

# GURPREET VIRK

Lecturer

Agriculture Engineering Technology  
Department of Biosystems Engineering  
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## **EDUCATION**

### **Doctor of Philosophy** **2019 – 2022**

Crop and Soil Sciences, University of Georgia, Tifton, GA (GPA 3.9/4.0)

*Dissertation: Assessing the physiological basis of genetic yield improvement and seedling vigor in populations derived from advanced breeding lines*

Advisor: Dr. John Snider

### **Master of Science** **2017 – 2019**

Crop and Soil Sciences, University of Georgia, Tifton, GA (GPA 3.9/4.0)

*Thesis: Assessing the Underlying Physiological and Metabolic Mechanisms Promoting Seedling Vigor under Different Environmental Conditions in Cotton and Peanut Genotypes*

Advisors: Dr. Cristiane Pilon and Dr. John Snider

### **Diploma in Environmental Science** **2011 – 2013**

Institute of Technology & Advanced Learning, Brampton, ON, Canada (GPA – 3.7/4.0)

### **Bachelor of Technology in Agricultural Engineering** **2007 – 2011**

Punjab Agricultural University, India (GPA – 3.5/4.0)

## **PROFESSIONAL EXPERIENCE**

### **Assistant Research Scientist** **June 2023 – Present**

University of Georgia, Tifton, GA

### **Postdoctoral Research Associate** **January 2023 - May 2023**

University of Georgia, Tifton, GA

### **Research Assistant** **May 2017- December 2022**

University of Georgia, Tifton, GA

### **Teaching Assistant** **June 2021-August 2021**

University of Georgia, Tifton, GA

## **GRADUATE STUDENT ADVISING**

### **Committee Chair**

Mohit Kumar, MS - Crop and Soil Science 2023 - Present

Shubhdeep Singh, MS - Crop and Soil Science 2024 - Present

### **Committee Member**

Ashbin Bhat, MS - Crop and Soil Science 2023- Present

## **TEACHING EXPERIENCE**

<b>CRSS 4310/6310: Seed Technology/ Seed Physiology</b> University of Georgia, Tifton, GA Type of Involvement: Instructor	<b>Jan. 2023 - Present</b>
<b>CRSS 8010: Crop Growth, Development, and Management</b> University of Georgia, Tifton, GA Type of Involvement: Instructor	<b>Scheduled (Fall 2024)</b>
<b>CRSS 8050: Advanced Crop Production</b> University of Georgia, Tifton, GA Topic: Radiation Use Efficiency, Light Interception and Yield Type of Involvement: Guest Lecturer	<b>July 2021</b>
<b>CRSS 6650: Crop Physiology</b> University of Georgia, Tifton, GA Topic: Photorespiration and Photosynthesis Variations Type of Involvement: Guest Lecturer	<b>February 2020</b>
<b>CRSS 6650: Crop Physiology</b> University of Georgia, Tifton, GA Topic: Respiration, Photosynthesis and Environment Type of Involvement: Guest Lecturer	<b>February 2019</b>
<b>CRSS 2010: Crop Science</b> University of Georgia, Athens, GA Topic: Photosynthesis and Respiration Type of Involvement: Guest Lecturer	<b>October 2018</b>
<b>CRSS 8050: Advanced Crop Production</b> University of Georgia, Tifton, GA Topic: Crop Growth and Leaf Area Assessment Type of Involvement: Guest Lecturer	<b>July 2018</b>

## **SCHOLARLY ACTIVITIES AND CREATIVE WORKS**

<b>CATEGORY</b>	<b>TOTAL</b>
Book Chapters	<b>3</b>
Journal Articles (Published)	<b>19</b>
Journal Articles (Submitted/In Revisions)	<b>4</b>
Abstracts and Proceedings	<b>60</b>
Professional Presentations	<b>34</b>
Outreach Activities and Newsletter Publications	<b>15</b>

## **PUBLICATIONS**

### ***Book Chapter [3 total]***

- Snider, J., **Virk, G.**, Parkash, V., and Kaur, N. 2022. Effects of high temperature and drought on cotton physiology, yield, and fiber quality. In: Echer, F.R.; Rosolem, C.A. (eds).

Physiology applied to cotton management. Mato Grosso Cotton Institute (IMAmt). (In Portuguese). pp. 14-51.

