# Kalavathy Rajan

Assistant Professor (Renewable Bio-products)
Department of Plant and Soil Science
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## Education and Post Graduate Training

| College/University | Location | Major | Degree | &Year |
|---|---|---|---|---|
| University of Arkansas | Fayetteville, AR | Food Science | PhD | 2015 |
| Tamil Nadu Agricultural University | Coimbatore, India | Food Processing | MS | 2011 |
| Cornell University | Ithaca, New York | Food Technology | MS | 2010 |
| Tamil Nadu Agricultural University | Coimbatore, India | Agriculture | BS | 2008 |

## Academic and Professional Experience

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|---|---|
| 2023 - present | Assistant Professor, Department of Plant and Soil Science, Texas Tech University |
| 2019 - 2023 | Research Scientist, Center for Renewable Carbon, University of Tennessee- Knoxville |
| 2016 - 2019 | Post-Doctoral Research Associate, Dept. of Biosystems Engineering and Soil Science, University of Tennessee- Knoxville |
| 2015 - 2016 | Post-Doctoral Fellow, Dept. of Biological and Agricultural Engineering, University of Arkansas-Fayetteville |

# RESEARCH

## Contracts, Grants and Sponsored Research

### Awarded

Kelly, B. (Lead Principal Investigator), Rajan, K. (Principal Investigator), Siebecker, M. (Principal Investigator), "Understanding PFAS bioaccumulation in the Osage Nation food-web in support of sustainable food production and sovereignty," Sponsored by USDA, Federal, $2,635,000.00. (Jan 2025 – Dec 2028).

Rajan, K. (Lead Principal Investigator), "Developing multifunctional and durable agro-based food packaging to reduce toxic plastic waste and sustainably advance a bioeconomy," Sponsored by Foundation for Food and Agriculture Research, Foundation, $445,585.00. (Jan 2025 – Dec 2027).

Benitez Rojas, O. (Lead Principal Investigator), Rajan, K. (Lead Principal Investigator), Machado, V. (Principal Investigator), Ballou, M. (Principal Investigator), SV, K. J. (Principal Investigator), "Addressing the role of dietary xylo-oligosaccharides derived from sorghum stover on gastrointestinal health in dairy calves," Sponsored by USDA-ARS, Federal, $99,100.00. (Jul 2024 – Aug 2026).

Rajan, K. (Lead Principal Investigator), Dotray, P. (Principal Investigator), Lewis, K. (Principal Investigator), Burke, J. (Principal Investigator), "Determining herbicide movement potential in wind-eroded sediments," Sponsored by Cotton Incorporated- Core program, Foundation, $23,500.00. (Jan 2024 – Dec 2024).

Rajan, K., "Developing biodegradable and durable disposable cutlery from cotton crop residues," Sponsored by Davis College of Agricultural Sciences, College or University, $12,000.00. (Jan 2024 – Dec 2024).

Rajan, K., "Training and advancing circular systems engineering in coffee supply chain to promote a bioeconomy and gender equity in the Trifinio dry corridor," Sponsored by TTU – CATIE Research Exchange Program, College or University, $5,000.00. (Jan 2024 – Dec 13, 2024).

### Pending

Fischer, L., Meyers, C., McCallister, D., Legako, J., Rajan, K., "Evaluating the social dynamics and perspectives of ag-fiber bio-packaging across the supply chain.," Sponsored by USDA-AFRI Social Implications of Food and Agricultural Technologies, Federal, $649,999.00.

SV, K. J. (Lead Principal Investigator), Rajan, K. (Principal Investigator), Saini, D. K. (Principal Investigator), Patil, G. (Principal Investigator), "Sustaining U.S. grain sorghum productivity by integrating field-based phenomics and genomic selection to enhance lodging resistance," Sponsored by Foundation for Food and Agriculture Research, Foundation, $656,387.00.

## Published Intellectual Contributions

### Journal Articles, Peer-reviewed

Rihn, A., Labbe, N., Rajan, K., Kamboj, G., Jackson, S., Tiller, K., Jensen, K. (2024). Consumers' perceptions of per- and polyfluoroalkyl substances and bio-based treatments on disposable dinnerware. *Journal of Agriculture and Food Research, 18*, 101436.

