

## Compiled Bibliography

### Feed the Future Innovation Lab for Collaborative Research on Grain Legumes (Legume Innovation Lab), FY2013 to FY2017

#### I. **Strategic Objective One: Advancing the Productivity Frontier for Grain Legumes**

Research output from LIL Projects SO1.A1, SO1.A2, SO1.A3, SO1.A5, SO1.B1

##### A. Refereed Journal Articles

- Agunbiade, T. A., B. S. Coates, W. L. Sun, M. R. Tsai, M. C. Valero, M. Tamo and B. R. Pittendrigh. 2017. [Comparison of the mitochondrial genomes of the Old and New World strains of the legume pod borer, \*Maruca vitrata\* \(Lepidoptera: Crambidae\)](#). *International Journal of Tropical Insect Science* **37**(3): 125-136.
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- Batieno B.J., Tignegre J.B., Sidibé H., Zongo H., Ouedraogo T.J., Danquah E., Ofori K. 2016. Field [Assessment of Cowpea Genotypes for Drought Tolerance](#). *International Journal of Sciences: Basic and Applied Research* **30**(4): 358-369. ISSN 2307-4531
- Beaver, J.S., E. Prophete, G. Démosthène, and T.G. Porch. 2016. [Registration of PR1146-138 Yellow Bean Germplasm Line](#). *J. Plant Registrations*. **10**:145-148.
- Beaver, J.S., E.H. Prophete, J.C. Rosas, G. Godoy Lutz, J.R. Steadman and T.G. Porch. 2014. [Release of 'XRAV-40-4' black bean \(\*Phaseolus vulgaris\* L.\) cultivar](#). *J. Agric. of the Univ. of Puerto Rico* **98**:83-87.
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- Maldonado-Mota C.R., Pastor-Corrales M.A., Hurtado-Gonzales O.P., Moghaddam S.M., Schroder S., McClean P.E., Pasche J., Lamppa R., Tobar-Piñon M.G., Villatoro-Merida J.C., Miranda A.N, Moscoso J.R., Agreda K., and Osorno J.M. 2017. Virulence diversity of *Colletotrichum lindemuthianum* in Guatemala and GWAS to identify genomic regions associated with anthracnose resistance in common bean. Oral session presented at The Biennial Bean Improvement Cooperative Conference, East Lansing, Michigan, United States. Oct. 29th to Nov.1st
- Maldonado-Mota, C., Villatoro, J.C., Miranda, A., Moscoso-Alfaro, J., Aldana, L.F. 2015. Fitomejoramiento de frijoles (*Phaseolus vulgaris*) biofortificados para Guatemala. Poster presentation at the Annual Meeting of the PCCMCA, Guatemala City, Guatemala, May 1–5 2015.
- Maredia, M., B. Reyes, M. Niango, B. Pittendrigh, and J. Bello-Bravo. 2014. Can animated educational materials induce learning and adoption among low-literate farmers? A field experiment on the dissemination of cowpea grain storage technologies in Burkina Faso. Sokoine University of Agriculture, Tanzania, June 25, 2014.
- Maredia, M.K.; D. DeYoung, D.; E. Prophete, E.; C.D. Joseph, C.D.; Beaver, J.; T. Porch, T. 2017. [Adoption of improved bean varieties in Haiti: An assessment using farm surveys, bean seed supply chain analysis, and DNA fingerprinting](#). Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Martínez Figueroa, H.D., J.C. Rosas, C. Estévez de Jensen, T.G. Porch, J.S. Beaver. 2017. Selection of bean lines that combine resistance to web blight and common bacterial blight. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- McClean, P.E. 2017. Targeted Improvement of the Mayan Milpa Cropping System in Guatemala. Invited speaker at CROPS conference at HudsonAlpha Institute of Biotechnology, Huntsville, AL.
- Miranda, A. 2017. [Screening bean lines for resistance to the common and Mexican bean weevil in Guatemala](#). Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Montejo L.M., Steadman J., Villatoro J.C., Moscoso J., Agreda K., Osorno J.M. 2016. Rust Resistance in the Guatemalan Climbing Bean Germplasm Collection, Preliminary results. Poster session presented at: ASA-CSSA & SSSA Annual meeting. Phoenix, Arizona, U.S. Nov. 6 th to 9 th

- Montejo L.M., Steadman J., Villatoro J.C., Moscoso J., Agreda K., McClean P., Osorno J.M. 2017. Rust Resistance in the Guatemalan Climbing Bean Germplasm Collection. Oral session presented at: Plant Science Graduate Students Symposium. University of Saskatchewan, Saskatoon, Canada. March 31st to April 1st.
- Montejo L.M., Steadman J., Villatoro J.C., Moscoso J., Agreda K., McClean P., Osorno J.M. 2017. Rust Resistance in the Guatemalan Climbing Bean Germplasm Collection, Final Results. Oral session presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Montejo, L.M., Villatoro, J.C., and Dardon, D. 2015. Identification of physiological races of common bean rust (*Uromyces appendiculatus*). Poster presentation at the Annual Meetings PCCMCA. Guatemala City, Guatemala, May 1–5, 2015.
- Moscoso, J.R., Villatoro, J.C., Miranda, A.N., Carrillo, E.E., Agreda, K.A., Aldana, L.F., Osorno, J.M., McClean, P.E. Agro-economic Evaluation of Three Varieties of Climbing Bean (*Phaseolus vulgaris* L.), Grown in Three Spatial Arrangements. Poster session presented at 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Moscoso, J.R., Villatoro, J.C., Miranda, A.N., Carrillo, E.E., Agreda, K.A., Aldana, L.F., Osorno, J.M., McClean, P.E. Release of Two Varieties of Climbing Bean: ICTA Labor Ovalle Bolonillo e ICTA Utatlán in Guatemala. Oral session presented at: LXII Reunión Anual del Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos y Animales (PCCMCA), San Salvador, El Salvador. May. 16th to 19th. [In Spanish]
- Muimui, K. K., A. L. Okello, P. Chikuma, R. Lungu. Enhancing bean productivity through community seed multiplication in Mbala and Mporokoso districts of Northern Zambia. Poster Presentation at 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Nkalubo ,Stanley T., Pamela Papalu, Michael A. Ugen, Blessing A. Odogwu, Clare T. Mukankusi, James Kelly, James Steadman, Carlos Urrea. 2015. Implications of Fungal Pathogens to Bean Production in Uganda. A poster presented at the Common Bean Disease Workshop on Angular Leaf Spot and Root Rot, 20–23 July 2015, Kruger Gate Skukuza, South Africa.
- Nkalubo T. S., B.A.Odogwu, B.M.E. Alladassi, E. B. Kavishe, I. Dramadri, D. Katuramu, G. Luyima, K. Cichy, C. Urrea, J. Steadman and J.D. Kelly. Genetic Improvement in Uganda's Andean Bean Breeding Program. Poster Presentation at 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Osei-Bonsu I, Hoh D, Loescher W, TerAvest D, Kramer D. (2017). Chlorophyll fluorescence and leaf gas exchange based phenotyping of heat stress tolerance in tepary, common bean and cowpea at the seedling and juvenile stages. Poster presented at the Phenome 2017 Conference, 10 - 14 February 2017, Tucson, Arizona.
- Osei-Bonsu I, Hoh D, TerAvest D, Cruz J, Savage L, Huynh B-L, Roberts PA, Kramer D. (2017). Assessing tolerance of photosynthesis to high night temperature stress in cowpea genotypes and mapping of QTLs associated with photosynthetic traits. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Osei-Bonsu I, Hoh D, TerAvest D, Cruz J, Savage L, Huynh B-L, Roberts PA, Kramer D. (2017). Thermo-tolerance of photosynthesis in legumes: Mapping QTLs for photosynthetic traits in cowpea under heat stress. Presented at 2017 LIL Grain Legume Research Conference, Burkina Faso. [http://legumelab.msu.edu/uploads/files/Osei-Bonsu\\_Thermo-tolerance.pdf](http://legumelab.msu.edu/uploads/files/Osei-Bonsu_Thermo-tolerance.pdf)
- Osei-Bonsu I, Hoh D, TerAvest D, Cruz J, Savage L, Huynh B-L, Tessmer O, Roberts PA, Close TJ, Kramer D. (2017). Thermo-tolerance of photosynthesis in grain legumes: mapping QTLs for photosynthetic traits in cowpea under heat stress by high throughput photosynthesis phenotyping. Presented at the 43 Midwest/Southeast Photosynthesis meeting 2017, 27 - 29 October 2017, Marshall, Indiana, USA.
- Osorno, J.M. 2015. Avances en las secuencias genómicas de cultivos. Oral presentation at the Annual Meeting of the PCCMCA in Guatemala City, Guatemala, May 1–5, 2015.
- Osorno, J.M., McClean, P.E., Villatoro, J.C., Miranda, A.M., Moscoso, J.R., Agreda, K.A., Aldana, L.F. 2017. Two New Climbing Bean Varieties Adapted to the Milpa System in the Highlands of Guatemala. Oral session presented at 2017 LIL Grain Legume Research Conference, Burkina Faso.

