, and Ellen Dierenfeld. 2007. Tannin Levels in Various Plants and their Possible Effect as Iron Chelators in Lemurs. American Association of Zoo Veterinarians, October 2007 Annual Meeting, Knoxville, TN.
113. AWIKA, JM. 2007. Stability of sorghum 3-deoxyanthocyanin pigments exposed to light in acidic environments. *Cereal Foods World* 52:A35\*
114. OJWANG, L.O.; Awika, JM. 2007. Stability of sorghum 3-deoxyanthocyanin-pyruvate complexes against SO<sub>2</sub> bleaching. AACC Annual Meeting, San Antonio, TX *Cereal Foods World* 52:A55\*
115. AWIKA, JM; Rooney, LW; McDonough, CM. 2005. Deoxyanthocyanins: stable natural pigments from sorghum with functional properties. Food and Natural Bioactives in Health Promotion and Disease Prevention Symposium, *International Chemical Congress of Pacific Basin Societies* (Pacifichem), Dec 15-20, Honolulu, HI.
116. AWIKA, JM., McDonough, C., Rooney, LW. 2004. Specialty sorghums have a high level of stable 3-deoxyanthocyanins. AACC Annual Meeting, September 19-22, San Diego, CA.\*

117. MCDONOUGH, C, Awika, J., Tuner, N.D., Xu, L., Rooney, LW. 2004. The potential for use of antioxidants from sorghum bran in foods as countermeasures against radiation damage in space. AACC Annual Meeting, September 19-22, San Diego, CA.\*
118. TURNER, D., Barron, M., Awika, J., Riaz, M., Waniska, R., and Rooney, L. 2004. The use of specialty sorghums for expanded snack food processing. AACC Annual Meeting, September 19-22, San Diego, CA.\*
119. XU, L., Turner, D., Awika, JM., Rooney, LW. 2004. Processing stability of specialty sorghum antioxidants. AACC Annual Meeting, September 19-22, San Diego, CA.\*
120. AWIKA, JM, Rooney, LW. 2004. Are cereals a viable source of antioxidants? Institute of Food Technologists Annual Meeting, July 12-16, Las Vegas, NV.  
[http://ift.confex.com/ift/2004/techprogram/session\\_3182.htm](http://ift.confex.com/ift/2004/techprogram/session_3182.htm)\*
121. TURNER, D.L., J. Awika, J.M. Riaz, and L.W. Rooney. 2003. Effects of extrusion on antioxidant and phenols levels among sorghum grains. AACC 88th Annual Meeting, September 28 - October 2, Portland, OR.\*
122. AWIKA, JM, Rooney, LW, Wu, X, Prior L, Cisneros-Zevallos, L. 2003. Screening methods to measure antioxidant activity of sorghum and sorghum products. AACC 88th Annual Meeting, September 28 - October 2, Portland, OR.\*
123. AWIKA, JM, ROONEY, LW, Wu, XL, Prior, RL, and Cisneros, L. 2003. Antioxidant properties of sorghum measured by three methods. In J. A. Dahlberg et al. (eds.) Proc. 23rd Biennial Grain Sorghum Res. and Util. Conf., Feb. 16-18, 2003, Albuquerque, New Mexico. p. 34.
124. MCDONOUGH, C.M., L. Dykes, J. Awika, L. W. Rooney, and R. D. Waniska. 2003. False positives for tannin sorghum in non-tannin sorghum using the bleach test. In J. A. Dahlberg et al. (eds.) Proc. 23rd Biennial Grain Sorghum Res. and Util. Conf., Feb. 16-18, 2003, Albuquerque, New Mexico. p. 35.
125. AWIKA, J.M., D. Gualberto, L.W. Rooney and W.L. Rooney. 2002. Properties of white food sorghums grown in different environments. AACC 87th Annual Meeting, October 13-17, Montreal, Quebec. <http://www.aaccnet.org/meetings/2002/abstracts/a02ma378.asp>\*
126. McDonough, C.M., Dykes, L., J. Awika, L.W. Rooney and R.D. Waniska. 2002. False positives for tannin sorghum in non-tannin sorghum using the bleach test. AACC 87th Annual Meeting, October 13-17, Montreal, Quebec.  
<http://www.aaccnet.org/meetings/2002/abstracts/a02ma286.asp> \*
127. AWIKA, J.M., Rooney, L.W., and Waniska, R.D. 2001. Exploring the potential of specialty sorghum bran fractions as a source of antioxidants. AACC 86th Annual Meeting, October 14-17, Charlotte, NC  
<http://www.aaccnet.org/meetings/2001/abstracts/a01ma189.htm>\*
128. AWIKA, JM, Rooney, LW, Waniska, RD. 2001. Exploring the potential of specialty sorghums as antioxidants in food systems. Proceedings of the 22<sup>nd</sup> Biennial Grain Sorghum Research and Utilization Conference, Nashville, TN, pp 103-107.
129. GORDON, LA, Awika, JM, Rooney, LW, Waniska, RD, Suhendro, EL. 2001. Characteristics of breads baked with sorghum brans high in phenolic compounds.