Limeneh, D., Tesema, A. F., Rajan, K., Abidi, N., Yilma, K. T. (2024). Evaluating the comfort properties of single jersey knitted fabrics. *Journal of Natural Fibers, 21*(1), 2436054.

Rajan, K., Berton, P., Rogers, R. D., Shamshina, J. (2024). Is kraft pulping the future of biorefineries? A perspective on the sustainability of lignocellulosic product development. *Polymers, 16*(23), 3438.

Zhou, Z., Rajan, K., Saedi, S., Labbé, N., Li, M., Wang, W., Wang, S. (2024). A Fully Plant-Based Water- and Oil-Resistant Paper Composite. *ACS Sustainable Chemistry & Engineering, 12*(50), 18043-18057.

Limeneh, D., Tesema, A. F., Rajan, K., Yilma, K. T. (2024). Comparing the cost-effectiveness and yarn quality improvement with PVA versus conventional maize starch as the sizing agents. *The Journal of The Textile Institute*, 1-8.

Zhou, Z., Rajan, K., Labbe, N., Wang, S. (2024). Significantly reducing energy consumption during nanolignin production via high-solid content grinding. *Industrial Crops and Products, 211*.

Yoo, J. Y., McSkimming, D., Rajan, K., Sarkar, A., Labbé, N., Groer, M., Menon, U. (2023). A Preliminary Study Exploring the Relationship between Occupational Health Hazards and Gut Microbiota among Firefighters. *Life, 13*(9), 1928.

Annamraju, A., Rajan, K., Zuo, X., Long, B. K., Pingali, S. V., Elder, T. J., Labbé, N. (2023). Atomic Level Interactions and Suprastructural Configuration of Plant Cell Wall Polymers in Dialkylimidazolium Ionic Liquids. *Biomacromolecules, 24*(5), 2164-2172.

Zhou, Z., Rajan, K., Young, T., Labbé, N., Wang, S. (2023). Effect of processing temperature on nanolignin quality during ultrafine friction grinding. *Industrial Crops and Products, 198*, 116685.

Kandhola, G., Djioleu, A., Rajan, K., Batta-Mpouma, J., Labbe, N., Sakon, J., Babst, B. A., Ghosh, A., Carrier, D. J., Kim, J.-W. (2022). Impact of species-based wood feedstock variability on physicochemical properties of cellulose nanocrystals. *Cellulose, 29*(15), 8213-8228.

Camfield, E., Bowman, A., Choi, J., Gwinn, K., Labbe, N., Rajan, K., Ownley, B., Moustaid-Moussa, N., D'Souza, D. H. (2022). Switchgrass extractives to mitigate Escherichia coli O157:H7 and Salmonella enterica serovar Typhimurium contamination of romaine lettuce at pre- and post-harvest. *Journal of Food Science, 87*(8), 3620-3631.

Rajan, K., Kim, K., Elder, T. J., Naskar, A. K., Labbe, N. (2022). Ionic-liquid-Assisted Fabrication of Lignocellulosic Thin Films with Tunable Hydrophobicity. *ACS Sustainable Chemistry & Engineering, 10*(27), 8835-8845.

Antunes, F. A., Rajan, K., Djioleu, A., Rocha, T. M., Brumano, L. P., de Souza Melo, Y. C., dos Santos, J. C., Rosa, C. A., Carrier, D. J., da Silva, S. S. (2022). Sustainable second-generation ethanol production from switchgrass biomass via co-fermentation of pentoses and hexoses using novel wild yeasts. *BioEnergy Research, 15*(2), 1157-1168.

Tumuluru, J. S., Rajan, K., Hamilton, C., Pope, C., Rials, T. G., McCord, J., Labbé, N., André, N. O. (2022). Pilot-Scale Pelleting Tests on High-Moisture Pine, Switchgrass, and Their Blends: Impact on Pellet Physical Properties, Chemical Composition, and Heating Values. *Frontiers in Energy Research, 9*.