- Owusu Y. E., Akromah R., Kusi F., Denwar. N. 2016. [Inheritance of Extra-Early Maturity in Cowpea](#). Proceedings of 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.
- Pittendrigh, B., C. Dabire-Binso, I. Baoua, F. Traore, A. Laouali, S. Asante, H. Braimah, M. Mochaih, B. Datinon, E. Biaou, J. Bello-Bravo, and M. Tamò. 2017. [Integrated Pest Management \(IPM\) in cowpea cropping systems in West Africa: From genomics to biocontrol agents, biopesticides, and extension](#). Invited paper. 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Poda L.S., Kusi F. Akromah R., Ouedraogo T.J., Tignegre J.B., Batiemo J. 2016. Genetic Mapping of Striga and Thrips Resistance in Cowpea Population in Northern Ghana. Proceedings of 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.
- Poda L.S., Kusi F., Akromah R., Nyadanu D., Attamah P., Sugri I., Ouedraogo T.J., Tignegre J.B., Batiemo B.J., Huynh B-L., Munoz-Amatriain M., Close T.J., Roberts P.A. 2017. [Phenotyping for \*Megalurothrips sjostedti\* \(Trybom\) and \*Striga gesnerioides\* \(Willd.\) resistance in cowpea \(\*Vigna unguiculata\* \(L.\) Walp.\) in northern Ghana](#). 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Porch, T., Hart. J., Estévez de Jensen, C., 2015. Response of the Andean diversity panel to root rot in a root rot nursery. *Proceedings of the Common Bean Disease Workshop on Angular Leaf Spot and Root Rot* (p 58.). Protea Kruger Gate. Skukuza, South Africa, July 20–23, 2015, USDA/ARS.
- Porch, T., I. Rodriguez, J. Hart, A. Vargas, J.C. Rosas, M.Brick, J.S. Beaver. 2017. [Advances in tepary bean \(\*Phaseolus acutifolius\* A. Gray\) genetics and breeding](#). Presentation at 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Porch, T.G, Hart, J., Vargas, A., Brick, M and J.S. Beaver. 2015. Caracterización de un panel de frijol tépari (*Phaseolus acutifolius*) y su aplicación en mejoramiento de este cultivo huérfano. Paper presented at the 2015 meeting of the PCCMCA held in Guatemala City. 4 to 7 May 2015.
- Porch, T.G., K. Cichy, M. Alameda and J.S. Beaver. 2014. Association mapping analysis of the response to *Macrophomina phaseolina* in the Andean Diversity Panel. Poster presented at the 2014 joint conference of the 6th International Food Legumes Research Conference (IFLRC VI) and 7th International Conference on Legume Genetics and Genomics (ICLGG VII) in Saskatoon, SK, 7–11 July 2014.
- Prophete, E., G. Démosthène, J.C. Rosas, P.N. Miklas, T.G. Porch and J.S. Beaver. 2017. Development, release and dissemination of Sankara black bean in Haiti. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Rodriguez, I.Y., J. Hart, J.S. Beaver y T.G. Porch. 2017. Identificación de QTLs en frijol tépari bajo estrés abiótico, usando una población RIL. Paper presented at the 2017 meeting of the PCCMCA, San Salvador, El Salvador.
- Rodriguez, J.C. Rosas, J.S. Beaver, T. Porch, S. Beebe and J.P. Lynch. 2015. Evaluación de germoplasma de frijol común para la tolerancia a las altas temperaturas. Paper presented at the 2015 meeting of the PCCMCA held in Guatemala City, 4 to 7 May 2015.
- Rosas, J.C., C. Estevez de Jensen, C., J.S. Beaver and T.G. Porch. 2017. A differential nursery for testing nodulation and effectiveness of Rhizobium strains in common beans. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Rosas, J.C., I. Rodriguez, A. Llano, A. Clará, J.C. Hernandez and S. Beebe. 2015. Resultados del SISTEVER de frijol de grano negro. Paper presented at the 2015 meeting of the PCCMCA held in Guatemala City, 4 to 7 May 2015.
- Rosas, J.C., J. S. Beaver, S. Beebe, A. Llano, A. Clará y J. C. Hernández. 2014. Results from the SISTEVER small red bean Trials of 2013. Presentation made at the 2014 meeting of the PCCMCA held in Nicaragua, 28 April to 3 May 2014.
- Rosas, J.C., I. Rodriguez, and J. S. Beaver. 2014. Progress on genetic improvement of the resistance to angular leaf spot in common beans. Presentation made at the 2014 meeting of the PCCMCA held in Nicaragua, 28 April to 3 May 2014.