- Proceedings of the 22<sup>nd</sup> Biennial Grain Sorghum Research and Utilization Conference, Nashville, TN, pp 98-102.
130. MITRE-DIESTE, C.M., Gordon, L.A., Awika, J., Suhendro, E.L. and Rooney, L.W. 2001. Cookies made with sorghum brans high in phenols and catechins. 2001 Sorghum Industry Conference & 22<sup>nd</sup> Biennial Grain Sorghum Research and Utilization Conference, February 18-20, Nashville, TN, p. 54.
  131. AWIKA, J.M., Rooney, L.W. and Waniska, R.D. 2000. Comparing antioxidant potential of high tannin sorghums with those of common fruits and vegetables. AACC 85th Annual Meeting, November 5-9, Kansas City, MO, <http://www.scisoc.org/aacc/meeting/2000/abstracts/a00ma172.htm>.\*
  132. GORDON, L.A., Mitre-Dieste, M., Awika, J., Rooney, L.W., Suhendro, E.L. and R.D. Waniska. 2000. Characteristics of breads baked with sorghum brans high in antioxidants. AACC 85th Annual Meeting, November 5-9, Kansas City, MO, <http://www.scisoc.org/aacc/meeting/2000/Abstracts/a00ma201.htm>\*
  133. AWIKA, J.M., Rooney, L.W., and Suhendro, E.L. 2000. Sorghum phenols and catechins as antioxidants. IFT Annual Meeting and Food Expo, June 10-14, Dallas, TX, <http://www.ift.org/meetings/index.shtml> \*
  134. GORDON, L.A., Mitre-Dieste, C.M., Awika, J.M., Rooney, L.W., and Suhendro, E.L. 2000. Effects of sorghum brans on bread quality. IFT Annual Meeting and Food Expo, June 10-14, Dallas, TX, <http://www.ift.org/meetings/index.shtml> \*
  135. ROONEY, L.W., Awika, J.M., Mitre-Dieste, C.M., Gordon, L.A., Suhendro, E.L., and Waniska, R.D. 2000. Nutraceutical products from sorghum. IFT Annual Meeting and Food Expo, June 10-14, Dallas, TX, <http://www.ift.org/meetings/index.shtml>.\*
  136. SUHENDRO, ELLY L., Awika, Joseph and Rooney, Lloyd W. 1999. Composition and quality attributes of commercial food sorghum hybrids. Proceedings of the 21<sup>st</sup> Biennial Sorghum Improvement Conference of North America (SICNA), National Grain Sorghum Producers Association, Tucson, AZ, February 21-23, p. 37.
  137. AWIKA, J.M., Suhendro, E.L., Rooney, L.W. 1999. Milling properties of new food sorghum hybrids. AACC 84th Annual Meeting, October 31 - November 3, Seattle, WA.\*
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## **XI. SERVICE**

### **a. Professional involvement and activities**

#### *i. Membership*

- ❖ American Association of Cereal Chemists International (AACCI): 1998 – present
- ❖ Institute of Food Technologists (IFT) 1998 – present

- ❖ American Chemical Society (ACS) 2003 – 2012; 2017 - present

*ii. Participation in Professional Organizations – National (most recent first)*

1. Editorial Appointments

- ❖ **Editor**, Journal of Cereal Science: 2018 - present
- ❖ **Associate Editor**, Journal of the Science of Food and Agriculture: 2011 – 2019
- ❖ **Associate Editor**, Cereal Chemistry: 2013 – 2016.