Rajan, K., D'Souza, D. H., Keonhee, K., Choi, J. M., Elder, T., Carrier, D. J., Labbe, N. (2021). Production and Characterization of High Value Prebiotics from Biorefinery-relevant Feedstocks. *Frontiers in Microbiology, 12*, 675314.

Sutton, J. T., Rajan, K., Harper, D. P., Chmely, S. C. (2021). Improving UV curing in organosolv lignin-containing photopolymers for stereolithography by reduction and acylation. *Polymers, 13*(20), 3473.

Rajan, K., Elder, T., Abdoulmoumine, N., Carrier, D. J., Labbé, N. (2021). Correction: Understanding the in situ state of lignocellulosic biomass during ionic liquids-based engineering of renewable materials and chemicals. *Green Chemistry, 23*(18), 7312-7312.

Kanbargi, N., Goswami, M., Collins, L., Kearney, L. T., Bowland, C. C., Kim, K., Rajan, K., Labbe, N., Naskar, A. K. (2021). Synthesis of High-Performance Lignin-Based Inverse Thermoplastic Vulcanizates with Tailored Morphology and Properties. *ACS Applied Polymer Materials, 3*(6), 2911-2920.

Choi, J., Camfield, E., Bowman, A., Rajan, K., Labb\'e, N, Gwinn, K., Ownley, B., Moustaid-Moussa, N., D'Souza, D. (2021). Value-added switchgrass extractives for reduction of Escherichia coli O157: H7 and Salmonella Typhimurium populations on Formica coupons. *Food Microbiology, 95*, 103674.

Huang, W., Wu, M., Rajan, K., Wang, Z., Zhou, L. (2021). Valorization of organosolv lignin: Architectural strategy to enhance mechanical strength and UV protection in self-healing polymers. *Industrial Crops and Products, 159*, 113062.

Wang, J., Rajan, K., Annamraju, A., Chmely, S. C., Pingali, S. V., Carrier, D. J., Labbe, N. (2021). A sequential autohydrolysis-ionic liquid fractionation process for high quality lignin production. *Energy & Fuels, 35*(3), 2293-2302.

Kandhola, G., Djioleu, A., Rajan, K., Labbé, N., Sakon, J., Carrier, D. J., Kim, J.-W. (2020). Maximizing production of cellulose nanocrystals and nanofibers from pre-extracted loblolly pine kraft pulp: a response surface approach. *Bioresources and Bioprocessing, 7*(1), 19.

Rajan, K., Elder, T. J., Abdoulmoumine, N., Carrier, D. J., Labbe, N. (2020). Understanding the in situ state of lignocellulosic biomass during ionic liquids-based engineering of renewable materials and chemicals. *Green Chemistry, 22*(20), 6748-6766.

Zhang, L., Lyu, S., Zhang, Q., Chmely, S. C., Wu, Y., Melcher, C., Rajan, K., Harper, D. P., Wang, S., Chen, Z. (2020). Recycling hot-water extractions of lignocellulosic biomass in bio-refinery for synthesis of carbon nanoparticles with amplified luminescence and its application in temperature sensing. *Industrial Crops and Products, 145*(https://doi.org/10.1016/j.indcrop.2019.1), 112066.

Rajan, K., Djioleu, A., Kandhola, G., Labbe, N., Sakon, J., Carrier, D. J., Kim, J.-W. (2020). Investigating the effects of hemicellulose pre-extraction on the production and characterization of loblolly pine nanocellulose. *Cellulose, 27*, 3693–3706.

Dussourd, D. E., Valkenburg, M. V., Rajan, K., Wagner, D. L. (2019). A notodontid novelty: Theroa zethus caterpillars use behavior and anti-predator weaponry to disarm host plants. *PLOS ONE, 14*(7), e0218994.

Ghosh, A., Kim, K., Rajan, K., Bowland, C. C., Gurram, R. N., Montgomery, R. W., Manesh, A., Labbé, N., Naskar, A. K. (2019). Butanol-based organosolv lignin and reactive modification of poly (ethylene-glycidyl methacrylate). *Industrial & Engineering Chemistry Research, 58*(44), 20300-20308.