- Rosas, J.C., J.S. Beaver, T.G. Porch, S.E. Beebe, J.S. Burrridge and J.P. Lynch. 2017. Progress in the selection of common bean lines with adaptation to high temperatures. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Steadman, J., B. Odogwu, S. Nkalubo, C. Mukuma, K. Muimui, J. Millhouse, and C. Urrea. Search for resistance to bean rust in Zambia and Uganda: Field and greenhouse tools. Poster presented during the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Tamò, M. 2015. Climate change challenges for insect science in Africa. Plenary inaugural keynote presentation at the 21st conference of the African Association of Insect Scientists, in Cotonou, Benin, Oct. 19–23, 2015.
- Tamò, M. 2015. Free-air CO<sub>2</sub> enrichment (FACE) for research on sustainable pest management in Africa. RIPE/FACE workshop, July 10–13, 2015, Urbana–Champaign, USA.
- Tamò, M., Datinon B., Dannon E., Srinivasan R., Pittendrigh B., Dabire C., Baoua, I., Braimah H. and Asante S. 2015. Challenges and opportunities for biological control of cowpea pests in Africa, at the XVIII International Plant Protection Congress, in Berlin, Germany, Oct. 24–27, 2015.
- Tamò, M., E. Dannon, B. Datinon, C. Dabiré, F Traoré, B. Pittendrigh, and R. Srinivasan. 2017. [Science-driven pest management saves cowpea farms from insect pests](#). Lead presentation. 2017 LIL Grain Legume Research Conference, Burkina Faso
- Tamò, M., Onstad D., Pittendrigh B. and Agunbiade T. 2015. Resistance management prospects for the control of legume pod borer. Cowpea Project Annual Review and Planning Meeting, Kampala, Uganda, Jan 29 – Feb 4, 2015.
- TerAvest D, Mnthambala F, Kamfwa K, Yohane E, Kramer D. (2017). What do we learn from Phenotyping Tools that Bridge the Gaps between the Lab and the World? Presented at the Phenome 2017 Conference, 10 - 14 February 2017, Tucson, Arizona.
- TerAvest D, Mnthambala F, Siyeni D, Ngwira A, Kramer D. (2017). PhotosynQ: Empowering Collection of Direct Crop Physiological Measurements on Smallholder Farms. Presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Tetteh Kubi, G., Botchey, M., Asare T.A., and Kusi, F. 2016. [Improving the Field Resistance of Cowpea Genotypes to Cowpea Aphid](#). Proceedings of 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.
- Tobar- Piñón M.G., Mogghadam S.M., Lee R.K., Villatoro J.C., Osorno J.M., McClean P.E. 2017. [Genetic Diversity of the Guatemalan Climbing Bean Collection](#). 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Tobar- Piñón M.G., Mogghadam S.M., Lee R.K., Villatoro J.C., Osorno J.M., McClean P.E. 2017. Genetic Diversity of the Guatemalan Climbing Bean Collection. Central America Cooperative Program for Crop and Animal Breeding, PCCMCA. San Salvador, El Salvador. Apr. 25th to Apr. 28th. [In Spanish]
- Tobar- Piñón M.G., Mogghadam S.M., Lee R.K., Villatoro J.C., Osorno J.M., McClean P.E. 2017. Genetic Diversity of the Guatemalan Climbing Bean Collections. Bean Improvement Cooperative Conference. East Lansing MI, USA. Oct. 29th to Oct. 31st.
- Tobar- Piñón M.G., Mogghadam S.M., Lee R.K., Villatoro J.C., Osorno J.M., McClean P.E. 2017. Genetic Diversity of the Guatemalan Climbing Bean Collection. Plant and Animal Genome Conference, PAG. San Diego CA, USA. Jan. 13<sup>th</sup> to Jan. 17<sup>th</sup>.
- Tobar-Piñón M.G., Illescas O.V., and Villatoro J.C. 2015 Evaluación sensorial y de aceptación de productos alimenticios a partir de variedades de frijol (*Phaseolus vulgaris*) biofortificado. Oral presentation at the Annual Meeting of the PCCMCA, Guatemala City, Guatemala, May 1–5.
- Tobar-Piñón M.G., Mogghadam S.M., Lee R.K., Villatoro J.C., Osorno J.M., McClean P.E. 2016. Genetic Diversity of the Guatemalan Climbing Bean Collection. Second International Legume Society Conference. Troia, Portugal. Oct. 11th to Oct. 14th.
- Tobar-Piñón M.G., Mogghadam S.M., Lee R.K., Villatoro J.C., Osorno J.M., McClean P.E. 2017. Genetic Diversity of

the Guatemalan Climbing Bean Collection. 33rd Annual Plant Science Graduate Student Symposium. Saskatoon SK, Canada. Mar. 31st to Apr. 1st.

- Toffa Mehinto, J., E. Dannon, O. Kobi, D. Kpindou, and M. Tamò. 2017. Comparative efficacy of Biopesticides for Controlling the Legume Pod Borer, *Maruca Vitrata* Fabricius (Lepidoptera: Crambidae) Under Field Conditions in Benin. 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Traub J., Naeem M., Austic G, Kelly, J., Kramer, D., Loescher L. Assessing and comparing relationships between heat and drought tolerance: analytical approaches. Poster presentation at American Society for Horticultural Science Conference 2015, in New Orleans, LA, August 4–7.
- Traub J., Naeem M., Kelly, J., Austic G, Kramer, D., Loescher W. Phenotyping (screening) for heat (and drought) tolerance in bean (*Phaseolus* spp.) using new and conventional fluorescence and gas exchange parameters. Poster presentation at American Society of Plant Biologists Conference 2015, Minneapolis, Minnesota, July 26–30, 2015.
- Traub, J., Kelly, J., Loescher W. 2013. Varietal differences in physiology of drought stressed *Phaseolus*. Poster session presented at the American Society for Horticultural Science Annual Conference, Palm Desert, California, July 22–25, 2013.
- Traub, J., Kelly, J., Loescher W. 2014. Enhancing drought tolerance in common bean, the most widely consumed legume: shoot and root components of tolerance. Poster presented at American Society for Horticultural Science Conference, Orlando, Florida, July 28–August 1, 2014.
- Traub, J.R., J.D. Kelly, and W. Loescher. Physiological components of heat and drought tolerance differences in *Phaseolus vulgaris* and *P. acutifolius*. Presented during the 2017 LIL Grain Legume Research Conference, Burkina Faso. [http://legumelab.msu.edu/uploads/files/Kelly\\_Physiological\\_components\\_of\\_heat.pdf](http://legumelab.msu.edu/uploads/files/Kelly_Physiological_components_of_heat.pdf)
- Urrea, C.A., S. Nkalubo, K. Muimui, J.D. Kelly, J. Steadman, and E.V. Cruzado. Effect of drought on bean cooking time using germplasm selected for drought, common bacterial blight, and root rot resistance for Uganda and Zambia. Presented during the 2017 LIL Grain Legume Research Conference, Burkina Faso. [http://legumelab.msu.edu/uploads/files/Urrea\\_Effect\\_of\\_drought\\_on\\_bean\\_cooking.pdf](http://legumelab.msu.edu/uploads/files/Urrea_Effect_of_drought_on_bean_cooking.pdf)
- van Etten J., J. C. Rosas and I. Rodriguez. 2014 First experiences with participatory massive evaluation of common beans in Honduras. Presentation made at the 2014 meeting of the PCCMCA, Nicaragua, 28 April to 3 May 2014.
- Zakari, O., A., I. Baoua, S. Boureima, L. Amadou, M. Tamò, S. Mahamane S, and B. R. Pittendrigh. 2017. Biopesticide test of neem seed (*Azadirachta indica* A. Juss.) extract and MaviNPV Virus for the control of main insect pests of cowpea (*Vigna unguiculata* L. Walp.) in Niger. Presented during the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- E. Dissertations and Theses**
- Agli, C. A. and AGO. D. 2014. *Effectiveness of Parasitism of Apanteles taragamae and Therophilus javanus on Maruca vitrata Pest of cowpea*. BSc thesis, Polytechnic School of Abomey-Calavi/ University of Abomey–Calavi, EPAC/UAC, Cotonou, Benin.
- Agunbiade, T. 2014. [A Genomic Analysis of the Insect Pest Populations of Cowpea in West Africa](#). PhD Thesis, University of Illinois at Urbana–Champaign, Champaign-Urbana, Illinois.
- Ahongbonon, Laurent, 2016. Etude de la table de vie de *Phanerotoma syleptae* (Hymenoptera: Braconidae), parasitoïde ovo-larvaire de *Maruca vitrata* (Lepidoptera: Braconidae), ravageur du niébé, *Vigna unguiculata* (L.) Walp. FAST/UAC, 31p
- Akogninou, L. 2014. Behavior of *Therophilus javanus* Bhat and Gupta on Larvae from Eggs of *Maruca vitrata* (Fabricius) Parasited by *Phanerotoma syleptae* Zettel. BSc thesis, Agronomy Faculty/ University of Parakou, FA/UPA, Parakou, Benin.