- Snider, J.L., **G. Virk**, S. Byrd, G. Collins, and T. Raper. 2021. Environmental disorders. In: Faske, T. R., T. L. Kirkpatrick, C. S. Rothrock, and J. E. Woodward, Compendium of Cotton Diseases: Third Edition. APS Press, St. Paul, MN (in press).
- Snider, J.L., C. Pilon, and **G. Virk**. 2020. Seed Characteristics and Seedling Vigor. In: D.R. Chastain, G. Kaur, K.R. Reddy, and D.M. Oosterhuis (eds.) Seeds and Seedlings. The Cotton Foundation, Cordova, TN. TN. pp 9-22.

#### ***Journal Articles: Submitted [4 total]***

- Parkash, V., J.L. Snider, and **G. Virk**. Interactive effects of water deficit and Nitrogen deficiency on photosynthesis, its underlying component processes, and carbon loss process in cotton. Submitted to *Environmental and Experimental Botany*.
- Kaur, N., J.L. Snider, **G. Virk**, V. Parkash, A. H. Paterson, P. Roberts. Genotypic variation in functional contributors to yield for a diverse collection of field grown cotton. Submitted to *Crop Science*.
- Chastain, D., J.L. Snider, B. Singh, and **G. Virk**. Drought response in modeling of leaf photosynthetic parameters in two *Gossypium* species. Submitted to *Journal of Agronomy and Crop Science*.
- Parkash, V., J. Snider, **G. Virk**, K. Dhillon, and J.M. Lee. Differential sensitivities of photosynthetic and carbon loss processes govern water deficit-induced variation in net carbon assimilation rate for field-grown cotton. Submitted to *Environmental and Experimental Botany*.

#### ***Journal Articles: Published [19 total]***

- **Virk, G.**, J.L. Snider, P. Chee, S. Virk, V. Parkash, N. Kaur, and D. Jones. 2023. Physiological contributors to yield in advanced cotton breeding lines. *Crop Science*, 63 (6), 3264-3276.
- **Virk, G.**, J.L. Snider, P. Chee, S. Virk, and D. Jones. 2023. Impact of intra-boll yield components on lint production per boll and fiber quality in advanced cotton breeding lines. *Crop Science*.
- **Virk, G.**, J.L. Snider, and F. Bourland. 2023. Genotypic and environmental contributions to lint yield, yield components, and fiber quality in upland cotton from Arkansas variety trials over a 19-year period. *Crop Science*.
- Lawson, C.B., A. Pokhrel, J.M. Lee, D. Chalise, **G. Virk**, J. L. Snider, P. Roberts, P. Chee, L.C. Hand. 2023. Evaluating the impacts of wide row upland cotton (*Gossypium hirsutum* L.) production in Georgia. *Agronomy Journal*, 115(6), 2687-2876.