Tao, J., Rajan, K., Ownley, B., Gwinn, K., D'Souza, D. H., Moustaid-Moussa, N., Tschaplinski, T. J., Labbe, N. (2019). Natural variability and antioxidant properties of commercially cultivated switchgrass extractives. *Industrial Crops and Products, 138*, 111474.

Akato, K. M., Nguyen, N. A., Rajan, K., Harper, D. P., Naskar, A. K. (2019). A tough and sustainable fiber-forming material from lignin and waste poly(ethylene terephthalate). *RSC Advances, 9*, 31202.

Sutton, J. T., Rajan, K., Harper, D. P., Chmely, S. C. (2018). Lignin-containing photoactive resins for 3D printing by stereolithography. *ACS Applied Materials & Interfaces, 10*(42), 36456-36463.

Fang, H., Kandhola, G., Rajan, K., Djioleu, A., Carrier, D. J., Hood, K. R., Hood, E. E. (2018). Effects of oligosaccharides isolated from pinewood hot water pre-hydrolyzates on recombinant cellulases. *Frontiers in Bioengineering and Biotechnology, 6*, 55.

Rajan, K., Mann, J. K., English, E., Harper, D. P., Carrier, D. J., Rials, T. G., Labbe, N., Chmely, S. C. (2018). Sustainable hydrogels based on lignin-methacrylate copolymers with enhanced water retention and tunable material properties. *Biomacromolecules, 19*(7), 2665-422672.

Kandhola, G., Rajan, K., Labbe, N., Chmely, S. C., Heringer, N., Kim, J.-W., Hood, E. E., Carrier, D. J. (2017). Beneficial effects of *Trametes versicolor* pretreatment on saccharification and lignin enrichment of organosolv-pretreated pinewood. *RSC Advances, 7*(72), 45652-45661.

Rajan, K., Nelson, A., Adams, J. P., Carrier, D. J. (2017). Phytochemical recovery for valorization of loblolly pine and sweetgum bark residues. *ACS Sustainable Chemistry & Engineering, 5*(5), 4258-4266.

Rajan, K., Shi, Z., Ricke, S. C. (2016). Current aspects of Salmonella contamination in the US poultry production chain and the potential application of risk strategies in understanding emerging hazards. *Critical Reviews in Microbiology, 43*(3), 370-392.

Rajan, K., Carrier, D. J. (2016). Insights into exo-cellulase inhibition by the hot water hydrolyzates of rice straw. *ACS Sustainable Chemistry & Engineering, 4*(7), 3627-3633.

Kapoor, R. K., Rajan, K., Carrier, D. J. (2015). Applications of *Trametes versicolor* crude culture filtrates in detoxification of biomass pretreatment hydrolyzates. *Bioresource Technology, 189*, 99-106.

Chen, M.-H., Rajan, K., Carrier, D. J., Singh, V. (2015). Separation of xylose oligomers from autohydrolyzed Miscanthus x giganteus using centrifugal partition chromatography. *Food and Bioproducts Processing, 95*, 125-132.

Mohanram, S., Rajan, K., Carrier, D. J., Nain, L., Arora, A. (2015). Insights into biological delignification of rice straw by Trametes hirsuta and Myrothecium roridum and comparison of saccharification yields with dilute acid pretreatment. *Biomass and Bioenergy, 76*, 54-60.

Rajan, K., Carrier, D. J. (2014). Characterization of rice straw prehydrolyzates and their effect on the hydrolysis of model substrates using a commercial endo-Cellulase, beta-Glucosidase and cellulase cocktail. *ACS Sustainable Chemistry & Engineering, 2*(9), 2124-2130.

Rajan, K., Carrier, D. J. (2014). Effect of dilute acid pretreatment conditions and washing on the production of inhibitors and on recovery of sugars during wheat straw enzymatic hydrolysis. *Biomass and Bioenergy, 62*, 222-227.