- Akpoffo, M. A. 2014. Evaluation de Quelques Paramètres Biologiques et de L'efficacité de *Therophilus javanus* Bhat et Gupta (Hymenoptera: Braconidae), Parasitoïde Larvaire de *Maruca vitrata* Fabricius (Lepidoptera: Crambidae), foreuse des fleurs et des gousses du niébé (*Vigna unguiculata* (L.) Walp). MSc thesis, Université Africaine de technologie et de management UATM/GASA, Cotonou, Benin.
- Alizanon, Mesmin, 2016. Etude de la table de *Therophilus javanus* sur milieux naturel et artificiel. FAST/UAC, 36p
- Attamah P. 2016. Screening and genetic analysis of drought tolerance in SARI's favorite cowpea lines. M.Phil. Thesis, Kwame Nkrumah University of Science and Technology, 99 p.
- Bonifofana, R. and Ahouantchede, H. S. 2014: Effectiveness of *Apanteles taragamae* and *Therophilus javanus* to Control *Maruca vitrata* Pest of Cowpea. BSc thesis, Polytechnic School of Abomey–Calavi/ University of Abomey–Calavi, EPAC/UAC, Cotonou, Benin.
- Dandjinou, G. V. 2014. Testing Biopesticides: Neem Oil Dosage and Combinations of MaviMNPV: 1st Planting Season 2014. BSc thesis, Agronomy Faculty, University of Parakou, FA/UPA, Parakou, Benin.
- Fiacre, Agbaka, 2016. Etude des interactions entre *Phanerotoma syleptae* et *Therophilus javanus*, (Bhat and Gupa) (*Hymenoptera: Braconidae*) deux parasitoïdes du lépidoptère *Maruca vitrata* Fabricius (Lepidoptera: Crambidae) ravageur du niébé au laboratoire. FAST/UAC, 38p
- Fuseini Abdulai. 2015. Field Evaluation of Neem Seed Extracts from Different Ecological Zones of Ghana in the Control of Cowpea Pests. BSc Thesis, University for Development Studies, Tamale, Ghana.
- Hounsa, P. M. G. 2014. Etude des Interactions entre *Trichogrammatoïdea eldanae* Viggiani (*Hymenoptera: Trichogrammatidae*), et *Phanerotoma syleptae* Zettel (*Hymenoptera: Braconidae*); deux Parasitoïdes de *Maruca vitrata* Fabricius (Lépidoptera: Crambidae), Ravageur du Niébé (*Vigna unguiculata* (L.) Walp). MSc thesis, Université Africaine de technologie et de management UATM/GASA, Cotonou, Benin.
- Kavishe, Basil Evarist 2017. Resistance to bean common mosaic potyviruses and its inheritance in selected Ugandan beans. MSc. Makerere University, Uganda
- Laleye, F. 2014. Determining the Host Range for the Exotic Parasitoids *Therophilus javanus* (*Hymenoptera: Braconidae*). BSc thesis, Agronomy Faculty/ University of Parakou, FA/UPA, Parakou, Benin.
- Mahulé, Alladassi Elysé Bori. 2017. Genetics of resistance to Common Bacterial Blight disease of Common Bean (*Phaseolus vulgaris* L.) in Uganda. MSc. Makerere University, Uganda.
- Maldonado-Mota, C. 2017. Identification of new sources of resistance to Anthracnose in climbing bean germplasm from Guatemala. M.S. Thesis. North Dakota State Univ. 70 p.
- Martínez Figueroa, H.D. 2017. Desarrollo de líneas de frijol (*Phaseolus vulgaris* L.) que combinen resistencia a mustia hilachosa [*Thanatephorus cucumeris* Frank (Donk)], bacteriosis común (*Xanthomonas axonopodis* pv. *phaseoli*) y los virus BGYMV, BCMV y BCMNV. M.S. Thesis. Univ. of Puerto Rico. Mayaguez, Puerto Rico. Mayaguez, Puerto Rico. 102 p.
- Menhinto Toffa, J. 2015. *Contribution to Sustainable Management Strategies of Maruca vitrata Fabricius (Lepidoptera: Crambidae) of Vigna unguiculata L. Walp by Using Entomopathogenic Products in Benin*. PhD Thesis, Faculty of Letters, Arts and Humanities Sciences /University of Abomey–Calavi, FLASH/UAC, Cotonou, Benin.
- Montejo-Domínguez, L. de M. 2017. Rust resistance in the Guatemalan climbing bean collection. M.S. Thesis. North Dakota State Univ. 76 p.
- Mukeshimana, G. 2013. [Dissecting the Genetic Complexity of Drought Tolerance Mechanisms in Common Bean \(Phaseolus vulgaris L.\)](#). PhD Dissertation, Michigan State University, East Lansing, MI.

- Odogwu, Blessing. 2017. Resistance to common bean (*Phaseolus vulgaris* L.) rust (*Uromyces appendiculatus* (Pers. Pers.) Unger.) in Uganda. PhD. Makerere University.
- Poda, S. L. 2016. Phenotyping for *Striga gesnerioides* and *Megalurothrips sjostedti* resistance in cowpea populations in Northern Ghana. M.Phil. Thesis, Kwame Nkrumah University of Science and Technology, 116 p.
- Rodríguez Ortega, D.G. 2017. Análisis fenotípico y genético de la resistencia a mancha angular (*Pseudocercospora griseola*) en el cultivo de frijol común (*Phaseolus vulgaris* L.). M.S. Thesis. Univ. of Puerto Rico. 67 p.
- Rodriguez, I.Y. 2017. Análisis fenotípico y genético de frijol tépari (*Phaseolus acutifolius* A. Gray) para tolerancia a factores bióticos y abióticos. M.S. Thesis. Univ. of Puerto Rico. Mayaguez, Puerto Rico. 82 p.
- Sagbo, R. 2015. *Evaluation of Continuous Multiplication of its Host Trichogrammatoidea eldanae Substitution of Corcyra Cephalonica in a Release Device*. MSc thesis, Faculty of Agronomic Sciences / University of Abomey–Calavi, EPAC/UAC, Cotonou, Benin.
- Tobar-Piñon, M.G. 2017. Genetic diversity of the Guatemalan climbing bean collections. M.S. Thesis. North Dakota State Univ. 109 p.
- Tossou, Carmelle, 2016. Test d'efficacité de *Therophilus javanus* '(Bhat and Gupa) (Hymenoptera: Braconidae) sur *Maruca vitrata* (Lepidoptera: Crambidae). FAST/UAC, 36p
- Zanzana, K., 2015. *Evaluation of the Colonization of the Various Organs of the Cowpea by Endophytic B. bassiana (Ascomycota: Hypodreales)*. MSc thesis, Faculty of Technic Sciences/University of Abomey–Calavi, FAST/UAC, Cotonou, Benin.

#### **F. Professional Recognition, Awards, and Accomplishments**

- James Beaver of the University of Puerto Rico, and Juan Carlos Rosas of the Zamorano Panamerican Agricultural University in Honduras, have been selected as winners of the Board for International Food and Agricultural Development (BIFAD) 2017 Award for Scientific Excellence in a Feed the Future Innovation Lab.
- Consuelo Estévez de Jensen received an USDA/ARS Certificate of Appreciation for outstanding efforts to characterization bean germplasm for enhanced BNF and root rot response for Feed the Future countries in support of the Feed the Future Grain Legumes Project, South Africa, July 1, 2015.
- Consuelo Estévez de Jensen. The College of Agriculture of the University of Puerto Rico– Mayaguez presented a Certificate of Recognition for Excellence in Research, Creativity and therefore, Enrichment of the Campus Research. Presented 9 May, 2014, Mayaguez, Puerto Rico.
- Consuelo Estévez de Jensen. Named the Puerto Rican Scientific Society Annual Meeting's (SOPCA) First Place Professional Oral Presentation Award Winner for the presentation "Inoculant Production in Haiti" at the 38<sup>th</sup> Annual Meeting SOPCA, 2 November, 2013, Guayanilla, Puerto Rico.
- David M. Kramer, Michigan State University Hannah Distinguished Professor in photosynthesis and bioenergetics, is the recipient of the prestigious American Society of Plant Biologists 2016 Charles F. Kettering Award.
- Juan M. Osorno received the Distinguished Achievement Award given by the Bean Improvement Cooperative during their biennial meeting in November, 2015 in Niagara Falls, Ontario, Canada. The award is presented to a scientist who has worked in bean improvement fewer than 15 years and recognizes outstanding scientific accomplishments relating to bean improvement and education.
- Juan Carlos Rosas received the 2015 AGEAP (Zamorano Alumni Association) recognition for his contributions to Pan-American agriculture and Zamorano University.
- Juan Carlos Rosas received the 2014 Gamma Sigma Delta Distinguished Achievement in Agriculture Award.
- The University of Puerto Rico Bean Research Team (Consuelo Estevez, Mildred Zapata, and James Beaver) were recognized for "Outstanding Dedication and Contribution to Research and Innovation Endeavors during 2014–