- Kaur, N., J. Snider, A. H. Paterson, T. L. Grey, C. Li, **G. Virk**, V. Parkash. Variation in thermotolerance of thylakoid component processes for diverse cotton genotypes. *Plant Physiology and Biochemistry*, 201, 107868.
- Parkash, V., J.L. Snider, C. Pilon, S. Bag, D. Jespersen, **G. Virk**, and K.K. Dhillon. Differential sensitivities of photosynthetic component processes govern oxidative stress levels and net assimilation rates in virus-infected cotton. *Photosynthesis Research*, 158(1), 41-56.
- Parkash, V., J.L. Snider, C. Pilon, S. Bag, D. Jespersen, **G. Virk**, and K.K. Dhillon. 2023. Determining the mechanistic basis for cotton leaf dwarf virus-induced photosynthetic inhibition in cotton. *Plant Physiology and Biochemistry*.
- Chalise, D.P. J.L. Snider, and **G. Virk**. 2023. Assessing the Effects of Cultivar and Nitrogen Application Rate on Seedling Vigor and Early Season Canopy Growth in Cotton. *Agronomy Journal*, 115(2), 713-725.
- Parkash, V., and J. Snider, A. Bruce, A. Ermanis, **G. Virk**, N. Kaur, G. Collins, K. Chapman. 2023. Effects of Cultivar and Nitrogen Application Rate on Lint, Seed, Oil, and Protein Yields of Field-Grown Cotton. Accepted in *Crop Science*.
- Parkash, V., J. Snider, H.Y. Sintim, L.C. Hand, C. Pilon, **G. Virk**, and A. Pokhrel. 2022. Differential sensitivities of photosynthetic processes and carbon loss mechanisms govern N-induced variation in net assimilation rate for field grown cotton (*Gossypium hirsutum* L.). *Journal of Experimental Botany*, 74(8), 2638-2652.
- Snider, J., S. Virk, L.C. hand, and **G. Virk**. 2022. Considerations for stand establishment and early seedling growth in cotton. *Crops and Soils*, 55: 48-55.
- **Virk, G.**, J.L. Snider, P. Chee, D. Jespersen, C. Pilon, G. Rains, P. Roberts, N. Kaur, A. Ermanis, and V. Tishchenko. 2021. Extreme temperatures affect seedling growth and photosynthetic performance of advanced cotton genotypes. *Industrial Crops and Products*, 172: 114025.
- Snider, J.L., G. Harris, P. Roberts, C. Meeks, D. Chastain, M. Bange, and **G. Virk**. 2021. Cotton physiological and agronomic response to nitrogen application rate. *Field Crops Research*. 270: 108194.
- Ermanis, A., S. Gobbo, J.L. Snider, Y. Cohen, V. Liakos, L. Lacerda, C.D. Perry, M. A. Bruce, **G. Virk**, and G. Vellidis. 2021. Defining physiological contributions to yield loss in response to irrigation in cotton. *Journal of Agronomy. & Crop Science.*, 207(2): 186-196.
- **Virk, G.**, C. Pilon, J.L. Snider, and R.S. Tubbs. 2020. Early-season vigor in peanuts is dependent on leaf area responses to temperature. *Agronomy Journal*, 1-12.
- **Virk, G.**, J.L. Snider, and C. Pilon. 2019. Physiological contributors to early season whole crop vigor in cotton. *Crop Science* 59 (6): 2774-2783.
- **Virk, G.**, C. Pilon, and J.L. Snider. 2019. Impact of First True Leaf Photosynthetic Efficiency on Peanut Plant Growth under Different Early-Season Temperature Conditions. *Peanut Science* 46(2).

- **Virk, G.**, J.L. Snider, and C. Pilon. 2020. Associations between First True leaf physiology and Seedling Vigor in Cotton under Different Field Conditions. *Crop Science* 60: 404-418.
- Snider, J.L., N. Thangthong, C. Pilon, **G.K. Virk**, and V. Tishchenko. 2018. OJIP-fluorescence parameters as rapid indicators of cotton (*Gossypium hirsutum* L.) seedling vigor under contrasting growth temperature regimes. *Plant Physiology and Biochemistry*. 132:249-257.

## **GRANTS**

### ***Awarded [\$135,150 to Dr. Virk's program]***

- **\$36,000.** (PI) Evaluating the effect of irrigation and nitrogen management on corn growth, root development, nutrient and water use efficiency, and yield components. 2024. Georgia Commodity Commission for Corn.
- **\$75,000.** (PI) Utilizing plant-based, precision irrigation scheduling and remote sensing to improve water use efficiency, and peanut irrigation management recommendations in Georgia. 2024. National Peanut Board.
- **\$24,150.** (PI) Determination of seed vigor and seed performance under various growth temperatures and to identify best indicators of seed performance under field conditions. 2024. Cotton incorporated.

### ***Pending [\$668,490 total, \$199,000 to Dr. Virk's program]***

- **\$21,300.** (Co-PI) Physiological seed quality: Impact of drought at flowering and fruiting. 2024. Georgia Commodity Commission for Peanuts.
- **\$598,190.** (Co-PI) Enhancing resilience of cropping systems in Georgia through soil amendment with biochar. 2024. USDA NRCS.
- **\$19,000.** (PI) Influence of different nitrogen rates on root development, nitrogen use efficiency, and yield components in corn under different irrigation practices. 2024. Fertilizer Forum.
- **\$30,000.** (Co-PI) On-farm evaluation of dry pre-plant fertilizer application method to improve nutrient efficiency and corn yield. 2024. Georgia Commodity Commission for Corn.

### ***Technical Conference Proceedings and Abstracts [60 total]***

\*indicates presentation by a student advised by Dr. Virk

- **Virk, G.**, J.L. Snider, L.C. Hand, G. Vellidis, W. Porter, Y. Liu. Utilize crop physiological data to parameterize and validate a plant-based crop water use model for cotton. Beltwide Cotton Conference, January 2024.
- \*Kumar, M., **G. Virk**, S. Virk, J.L. Snider, J. Lee, V. Parkash. Evaluating the effect of Thryvon technology on cotton root and shoot growth. Beltwide Cotton Conference, January 2024.
- Parkash, V., J.L. snider, **G. Virk**, K. K. Dhillon, J. Lee. Differential sensitivities of photosynthetic and carbon loss processes govern water deficit induced variation in net carbon assimilation rate for field grown cotton. Beltwide Cotton Conference, January 2024.