**Intellectual Properties**

The University of Tennessee Research Foundation Invention disclosure-UTRF-18009-01. (2017). S. C. Chmely (PI), D. P. Harper & K. Rajan; "Exploiting the detrimental aspects of lignin to produce a superior 3D printing feedstock."

The University of Tennessee Research Foundation Invention disclosure-UTRF-17073-01. (2016). S. C. Chmely (PI), D. P. Harper & K. Rajan; "A modification of lignin (-OH groups) using 2-hydroxyethylmethacrylate-imidazole precursor for versatile applications."

**Presentations**

Firdaus, N. H. W., Rajan, K., Shamshina, J., Legako, J., Abidi, N., 2024 AIChE Annual Meeting, "Evaluating the Casting Parameters and Sustainability of Recycled Cellulosic Films for Food Packaging Applications," American Institute of Chemical Engineers (AIChE), San Diego, CA. (October 31, 2024).

Firdaus, N. H. W., Rajan, K., Shamshina, J., Legako, J., 2024 AIChE Annual Meeting, "Evaluating the Manufacturing Emissions and End-of-Life Impact of Paperboard Cartons Vs. PET Bottles," American Institute of Chemical Engineers (AIChE), San Diego, CA. (October 28, 2024).

Zhou, Z., Rajan, K., Saedi, S., Labbe, N., Wang, S., Frontiers in Biorefining, "From plant to protection: waterproof and oil-resistant paper tableware made from pure plant material," Southeastern SunGrant Center, St. Simons Island. (October 3, 2024).

Kamboj, G., Rajan, K., Kim, K., Stein, G. E., Nair, S., Labbe, N., Frontiers in Biorefining, "Lignin coating as a sustainable replacement for perfluorinated compounds in molded fiber and packaging products," Southeastern SunGrant Center, St. Simons Island. (October 3, 2024).

Rajan, K., Firdaus, N. H. W., Frontiers in Biorefining, "Tuning the thermoplasticity of recycled wastepaper films," Southeastern SunGrant Center, St. Simons Island. (October 2, 2024).

Firdaus, N. H. W., Rajan, K., Shamshina, J., Legako, J., Davis College Graduate Student Poster Competition 2024, "Life Cycle Assessment of Recycled Cellulosic Films for Food Packaging Applications," Texas Tech University. (September 26, 2024).

Rajan, K., Labbe, N., Wang, S., Vilmercati, P., Elder, T. J., 2024 Advanced Coating Symposium, "Investigating the self-assembly of lignin-siloxane co-oligomers to develop amphiphobic paper coatings," Technical Association of the Pulp and Paper Industry, Cleveland, OH. (April 28, 2024).

Rials, T., André, N., Hamilton, C., McCord, J., Rajan, K., Tumuluru, J. S., Adhikari, S., Labbé, N., 44th Symposium on Biomaterials, Fuels and Chemicals, "Development of near infrared spectroscopy for real-time assessment of lignocellulosic biomass chemistry impacting process performance," SIMB, New Orleans. (May 1, 2022).

**Conference Proceeding**

Camfield, E., Bowman, A., Choi, J., Rajan, K., Labbe, N., Gwinn, K., Ownley, B., Moustaid-Moussa, N., D'Souza, D. H. (2020). *Reduction of Escherichia coli O157: H7 Contamination of Romaine Lettuce by Switchgrass Extractives*. International Association for Food Protection.

Krishna, R., Choi, J., Rajan, K., Labbe, N., Gwinn, K., Ownley, B., D'Souza, D. H. (2020). *Hemp Extractives to Control Escherichia coli O157: H7 and Salmonella Typhimurium Populations on Formica Coupons*. International Association for Food Protection.

Chmely, S. C., Harper, D. P., Sutton, J., Rajan, K. (2020). 3D Printing by stereolithography with biorefinery lignin. *2020 Symposium on Biomaterials, Fuels and Chemicals*, Society for Industrial Microbiology and Biotechnology.

Kandhola, G., Rajan, K., Babst, B., Labbe, N., Carrier, D. J., Kim, J.-W. (2020). Evaluation of yields and properties of cellulose nanocrystals from different wood species. *2020 Symposium on Biomaterials, Fuels and Chemicals*, Society for Industrial Microbiology and Biotechnology.