2015” at the symposium, Research and Innovation as Accelerators of New Opportunities in Puerto Rico, held on the Mayaguez Puerto Rico Campus, 15 May 2015.

## II. **Strategic Objective Two: Transforming Grain Legume Systems and Value Chains**

Research output from LIL Projects SO2.1 and SO2.2

### A. **Refereed Journal Articles**

Amanor-Boadu and K. Ross. 2017. On the Role of Food Hierarchies on Consumption Choices: The Case of Legumes. *In progress. Target journal: Food Policy.*

Amanor-Boadu, V., and R. Armah. 2017. A System Dynamics Approach to Legume Consumption and Production in Select Markets: 2020-2035. *In progress. Target journal: International Journal on Food System Dynamics.*

Bello Julia, Anne Namatsi Lutomia, Eric Abbott, Robert Mazur, Sostino Mocumbe, and Barry Pittendrigh. 2017. [Making Agricultural Learning Accessible: Examining Gender in the Use of Animations via Mobile Phones](#) (5:74-100) in M. Mills and D. Wake (eds.) *Empowering Learners with Mobile Open-Access Learning Initiatives*. Hershey PA: IGI Global. DOI: 10.4018/978-1-5225-2122-8.ch005.

Goettsch Lance H., Andrew W. Lenssen, Russell S. Yost, Ebby S. Luvaga, Onesmus Semalulu, Moses Tenywa, Richard Miiro and Robert E. Mazur. 2017. [Improved production systems for common bean on Ferralsol soil in south-central Uganda](#) *African Journal of Agricultural Research* 12(23):1959-1969. DOI: 10.5897/AJAR2017.12122.

Goettsch Lance H., Andrew W. Lenssen, Russell S. Yost, Ebby S. Luvaga, Onesmus Semalulu, Moses Tenywa, and Robert E. Mazur. 2016. [Improved production systems for common bean on Phaeozem soil in south-central Uganda](#) *African Journal of Agricultural Research* 11(46):4796-4809. DOI: 10.5897/AJAR2016.11760.

Mfikwa, Adelina, and Freddy Kilima. 2014. [Factors Influencing the Consumption of Pulses in Rural and Urban Areas of Tanzania](#). *Tanzania Journal of Agricultural Sciences* 13 (2).

Rocha António, Ricardo Maria, Unasse S. Waite, Uatema A. Cassimo, Kim Falinski and Russell Yost. 2017. [Improving grain legume yields using local Evate rock phosphate in Gùrué District, Mozambique](#). *African Journal of Agricultural Research* 12(22):1889-1896. DOI: 10.5897/AJAR2017.12331.

### B. **Other Publications (reports, conference papers, working papers, manuals, etc.)**

(Presentations and Abstracts for posters from the Feed the Future Legume Innovation Lab Grain Legume Research Conference 2017 are at [http://legumelab.msu.edu/lil\\_burkina\\_faso\\_conference/bfaqenda](http://legumelab.msu.edu/lil_burkina_faso_conference/bfaqenda) )

Chitete, M., H. Phiri, L. Mapemba, V. Amanor -Boadu, and J. Dzanja. 2017. Analysis of Structure, Conduct and Performance of Beans Marketing in Malawi: A Case Study of Lilongwe District. Policy Brief, Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.

Kenamu, L. D. Mapemba, K. Ross and V. Amanor-Boadu. 2017. Household Common Beans Consumption Behaviour in Urban Malawi: Empirical Evidence from Lilongwe City. Policy Brief, Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.

Mazur, R., N. Bwambale and V. Salegua. 2015. Land Rights and Integrated Soil Fertility Management in Uganda and Mozambique. Paper presented at LANDac Conference 2015—Land Governance for Equitable and Sustainable Development. Utrecht, Netherlands, 8–10 July 2015.

Moyo, M., V. Amanor-Boadu, K. Ross, L. Mapemba and J. Dzanja. 2016. The Common Bean Subsector in Malawi: Current and Future Outlook of Yield, Area and Overall Production. Policy Brief, Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.

Msukwa, W., J. Mangisoni and L. Mapemba. 2017. Household Demand for Common Beans in Lilongwe District of Malawi. Policy Brief, Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.

Ross, K.L., A. Shanoyan, V. Amanor-Boadu, Y. A. Zereyesus, and G. Tembo. 2014. From subsistence to commercial production: factors affecting smallholder bean and cowpea producers market participation in Zambia. Paper

presented at the Annual World Symposium of the International Food and Agribusiness Association, Cape Town, South Africa, June 16–17, 2014.

Ross, K.L., V. Amanor-Boadu, and L. Mapemba. 2015. Understanding consumer choice for grain legumes: recent evidence from Malawi. Paper prepared for presentation at the 90th Annual Conference, Honolulu, Hawaii, Western Economics Association International, June 28–July 2, 2015.

### **C. Other Types of Output (presentations, webpages, videos, equipment designs, etc.)**

Abbott E, Miir R, Mazur R, Mocumbe S, Pittendrigh B, Bello-Bravo J, and J Matege. 2017. [Comparative effectiveness of video animation delivered by smartphones versus printed images in communicating bean-growing recommended practices to farmers in Uganda and Mozambique](#). Presentation prepared for 2017 LIL Grain Legume Research Conference, Burkina Faso.

Amanor-Boadu, V. 2017. Framing the Vision: Beans for Health and Wealth. National Conference Beans for Health and Wealth. Lilongwe, Malawi and Lusaka, Zambia.

Amanor-Boadu, V. 2017. Sharpening the Vision: Beans for Health and Wealth. National Conference Beans for Health and Wealth. Lilongwe, Malawi and Lusaka, Zambia.

Amanor-Boadu, V., and K. Ross. 2017. Exploiting Food Hierarchies in Enhancing the Legume Industry's Competitiveness. National Conference Beans for Health and Wealth. Lilongwe, Malawi and Lusaka, Zambia.

Armah, R., and V. Amanor-Boadu. 2017 Towards 2050: Projecting legume consumption and production under alternative socioeconomic and resource conditions. Presentation at 2017 LIL Grain Legume Research Conference, Burkina Faso, Aug. 12-18, 2017.

Banda, D.T., K. Ross, V. Amanor-Boadu, and L. Mapemba. 2017. Effect of Interaction of Attributes that Influence Consumer Choice of Bean Varieties in Lilongwe City, Poster presented at 2017 LIL Grain Legume Research Conference, Burkina Faso.

Banda, T., L. Mapemba, V. Amanor-Boadu, K. Ross and K. Machira. 2017. Effect of Interaction of Common Bean Attributes on Consumer Choice of Bean Varieties in Lilongwe District. Policy Brief, Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.