- Katta, J.R., J.L. Snider, S. Carlson, **G. Virk**, V. Parkash, N. Kaur, D. Chalise, A. Sehgal, G. Kaur, G. Singh, E. Amiri, D. Chastain, H. Laza, W. Guo, G. Collins. Assessing the extrafloral nectar production in cotton by variety and environment. Beltwide Cotton Conference, January 2024.
- Bredu, E., J.L. Snider, C. Pilon, L.C. Hand, P. Roberts, V. Parkash, J. Lee, **G. Virk**, G. Collins. How management practices in one season affect stand establishment, canopy development, and yield in the following season. Beltwide Cotton Conference, January 2024.
- **Virk, G.**, S. Virk, G. Harris, and R. Roth. Effect of Phosphorus rates on root and shoot growth, phosphorus uptake and various yield components of Corn. 2023 ASA-CSSA-SSA Annual Meeting, St Louis, Missouri, November, 2023.
- **Virk, G.**, Snider, J., Chee, P., Virk, S., Parkash, V., Kaur, N., & Jones, D. Physiological Contributors to Yield in Advanced Cotton Breeding Lines. ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO, November, 2023.
- Parkash, V., Snider, J., **Virk, G.**, & Lee, J. M. Response of Photosynthesis and Its Component Processes to Drought Stress and N Deficiency in Cotton. ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO, November, 2023.
- **Virk, G.**, C. Pilon, J.L. Snider, L. Moreno, D. Jespersen, and V. Tishchenko. Low temperatures impact on photosynthetic efficiency of peanut plants after early emergence and recovery potential of seedlings. 2023 APRES annual Meeting, Savannah, GA, July 11-14.
- **Virk, G.**, J.L. Snider, and F. Bourland. 2023. Genotypic and environmental contributions to lint yield, yield components and fiber quality in upland cotton from Arkansas variety trials over a period of 18 years. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12.
- **Virk, G.**, Snider, J., Chee, P., Virk, S., Parkash, V., & Kaur, N. 2023. Assessing the Physiological Basis of Genetic Yield Improvement and Seedling Vigor in Advanced Cotton Breeding Lines. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12
- Lee, J. M., Snider, J., Hand, C. C., Roberts, P., Culpepper, S., Chalise, D. P., Pokhrel, A., Kaur, N., Parkash, V., and **Virk, G.** 2023. The Effect of Plant Growth Management and Drought Stress on Yield Components and Fiber Quality of Field Grown Cotton. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12
- Lee, J. M., Snider, J., Hand, C. C., Roberts, P., Culpepper, S., Chalise, D. P., Pokhrel, A., Kaur, N., Parkash, V., and **Virk, G.** 2023. The Effect of Plant Growth Management on Cotton Susceptibility to Drought during the Flowering and Boll Filling Stage. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12
- Kaur, N., Snider, J., Paterson, A. H., **Virk, G.**, and Parkash, V. 2023. Photosynthetic Thermotolerance in Diverse Cotton Genotypes. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12
- Parkash, V., Snider, J., **Virk, G.**, Lee, J. 2023. Interactive Effects of Water Stress and Nitrogen Deficiency on the Underlying Processes Driving Net Assimilation in Field-Grown Cotton. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12