Rajan, K., Pingali, S. V., Carrier, D. J., Chmely, S. C. (2019). Elucidation of lignin-HEMA hydrogel network using SANS, SAXS and TEM. *THE AMERICAN CHEMICAL SOCIETY* (vol. 257).

Rajan, K., Chmely, S., Harper, D., Labbe, N., Carrier, D. (2019). Photopolymerization of acrylated lignin monomers: Implications for lignin utilization in additive manufacturing by stereolithography. *THE AMERICAN CHEMICAL SOCIETY* (vol. 257).

Kandhola, G., Djioleu, A., Rajan, K., Babst, B., Headlee, W., Carrier, D., Kim, J.-W. (2018). Effect of source and purity of cellulose pulp on the yield and properties of cellulose nanocrystals extracted from forest biomass. *THE AMERICAN CHEMICAL SOCIETY* (vol. 256).

Rajan, K., Mann, J., Regmi, Y., Harper, D., Labbe, N., Chmely, S. (2018). Depolymerized lignin and acrylate-based renewable photopolymers. *THE AMERICAN CHEMICAL SOCIETY* (vol. 255).

Rajan, K., Harper, D., Rials, T., Julie Carrier, D., Labbe, N., Chmely, S. (2018). Developing renewable and high strength hydrogels by incorporating lignin. *THE AMERICAN CHEMICAL SOCIETY* (vol. 255).

Fang, H., Kandhola, G., Rajan, K., Hood, K. R., Hood, E. E. (2018). Identification of Cellulase Inhibitors Using Corn-seed Produced Enzymes. *IN VITRO CELLULAR & DEVELOPMENTAL BIOLOGY-PLANT* (4th ed., vol. 54, pp. 489).

Dussourd, D. E., Van Valkenburg, M., Rajan, K., Carrier, D. J., Wagner, D. L. (2018). A notodontid novelty: *Theroa zethus* caterpillars use their defensive weaponry to disarm the latex defense of their atypical host plants. *2018 International Congress of Entomology*.

Rajan, K., Chmely, S. C., Labbe, N., Carrier, D. J. (2017). Novel co-polymers synthesized from biorefinery by-products. *39th Symposium on Biotechnology for Fuels and Chemicals*, Society for Industrial Microbiology and Biotechnology.

Kandhola, G., Rajan, K., Labbe, N., Carrier, D. J. (2017). Bio-organosolv pulping of pine chips with Trametes versicolor for enhanced enzymatic hydrolysis and lignin extraction. *39th Symposium on Biotechnology for Fuels and Chemicals*, Society for Industrial Microbiology and Biotechnology.

Dussourd, D. E., Van Valkenburg, M., Rajan, K., Carrier, D. J. (2016). Caterpillar counterploy: Acid secretion of anti-predator gland deactivates plant defense. *2016 International Congress of Entomology*.

# TEACHING

## Courses Taught

**Texas Tech University**

PSS 1321, Agronomic Plant Science, 2 courses.
PSS 6000, Master's Thesis, 3 courses.
PSS 6001, Selected Topics in Plant and Soil Science: Advanced instrumentation for plant processing, 6 courses.
PSS 7000, Research, 5 courses.

## Directed Student Learning

Anjana Sabu, Doctoral Advisory Committee Chair, "Development of lignin-based PFAS remediation materials," Plant & Soil Science. (September 1, 2024 - Present).

Chakri Voruganty, Doctoral Advisory Committee Chair, "Development of lignin-based stimulants to enhance cold stress tolerance in crops," Plant & Soil Science. (September 1, 2024 - Present).

Shyla Chowdhury, Doctoral Advisory Committee Co-Chair, "Development of lignin-metal nanoparticles as natural, UV resistant coatings," Chemistry & Biochemistry. (August 1, 2024 - Present).

Khusboo Agrawal, Master's Thesis Committee Chair, "Advanced physico-chemical characterization of agricultural crop residues," Plant & Soil Science. (January 16, 2024 - Present).