2. Other appointments/participation

- ❖ **Chair**, Cereal and Grains Association, Carbohydrate Division, 2020-2021
- ❖ **Chair Elect**, Cereal and Grains Association, Carbohydrate Division, 2019-2020
- ❖ **Symposium Chair**, Exploiting natural polyphenols to improve dietary quality of carbohydrates and their benefits to health, Cereal & Grains Association Annual Meeting, Denver, CO, Nov 2-4, 2019.
- ❖ **Program Chair**, American Assoc Cereal Chemists Intl, Carbohydrate Division, 2018-2019
- ❖ **Secretary**, American Assoc Cereal Chemists Intl, Carbohydrate Division, 2017-2018
- ❖ **Grant Review Panelist**, USDA-NIFA Specialty Crops program, 2017.
- ❖ **Symposium Chair**, Clean label ingredient applications in the food industry, American Association of Cereal Chemists Int'l Annual Meeting, San Diego, Oct 8-11, 2017
- ❖ **Scientific Advisory Board Member**, Whole Grains Council – 2016 - present
- ❖ **Chair**, Chemistry and Utilization Division, Sorghum Improvement Conference of North America, 2015 – 2016.
- ❖ **National Program Review Panelist** – USDA-ARS Office of Scientific Quality Review. Appointed Dec 2014, panel review conducted in spring 2015.
- ❖ **Grant Reviewer**, USDA-NIFA (AFRI) Innovative Programs – 2015.
- ❖ **Symposium Co-Chair and Organizer**, American Association of Cereal Chemists International: Ancient Grains Symposium, AACCI Centennial Meeting, Minneapolis, MN, 2015.
- ❖ **Best Graduate Research Competition Judge**, American Association of Cereal Chemists International, 2013.
- ❖ **Symposium Chair and Organizer**, American Association of Cereal Chemists International: Cereal Chemistry and Health Symposium, AACCI National Meeting, Albuquerque, NM, Sept 30-Oct 3, 2013.
- ❖ **Symposium Chair and Organizer**, American Chemical Society: Cereal Chemistry and Health Symposium, 231st National Meeting, Anaheim CA, Mar 25-31, 2011.
- ❖ **Technical Committee Member**, Bioactive Compounds in Grains, American Association of Cereal Chemists International, 2011 – present

- ❖ **Product Development Competition Judge**, Institute of Food Technologists (IFT) Product Development Competition: Developing Solutions for Developing Countries. Appointed September 2009 to a 3 year term (2010 – 2012).
- ❖ **Award Selection Committee Jury Member**, Institute of Food Technologists (IFT) Bernard L. Oser Award: Appointed 2009/2010; 2010/2011.
- ❖ **Graduate Scholarship Panel Member**, Institute of Food Technologists (Carbohydrate Division); 2010-2011.
- ❖ **Abstracts Reviewer** for national meetings, American Chemical Society (Agricultural and Food Chemistry Division); 2011.
- ❖ **Abstracts Reviewer for National Meetings**, Institute of Food Technologists (Carbohydrate Division), 2010.
- ❖ **National Program Research Review Panel Member**, USDA-ARS Office of Scientific Quality Review, 2009-2010, panel meeting held in Baltimore, MD in 2010.
- ❖ **Local Section Chair**, American Chemical Society: Univ of Missouri, Columbia, 2007-2008.

*iii. Participation in National and International Organizations/Institutions*

*a) Invited speaking engagements*

- ❖ Guest lecturer, Federal university of Vicosa, Nutrition and Food Science, Mina Gerais, Brazil, Dec 1, 2022. (virtual)
- ❖ Speaker, Opportunities for Cereal Grain Components to Improve Human Nutrition and Health. Africa-ai-Japan forum, Jomo Kenyatta University of Agriculture and Technology (host). September 16, 2022 (remote delivery).
- ❖ Speaker, USA MENSA Annual Colloquium, Houston Texas, July 5, 2022.
- ❖ **Plenary Speaker**, Institute of Food Technologists (IFT), International Food Security Lectureship, Jul 19-21, 2021. (virtual)
- ❖ Guest lecturer, Federal university of Vicosa, Nutrition and Food Science, Mina Gerais, Brazil, June 10, 2021. (virtual)
- ❖ Speaker, Texas Tech University, Institute of Genomics for Crop Abiotic Stress Tolerance (IGCAST), 05/20/2021 (virtual)
- ❖ Speaker, Washington State University Nutrition & Food Science Graduate Seminar Series, 09/30/2020 (virtual)
- ❖ **Plenary speaker**, Whole Grains Council Conference, Rio De Janeiro, Brazil Sept 14-15, 2020 (*postponed due to COVID*)
- ❖ Speaker, Exploiting natural polyphenols to improve dietary quality of carbohydrates and their benefits to health symposium. Cereal & Grains Association Annual Meeting, Denver CO, Nov 3-5, 2019.
- ❖ Speaker, Novel grain quality attributes, processing approaches and functional properties symposium. Cereal & Grains Association Annual Meeting, Denver CO, Nov 3-5, 2019.