Bello-Bravo J, Dannon A, Zakari O, Laouali A, Baoua I, Tamò M and B Pittendrigh. 2017. [An assessment of localized animated educational videos \(LAV\) versus traditional extension presentations or LAV followed by extension agent discussions among farmers in Benin and Niger](#). Presentation prepared for 2017 LIL Grain Legume Research Conference, Burkina Faso.

Bwambale N and R Mazur. [Inclusive innovation space: The bean value chain innovation platform in Masaka district, central Uganda](#). Presentation prepared for 2017 LIL Grain Legume Research Conference, Burkina Faso.

Bwambale N, Mazur R and E Abbott. 2017. Perceived Land Tenure Security and Investment in Integrated Soil Fertility Management Practices among Smallholders in Masaka District, Central Uganda. Presentation for the 2017 LIL Grain Legume Research Conference, Burkina Faso.

Chishimba, E., G. Tembo, V. Amanor-Boadu and M. Mwiinga. Factors Affecting Bean Profitability among Bean Traders in Zambia. Department of Agricultural Economics and Extension Education, the University of Zambia, Lusaka, Zambia. 2014.

Chishimba, G. Tembo, V. Amanor-Boadu and M. Mwiinga. 2017. Factors Affecting Bean Profitability among Bean Traders in Zambia. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.

Chisusu. 2017. Contribution of Common Beans to Household Dietary Diversity and Calorie Consumption in Malawi. Policy Brief, Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.

Kenamu, L. D. Mapemba, V. Amanor-Boadu and K. Ross. 2017. Joint Consumption of Multiple Common Bean Varieties in Lilongwe City, Malawi, Poster presented at the 2017 LIL Grain Legume Research Conference,

Burkina Faso.

- Kotchofa, P. and K. Ross. 2016. Factors influencing beans consumption in Sub-Saharan Africa: Case of the Urban Consumer in Zambia. Missouri Valley Economics Association Conference, St. Louis, MO.
- Kotchofa, P., K. Ross, V. Amanor-Boadu and Y. Zereyesus. Expenditure and Price Elasticities of Demand for Legumes in Northern Ghana, Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso
- Lifeyo, Y. 2017. Market Participation of Smallholder Common Bean Producers in Malawi. Policy Brief, Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.
- Luvaga E, Mazur R, Miiro R, Kyebogola S, Kabango F, Matege J, Abbott E, Semalulu O and M Tenywa. [Utilizing imperfect and inconsistent data: Economic feasibility analysis of common bean production in Uganda and Mozambique](#). Presentation prepared for 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Mapemba, L., E. Kenamu and M. Mumba. 2017. Legume Value Chain Analysis of Demand and Supply in Malawi. Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.
- Maria R. [Optimizing fertilizer application in common bean \(\*Phaseolus vulgaris\* L.\) in Gurúè, northern Mozambique](#). Presentation prepared for 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Mazunda, M., L. Mapemba, V. Amanor-Boadu Vincent and K. Ross. 2017. Consumer Choice of Dry Common Beans in Lilongwe City of Malawi, Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Mazur R, Bwambale N, Abbott E and M. Tenywa. 2016. Land Rights and Farmer Decision Making for Productivity and Soil Fertility Management in Uganda and Mozambique. Presentation at the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.
- Mazur R, Bwambale N, Miiro R, Tenywa M, Semalulu O and E Abbott. [Development and Lessons Learned from a Bean Innovation Platform in Uganda](#). Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso. URL
- Mazur R, Miiro R, Abbott E, Tenywa M, Luvaga E., and O Semalulu. [Social and economic factors in farmer decision making for improved soil fertility management and bean production in Uganda](#). Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Miller B, Burras L, Semalulu O, Kizza C, Majaliwa J, Tenywa M, and R Mazur. [Strengthening the indigenous soil classification system using GIS-based mapping of the Buganda catena, Uganda](#). Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Mocumbe S, Abbott E, Mazur R and R Maria. [Rapid Appraisal of a mobile app linking researchers with extension officers and bean farmers in Gurúè District, Mozambique](#). Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Moyo, N., L. Mapemba, V. Amanor-Boadu and K. Ross. 2017. Production and Marketing Constraints, Current Status and Future Outlook of Common Bean Sub-Sector in Malawi, Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Msukwa, W., L. Mapemba, V. Amanor-Boadu and K. Ross. 2017. Household Demand for Common Beans in Lilongwe District of Malawi: A Censored Regression Approach. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Mwiinga. M. 2017. Factors affecting bean consumption among Lusaka residents. Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Rocha A, Maria R, Cassimo U, Glazer C, Crow S, Rajan S and Yost R. 2016. Evate rock phosphate: A potential regional source of a nutrient input for acid, impoverished soils of Gurúè district, Mozambique. Poster for the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.
- Rocha A, Maria R, Waite U, Cassimo A and R Yost. Improving pigeon pea and common bean yields in Gurúè district, Mozambique. Poster for the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.

- Rocha A, Sandlin M, Yost R and Maria, R. 2017. Crop management strategies in the Mepuagúia community, Gurúè district. Poster for the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.
- Semalulu O, Kyebogola S, Tenywa M, Miiro R, Lenssen A, Yost R, Abbott E and Mazur, R. 2016. Fine-tuning research findings to farmer decision making in soil fertility management: From bean fertilizer recommendations to farm level action. Poster for the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.
- Swema, E., G. Mlay, F. Kilima, V. Amanor-Boadu and K. Ross. Consumers' Preferences for Common Beans' Attributes in Dar es Salaam, Tanzania. 2017. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Tenywa M, Semalulu O, Miiro R, Kyebogola S, Kyomuhendo P, Kiiza C, Majaliwa J, Nampijja J, Lenssen A and R Mazur. 2016. [Developing a methodology for mapping local soil types along the Buganda Catena, Uganda.](#) Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.
- Tumeo, M., L. Mapemba, V. Amanor-Boadu, K. Ross and A.-K. Edriss. 2016. Consumer Choice of Dry Common Beans in Malawi: Case of Lilongwe City. Policy Brief, Lilongwe University of Agriculture and Natural Resources Lilongwe, Malawi.

#### **D. Dissertations and Theses**

- Bwambale, N. 2015. [Farmers' Knowledge, Perceptions, and Socioeconomic Factors Influencing Decision Making for Integrated Soil Fertility Management Practices in Uganda.](#) M.S. thesis. Iowa State University, Ames, Iowa.
- Kasanda, Ednah. 2017. [Gender and decision-making in agriculture: A case study of groundnuts farmers in Zambia.](#) Master of Agribusiness Thesis. Kansas State University. Manhattan, Kansas. Available at.
- Kyomuhendo, Prossy. 2017. Limiting Nutrients and Lime Requirements for Bean Production on Three Contrasting Soils of Lake Victoria Crescent Agroecological Zone. M.Sc. thesis, Makerere University.
- Mocumbe, Sostino. 2016. [Use of animated videos through mobile phones to enhance agricultural knowledge among bean farmers in Gurue District Mozambique.](#) MS thesis. Iowa State University Greenlea School of Journalism and Communication, Ames, Iowa.
- Moyo, N. 2016. Situational Analysis of Common Bean Production, Marketing and Consumption in Malawi. Master of Science in Agribusiness Thesis, Lilongwe University of Agricultural and Natural Sources. Lilongwe, Malawi.
- Msukwa, W. 2017. Household Demand for Common Beans in Lilongwe District of Malawi. Master of Science in Agricultural and Applied Economics Thesis, Lilongwe University of Agricultural and Natural Sources. Lilongwe, Malawi.
- Pele, W. K. 2015. [Consumption Patterns of Beans in Zambia.](#) Masters of Agribusiness Thesis. Kansas State University, Manhattan, Kansas.
- Rocha, António José. 2017. Improving food security of highly weathered soils of Gùrué district, Mozambique. M.Sc. thesis, University of Hawai'i at Manoa.
- Swema, E. 2017. Consumer Preference for Common Bean Attributes in Dar-Es-Salaam, Tanzania. Master of Science in Agricultural and Applied Economics Thesis, Sokoine University of Agriculture. Morogoro, Tanzania. *In progress.*

#### **E. Professional Recognition, Awards, and Accomplishments**

Naboth Bwambale received the Research Excellent Award from Iowa State University for his research: "Farmers' Knowledge, Perceptions, and Socioeconomic Factors Influencing Decision Making for Integrated Soil Fertility Management Practices in the Masaka and Rakai Districts, Central Uganda." December 2015.