Derseh Yilie Limeneh, Doctoral Advisory Committee Chair, "Developing sustainable, durable, and fully biobased single use containers from crop residues," Plant & Soil Science. (January 2, 2024 - Present).

Reshma Shibu, Doctoral Advisory Committee Co-Chair, Plant & Soil Science. (August 24, 2023 - Present).

Houra Farkhondehnia, Doctoral Advisory Committee Member, "Cellulose and chitosan soft materials for biomedical applications," Plant & Soil Science. (August 24, 2023 - Present).

Faisal Rahman, Master's Thesis Committee Member, Plant & Soil Science. (August 24, 2023 - Present).

Amir Shahin Shamsabadi, Doctoral Advisory Committee Member, "Biopolymer processing using supercritical and liquid CO2," Plant & Soil Science. (January 2, 2023 - Present).

Akhiri Zannat, Master's Thesis Committee Member, "Chitin materials from non-traditional sources," Plant & Soil Science. (August 10, 2023 - December 15, 2024).

Brooke Shumate, Graduate Dean's Representative, "Agronomic Impacts on Cotton (Gossypium hirsutum) Industrial Performance," Plant & Soil Science. (2020 - December 15, 2024).

Marissa Portillo, Directed Individual/Independent Undergraduate Study, "Developing biodegradable and durable disposable cutlery from agricultural crop residues," Plant & Soil Science. (January 10, 2024 - December 14, 2024).

Nur Hendri Fahyu Firdaus, Master's Thesis Committee Chair, "Evaluating the sustainability and synthesis of recycled cellulosic meat packaging," Plant & Soil Science. (August 24, 2023 - December 14, 2024).

# SERVICE

## University Service

Committee Member, Fiber and Biopolymer Engineering curriculum development. (August 2024 - December 2024).

## College Service

Committee Member, Davis College Inaugural Conference. (February 2024 - August 15, 2024).

## Department Service

Committee Member, Faculty search (Req. # 37249BR) for Assistant/Associate Professor of Biobased Products Manufacturing. (August 2024 - Present).

## Professional Service

Reviewer, Grant Proposal, USDA NIFA-AFRI, Alexandria, Virginia. (January 2024 - Present).

Reviewer, Grant Proposal, NSF’s SBIR/STTR, Alexandria, Virginia. (April 2023 - Present).

Reviewer, Journal Article, Frontiers, Lausanne. (2021 - Present).

Reviewer, Grant Proposal, USDA Small Business Innovation Research Program, Washington D.C. (January 2021 - Present).

Reviewer, Journal Article, Royal Society of Chemistry, London. (September 2020 - Present).

Reviewer, Journal Article, American Chemical Society, Washington D.C. (May 2015 - Present).

Reviewer, Journal Article, Elsevier, Amsterdam. (2021 - Present).

Reviewer, Journal Article, MDPI, Basel. (2021 - Present).

## Public Service

Event Organizer, Texas Alliance for Water Conservation (TAWC) Water College, Lubbock, TX. (December 1, 2023 - Present).

Participant - Outreach and Engagement Activity, Future Farmers of America, Lubbock, Texas. (November 29, 2023 - May 2, 2024).

## Service/Performance Partnerships

**Engaged Research and Creative Activity**: Stuart, H., Rajan, K., Firdaus, N. H. W., *Developing and testing biodegradable mulches from recycled paper for the greenhouse cultivation of strawberries*., Talkington School for Young Women Leaders (November 29, 2023 - May 2024).

# GENERAL

## Professional Memberships

Technical Association of the Pulp and Paper Industry. (October 2023 - Present).

American Chemical Society. (February 2018 - Present).

American Society of Agricultural and Biological Engineers. (January 1, 2013 - Present).

Society for Industrial Microbiology and Biotechnology (January 2013 – December 2016)

## Development Activities Attended

Faculty Fellowship, "Integrated Global Teaching & Scholarship Institute," Center for Global Communication, Lubbock, Texas, United States. (January 26, 2024 - May 3, 2024).