- ❖ **Plenary speaker**, Sorghum in the 21st Century Global Conference (5<sup>th</sup> International), Cape Town, South Africa, Apr 9–12, 2018.
- ❖ **Speaker**, South African Department of Science and Technology Sorghum Workshop, Pretoria, South Africa, April 6, 2018.
- ❖ **Plenary speaker**, International Trade Fair 2018 - Organics and Millets, Bengaluru, Karnataka, India, January 19-21, 2018.
- ❖ **Keynote speaker**, Indian Institute of Millets Research, Hyderabad, India, 01/23/2018.
- ❖ **Speaker**, Kansas State Univ Center for Sorghum Improvement Seminar series, 06/04/2017.
- ❖ **Speaker**, University of Minnesota Food Science & Nutrition Department graduate seminar series, Jan 29, 2017.
- ❖ **Speaker**, Whole Grain Polyphenols and Health Symposium; 252<sup>nd</sup> American Chemical Society National Meeting, Philadelphia, PA, Aug 21-25, 2016.
- ❖ **Speaker**, International Society for Nutraceuticals and Functional Foods (ISNFF), Wuxi, China, September 20 – 23, 2015.
- ❖ **Speaker**, Ancient Grains symposium. AACC International Centennial Meeting, Minneapolis, MN, October 15-18, 2015.
- ❖ **Featured speaker**, Sorghum Improvement Conference of North America (SICNA) annual meeting, Manhattan, KS, Sept 1-3, 2015.
- ❖ **Speaker**, Pulse improvement for health symposium, Crop Science Society of America, Minneapolis, MN, November 18-22, 2015
- ❖ **Speaker**, International Society for Nutraceuticals and Functional Foods (ISNFF), Istanbul, Turkey, October 14 – 17, 2014.
- ❖ **Invited participant**, Bill and Melinda Gates Foundation Program for Emerging Agricultural Research Leaders (PEARL) Workshop, Naivasha, Kenya, June 12 – 21, 2014.
- ❖ **Keynote speaker**, International Symposium on Bioactive Compounds in Cereal Grains and Foods, International Association for Cereal Science and Technology (ICC), Vienna, Austria, April 23 – 25, 2014.
- ❖ **Keynote speaker**, Global Consultation on Millets Promotion for Health & Nutritional Security, Directorate of Sorghum Research, Hyderabad, India. Dec 18 – 20, 2013
- ❖ **Invited Lecture**, Jiangsu Academy of Agricultural Sciences (JAAS) 80<sup>th</sup> Anniversary Ceremony, Nanjing, China, Nov 25 – 30, 2012.
- ❖ **Guest speaker**, University of Pretoria, Institute for Food, Nutrition and Well-being launching ceremony, Pretoria, S. Africa, May 28, 2012.

*b) Graduate student advising/external examiner*

- ❖ **External Examiner**, University of Pretoria, South Africa; Serge Fofou Mokatso, MSc Candidate (Food Science), 2016-2017.
- ❖ **External Examiner**, University of Pretoria, South Africa; Mr. PP Sibanda, MSc Candidate (Food Science), 2016-2017.
- ❖ **External Committee Member**, Monterrey Institute of Technology, Mexico; Ms. Beatriz Acosta, PhD Candidate (Food Engineering), 2012-2013.



- ❖ **External Examiner**, University of Pretoria, South Africa; Mr. Jeremiah Shelembe, PhD Candidate (Food Science), 2011-2012.
- ❖ **External Examiner**, University of Pretoria, South Africa; Mr. Muthulisi Siwela, PhD Candidate (Food Science), 2009.
- ❖ **External Examiner**, University of Pretoria, South Africa; Ms. Constance Chiremba, MSc Candidate (Food Science), 2009.