Robert Mazur received Iowa State University College of Liberal Arts and Sciences Excellence in Graduate Mentoring in recognition of his years dedicated to mentoring graduate students from the US and elsewhere. 2016.

Sostino Mocumbe received Iowa State University's Award for Humanitarian Development and Contribution to Theory for his research: Use of Animated Videos through Mobile Phones to Enhance Agricultural Knowledge among Bean Farmers in Gurúè District, Mozambique. December 2015.



### III. **Strategic Objective Three: Enhancing Nutrition**

Research output from LIL Project SO3.1 and Masfrijol

#### **A. Refereed Journal Articles**

Agapova, et al. 2018. Additional common bean in the diet of Malawian children does not affect linear growth, but reduces intestinal permeability. *J Nutr* (accepted)

Borresen, Erica C., Lei Zhang, Indi Trehan, Nora Jean Nealon, Kenneth M Maleta, Mark J Manary, Elizabeth P Ryan. 2017. [The nutrient and metabolite profile of 3 complementary legume foods with potential to improve gut health in rural Malawian children](#). *Curr Dev Nutr* 2017;1:e001610. DOI:

Ngoma, et al. 2018. Effect of cowpea flour processing on the chemical properties and acceptability of a novel cowpea blended maize porridge. *PLoS ONE* (under review).

Stephenson, K.B., Agapova SE, Divala O, Kaimila Y, Maleta KM, Thakwalakwa C, Ordiz MI, Trehan I, Manary MJ. 2017. [Complementary feeding with cowpea reduces growth faltering in rural Malawian infants: a randomized, blinded, controlled clinical trial](#). *Am J Clin Nutr* 106(6):1490-1499. doi: 10.3945/ajcn.117.160986.

Trehan, Indi, Nicole S. Benzoni, Alfred Z. Wang, Lucy B. Bollinger, Theresa N. Ngoma, Ulemu K. Chimimba, Kevin B. Stephenson, Sophia E. Agapova, Kenneth M. Maleta and Mark J. Manary. 2015. *Trials* 16: 520. [Common beans and cowpeas as complementary foods to reduce environmental enteric dysfunction and stunting in Malawian children: study protocol for two randomized controlled trials](#). DOI: 10.1186/s13063-015-1027-0

#### **B. Book Chapters**

#### **C. Other Publications (reports, conference papers, working papers, manuals, etc.)**

Curran J, McLachlan M, Black R, Widders I, Manary M. 2017. [Collaboration Among Sectors to Increase Pulse Consumption](#) *Ann N Y Acad Sci.* 2017;1392(1):3-5. doi:10.1111/nyas.13321

#### **D. Other Types of Output (presentations, webpages, videos, equipment designs, etc.)**

*(Presentations and Abstracts for all posters from the Feed the Future Legume Innovation Lab Grain Legume Research Conference 2017 are at [http://legumelab.msu.edu/lil\\_burkina\\_faso\\_conference/bfaqenda](http://legumelab.msu.edu/lil_burkina_faso_conference/bfaqenda)*

Divala, Oscar, Isabel Ordiz, Mark Manary, Ken Maleta, Chrissie Thakwalakwa, Yanko Kaimila and Teresa Ngoma. 2017. Intestinal Permeability in Young Malawian Children Consuming Legumes. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.

Kaimila, Yankho, Oscar Divala, Sophia Agapova, Kevin Stephenson, Tereza Nakoma Ngoma, Isabel Ordiz, Chrissie Thakwalakwa, Indi Trehan, Mark Manary, Kenneth Maleta. The Effect of Legume Based Complementary Food on Energy and Nutrient in Rural Malawian Children: A Randomized, Investigator-Blinded, Controlled, Noninferiority Trial Sub-Study. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.

Maleta, Ken. 2016. Grain Legumes and gut health. Presentation at the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.

Manary, Mark, Isabel Ordiz, Ken Maleta, Chrissie Thakwalakwa, Yanko Kaimila, Oscar Divala and Teresa Ngoma. 2017. Legumes, growth and development in young Malawian children. Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.

Molina, Carolina. 2017. MASFRIJOL, nutrition-sensitive lessons for indigenous, rural families in Guatemala's Western Highlands. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.

Ngoma Nakoma Theresa, Agnes Mwangwela, Ken Maleta, Mark Manary, Indi Trehan, Chrissie Thakwalakwa, Oscar Divala, Yankho Kaimila. 2017. Effect of Traditional Processing Methods on the Retention of Zinc, Crude Fiber

and Flavonoids in Cowpea Flour. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.

Ngoma, Theresa Nakoma, and Agnes Mwangwela. 2016. Acceptability of Cowpea Fortified Maize Porridge By Under Five Children and Their Mothers. Poster presentation at the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.

Ordiz, Isabel, Mark Manary, Ken Maleta, Chrissie Thakwalakwa, Yanko Kaimila, Oscar Divala and Teresa Ngoma. 2017. Legumes and the microbiota in young Malawian children. Presentation at the 2017 LIL Grain Legume Research Conference, Burkina Faso.

Thakwalakwa, Chrissie, Kenneth Maleta, Yankho Kaimila, Oscar Divala, Theresa Nakoma, Kenneth Maleta, Mark Manary. 2017. Impact of legume supplementation on child growth and infectious symptoms in 6-12-month-old Malawian children. Presentation at 2017 LIL Grain Legume Research Conference, Burkina Faso.

Thakwalakwa, Chrissie. 2016. Legume Consumption in Malawi: An Overview. Poster presentation at the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.

Wille, Celina, Sharon Hoerr and Carolina Molina. 2016. The Marriage of Nutrition Education and Bean Production Leads to Nutrition-Sensitive Agriculture in Masfrijol. Poster presentation at the 2016 Pan African Grain Legume and World Cowpea Conference, Zambia.

Wille, Celina. 2017. Impacts of improved bean varieties and yields on Guatemalan households. Poster presented at the 2017 LIL Grain Legume Research Conference, Burkina Faso.

#### **E. Dissertations and Theses**

Thakwalakwa, Chrissie Madalitso. 2015. [Effect of Lipid-based Nutrient Supplementation on Growth and Intake of Breast Milk, Energy and Nutrients in rural Malawian Children](#). PhD dissertation, University of Malawi, Malawi.

#### **F. Professional Recognition, Awards, and Accomplishments**

#### IV. **Strategic Objective Four: Improving Outcomes of Research and Capacity Building**

Research output from LIL Projects SO4.1

##### A. **Refereed Journal Articles**

Maredia, M. K., Reyes, B. A., Ba, M., C. Dabire, Pittendrigh, B., and Bello-Bravo, J. 2017. [Effectiveness of animation videos in inducing technology adoption: A field experiment in Burkina Faso](#). *Information Technology for Development* (April 19, 2017)

Maredia, Mywish, Shankar, Bhavani, Kelley, Timothy, Stevenson, James. 2014. [Impact assessment of agricultural research, institutional innovation, and technology adoption: introduction to the special section](#). *Food Policy* 44 214–217.