*c) Research grant review panels (accepted invitations)*

- ❖ British Research Council, Biotechnology and Biological Sciences Research Council (BBSRC), Swindon, UK, 2016
- ❖ Fulbright Scholars Program of Romania-Senior Awards, 2015
- ❖ National Research Foundation of South Africa, 2014.
- ❖ Netherlands Organization for Scientific Research (NWO); Netherlands, 2014.
- ❖ International Foundation for Science (IFS), Stockholm, Sweden: 2012.
- ❖ OMAFRA/University of Guelph Research Support, Guelph, Canada, 2011.

*iv. Scientific Journal Reviews*

Dr. Awika reviews approx. 10 articles per year, far below requests received from journal editors, due to time constraints. List of journals most frequently reviewed for:

- ❖ Food Chemistry
- ❖ Food Hydrocolloids
- ❖ Carbohydrate Polymers
- ❖ Comprehensive Reviews in Food Science & Food Safety
- ❖ International Journal of Biological Macromolecules
- ❖ Journal of Agricultural and Food Chemistry
- ❖ Food and Function
- ❖ Food Research International

**b. University/College service activities**

*i) Departmental*

- ❖ Chair, Food Science & Technology Graduate Programs Committee, 2020 – 2021
- ❖ Chair, Food Science & Technology Department Strategic Planning Committee, 2020
- ❖ *Nutrition and Food Science Department Faculty Search Committee*; conducted a search for a cluster hire of four new faculty members in the nutrition program (2015)
- ❖ *Nutrition and Food Science Department*; Assessment committee (2013-2017)
- ❖ *Nutrition and Food Science Department*: Graduate seminar committee (since 2009)
- ❖ *Nutrition and Food Science Department*: Bylaws Committee member (appointed fall 2011). Involved in defining bylaws that will govern the operations of the newly



integrated administration of NUTR and FSTC graduate programs under the NFSC Department beginning fall 2012.

- ❖ *Intercollegiate Faculty of Food Science*: Executive Committee member (2010-2013); involved in policy matters regarding operations of the intercollegiate faculty.
- ❖ *Nutrition and Food Science Department*: Undergraduate Programs Committee member (2009-2019); mostly dealt with curriculum issues and formulate and recommend policies to enhance the quality of undergraduate NUTR and FSTC programs.
- ❖ *Nutrition and Food Science Department*: FSTC Undergraduate Curriculum Review Sub-Committee (2010 - 2019). A sub-committee of the Undergraduate Programs Committee with the mandate to comprehensively revise the FSTC undergraduate curriculum to better meet stakeholder needs. This process is almost complete and recommendations have been made to the full faculty for a vote.
- ❖ *Intercollegiate Faculty of Food Science*: Seminar Committee (2009 - 2012); coordinates and conducts graduate seminar series for the intercollegiate faculty.
- ❖ *Soil & Crop Science Department*: Social Committee member (2009 - 2011).

ii) *College level*

- ❖ Chair, College Promotion and Tenure Committee, 2021
- ❖ Member, College Promotion and Tenure Committee, 2020 – 2021
- ❖ Member, College Graduate Programs Committee, 2020 – 2021
- ❖ Member, College Undergraduate Programs Committee, 2020 - 2021
- ❖ Neuhaus-Shepardson Grant reviewer, 2019
- ❖ International Agriculture Symposium Panelist, Texas A&M – March 02, 2013.
- ❖ College of Agriculture and Life Sciences Outstanding Alumni Award committee (2012)
- ❖ Texas A&M ‘Feed the Future’ Faculty Summit on International Agriculture organizing committee member and Speaker: October 6-7, 2011.
- ❖ Food Science and Technology Intercollegiate Graduate Program Transition Committee member (elected fall 2010); involved in defining a framework of operation for the transition of the graduate FSTC program to the NFSC department. This task was successfully accomplished and recommendations to dean submitted in 2011.
- ❖ Nutrition and Food Science Department Head Search Committee (2009); conducted successful search and hiring process for the current department head.

iii) *University level*

- ❖ Committee Member, College of Agriculture Vice Chancellor and Dean Search, 2017.
- ❖ Reviewer – Diversity Fellowship Applications – 2015; 2016
- ❖ Strengthening Democracy Grand Challenge Task Force – October 2013
- ❖ Faculty Senate – elected 2013 – 2016; resigned in 2014 due to scheduling conflict

- ❖ Member, Council of Principal Investigators –2012 - 2015
- iv) *Other*
  - ❖ Member, Intercollegiate Faculty of Food Science & Technology (2008 - 2012)
  - ❖ Member, Intercollegiate Faculty of Molecular & Environmental Plant Sciences (2009-2017)