Reyes, Byron A., Maredia, Mywish, Bernsten, Richard H., Rosas, Juan Carlos. 2014. Have investments in bean breeding research generated economic benefits to farmers? The case of five Latin American countries. *Agricultural Economics* (Submitted).

##### B. **Book Chapters**

##### C. **Other Publications (reports, conference papers, working papers, manuals, etc.)**

DeYoung, David, Byron Reyes, Juan Osorno, Julio Cesar Villatoro and Mywish Maredia. 2017. An Overview of Bean Production Practices, Varietal Preferences, and Consumption Patterns in the *Milpa* System of the Guatemalan Highlands: Results of a Farm Household Survey. *Staff Paper 2017-08*. Michigan State University Department of Agricultural, Food and Resource Economics Staff Paper Series.

Magen, Benjamin, Crawford, Eric W., Maredia, Mywish. 2013. [Economic impact of CRSP's investment in the development and dissemination of improved cowpea varietal technology: New evidence from Senegal](#). *Impact Assessment Research Brief 4*. Michigan State University: Dry Grain Pulses CRSP.

Magen, Benjamin, Crawford, Eric W., Maredia, Mywish. 2013. [Impact Economique des investissements du CRSP sur le développement et la diffusion des variétés améliorées de niébé: Nouvelle évidence du Sénégal](#). *Impact Assessment Research Brief 4*. Michigan State University: Dry Grain Pulses CRSP (French translation).

Maredia, M, Shupp, R., Opoku, E., Mishili, F., Reyes, B., Kusolwa, P., Kusi, F., and Kudra, A. 2017. [Do farmers economically value seeds of different quality differently? Evidence from willingness to pay studies in Tanzania and Ghana](#). MSU International Development Working Paper. East Lansing: Michigan State University (forthcoming)

Maredia, M., Reyes, B. A., D. DeYoung. 2014. [Farmer perspective on the use of and demand for seeds of improved bean varieties: Results of beneficiary surveys in Guatemala, Honduras and Nicaragua](#). Staff Paper 2014–04. Department of Agricultural, Food and Resource Economics, Michigan State University, East Lansing.

Reyes, B. A., D. DeYoung and M. Maredia. 2014. [Effectiveness of the bean seed dissemination models implemented under the Bean Technology Dissemination \(BTD\) Project: Results of key informant interviews in Guatemala, Honduras and Nicaragua](#). Staff Paper 2014–03. Department of Agriculture, Food and Resource Economics, Michigan State University, East Lansing.

Reyes, Byron A., Maredia, Mywish, Ba, Malick, Clementine, Dabire, Pittendrigh, Barry. 2013. [Economic impacts of biocontrol research to manage field insect pests of cowpea in Burkina Faso: Baseline survey report](#). Department of Agricultural, Food and Resource Economics Staff Paper 13-04. East Lansing, Michigan: December 2013.

Reyes, Byron A., Mywish K. Maredia, Richard H. Bernsten, and Juan Carlos Rosas. 2016. [Opportunities Seized, Opportunities Missed: Differences in the Economic Impact of Bean Research in Five Latin American Countries](#). MSU International Development Working Paper 151. East Lansing: Michigan State University. (November 2016)

Sauer, C., Mason, N. M., Maredia, M. K., and Mofya-Mukuka, R. 2016. [Impacts of legume technologies on food security: Evidence from Zambia](#). FSP Research Paper No. 36. East Lansing, MI: Feed the Future Innovation Lab for Food Security Policy. (December 2016)

**D. Other Types of Output (presentations, webpages, videos, equipment designs, etc.)**

(Abstracts for all posters from the Feed the Future Legume Innovation Lab Grain Legume Research Conference 2017 can be found at [http://legumelab.msu.edu/lil\\_burkina\\_faso\\_conference/bfaqenda](http://legumelab.msu.edu/lil_burkina_faso_conference/bfaqenda) )

DeYoung, David and Mywish K. Maredia. 2017. [Farmers' Willingness to Pay for Quality Seeds of Bean Varieties with Preferred Traits: Evidence from two Central American Countries](#). 2017 LIL Grain Legume Research Conference, Burkina Faso.

DeYoung, David and Mywish K. Maredia. 2017. An Assessment of the Local Bean Seed Production and Marketing Model: The Case of Community Seed Banks in Nicaragua. New Models for Legume Seed Business: Resilience, Nutrition and Reaching Farmers at the Last Mile Conference. Washington, DC. March 2, 2017.

DeYoung, David, Byron Reyes, Gustavo Mejia, Manuela Tucux, Mizael Vasquez, Juan Josue Santos, Julio Cesar Vilatoro, Luz de Maria Montejo, Jessica Moscoso, Juan Osorno and Mywish K. Maredia. 2017. Gender Differences in Varietal Preference and Willingness to Pay for Quality Bean Seeds: Evidence from the Guatemalan Highlands. 2017 LIL Grain Legume Research Conference, Burkina Faso.

DeYoung, David, Byron Reyes, Mywish K Maredia and Lorena Gomez. 2017. An Assessment of the Local Bean Seed Production and Marketing Model: The Case of the Community Seed Banks in Nicaragua. 2017 LIL Grain Legume Research Conference, Burkina Faso.

Ilboudo, I., Balima, M., and Maredia, M. 2017. [A local success story on cowpea production and distribution compromised by a national project](#). 2017 LIL Grain Legume Research Conference, Burkina Faso.

Magen, Benjamin, Crawford, Eric W., Maredia, Mywish. 2013. [Economic Impact of Research Investment in the Development and Dissemination of Improved Cowpea Varietal Technology](#). Poster paper presented at the Agricultural and Applied Economics Association Annual Meeting, Washington, D.C., August 4-6, 2013.

Maredia, M K., D DeYoung, E. Prophete, C.D. Joseph, J. Beaver, and T. Porch. 2017 [Adoption of Improved Bean Seed Varietal Technology in Haiti: An Assessment Using Farm Surveys, Bean Seed Supply Chain Analysis, and DNA Fingerprinting](#). 2017 LIL Grain Legume Research Conference, Burkina Faso.

Maredia, M, Shupp, R., Opoku, E., Mishili, F., Reyes, B., Kusolwa, P., Kusi, F., and Kudra, A. 2017. [Do farmers economically value seeds of different quality differently? Evidence from willingness to pay studies in Tanzania and Ghana](#). Selected Paper presentation at the 2017 Agricultural and Applied Economics Association Annual Meeting, Chicago, Illinois, August 1, 2017.

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- Ray, M., Weldezhghi, T., and Maredia, M. 2017. Legume Technologies and agriculture-nutrition linkages: Exploratory Evidence from Uganda. 2017 LIL Grain Legume Research Conference, Burkina Faso.
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- Reyes, B., Maredia, M., Shupp, R., González, C., Rodríguez, C., Urbina, R. Posey, S. 2017. Quantifying farmers' willingness to pay for biofortified characteristics in three qualities of planting materials: The case of bean producers in Nicaragua. 2017 LIL Grain Legume Research Conference, Burkina Faso.
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#### **E. Dissertations and Theses**

- DeYoung, David. 2015. [Determinants of Sustainability of Community Seed Banks in Nicaragua: A Duration Analysis Approach](#). M.S. Thesis. Agricultural, Food and Resource Economics, Michigan State University, East Lansing, Michigan.
- Opoku, Edward. 2017. [Willingness to pay for quality cowpea seeds: experimental evidence from northern Ghana](#). Thesis for partial fulfillment of MS degree in Agricultural, Food and Resource Economics, Michigan State University.

#### **F. Professional Recognition, Awards, and Accomplishments**