- Parkash, V., Snider, J., Sintim, H., Hand, C. C., **Virk, G.**, and Pokhrel, A. 2023. Determining the Mechanistic Basis for N Deficiency-Induced Photosynthetic Inhibition in Field-Grown Cotton. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12
- Snider, J., Sehgal, A., Kaur, G., Singh, G., Laza, H., Amiri, E., Guo, W., **Virk, G.**, Chastain, D., Parkash, V., Kaur, N., Chalise, D. 2023. Multi-Environment Assessment of Cultivar Variation in Extrafloral Nectar Production in Cotton. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12
- Kaur, N., Snider, J., Paterson, A. H., **Virk, G.**, and Parkash, V. 2023. Assessing Physiological Contributors to Productivity of Diverse Cotton Genotypes. 2023 Beltwide Cotton Conferences, New Orleans, Louisiana, January 10-12
- **Virk, G.**, J.L. Snider, and F. Bourland. 2022. Genotypic and environmental contributions to lint yield, yield components and fiber quality in upland cotton from Arkansas variety trials over a period of 18 years. ASA/CSSA International Annual Meeting Baltimore, November 5-9.
- **Virk, G.**, J.L. Snider, P. Chee, S. Virk, V. Parkash, and N. Kaur. 2022. Physiological and within-boll yield components contributors to yield and fiber quality in advanced cotton breeding lines. ASA/CSSA International Annual Meeting Baltimore, November 5-9.
- Parkash, V., J.L. Snider, H. Sintim, C.C. Hand, **G. Virk**, and A. Pokhrel. 2022. Differential sensitivities of photosynthetic processes and carbon loss mechanisms govern N-induced variation in net assimilation rate for field grown cotton. ASA/CSSA International Annual Meeting Baltimore, November 5-9.
- Lee, J.M., J.L. Snider, C.C. Hand, P. Roberts, S. Culpepper, D. P. Chalise, A. Pokhrel, N. Kaur, and **G. Virk**. 2022. The effect of plant growth management on cotton susceptibility to drought during flowering and boll filling stages. ASA/CSSA International Annual Meeting Baltimore, November 5-9.
- Kaur, N., J.L. Snider, A. H. Paterson, **G. Virk**, and V. Parkash. 2022. Effect of high temperature on photosynthetic processes and their thermotolerance in diverse cotton genotypes. ASA/CSSA International Annual Meeting Baltimore, November 5-9.
- Kaur, N., J.L. Snider, A. H. Paterson, **G. Virk**, and V. Parkash. 2022. Impact of physiological factors on productivity in diverse cotton genotypes. ASA/CSSA International Annual Meeting Baltimore, November 5-9.
- Parkash, V., J.L. Snider, and **G. Virk**. 2022. Interactive effects of water stress and nitrogen deficiency on the underlying processes driving net assimilation in field grown cotton. ASA/CSSA International Annual Meeting Baltimore, November 5-9.
- **Virk, G.K.**, J.L. Snider, P. Chee, N. Kaur, and A. Ermanis. 2022. Temperature extremes influence on growth and photosynthetic performance of advanced cotton genotypes. Southern ASA Annual Meeting, New Orleans, February 12-14.
- **Virk, G.K.**, J.L. Snider, P. Chee, S. Virk, N. Kaur, and V. Parkash. 2022. Lint yield and fiber quality as affected by various physiological parameters and within yield components in advanced cotton breeding lines. Southern ASA Annual Meeting, New Orleans, February 12-14.

- Parkash, V., J.L. Snider, P. A. Pokhrel, **G. Virk**, H. Sintim, L.C. Hand, C. Pilon. 2022. Impact of Nitrogen deficiency on physiological processes in cotton. Southern ASA Annual Meeting, New Orleans, February 12-14.
- **Virk, G.K.**, J.L. Snider, P. Chee, N. Kaur, and A. Ermanis. 2022. Impact of extreme temperatures on growth and photosynthetic performance of advanced cotton genotypes. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January 4-6.
- **Virk, G.K.**, J.L. Snider, P. Chee, S. Virk, N. Kaur, and V. Parkash. 2022. Influence of various within boll yield components on lint yield and fiber quality in advanced cotton breeding lines. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January 4-6.
- Kaur, N., J.L. Snider, A. Paterson, **G. Virk**, and V. Parkash. 2022. Physiological factors affecting productivity in diverse cotton genotypes. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January 4-6.
- Parkash, V., J.L. Snider, A. Pokhrel, **G. Virk**, H. Sintim, L.C. Hand, and C. Pilon. 2022. Effect of nitrogen deficiency on physiological processes in cotton. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January 4-6.
- Kaur, N., J.L. Snider, A. Paterson, and **G. Virk**. 2022. Genotypic variation in thermotolerance of thylakoid component processes for diverse cotton genotypes. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January 4-6.
- Lee, J.M., J.L. Snider, L.C. Hand, P. Roberts, D. Chalise, A. Pokhrel, N. Kaur, V. Parkash, and **G. Virk**. 2022. The effect of plant growth management on cotton susceptibility to drought during flowering and boll filling stages. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January 4-6.
- **Virk, G.**, J.L. Snider, P. Chee, N. Kaur, and A. Ermanis. 2021. Impact of temperature extremes on growth and photosynthetic performance of advanced cotton genotypes as affected by temperature extremes. ASA/CSSA International Annual Meeting Salt Lake City, UT, November 7-10.
- **Virk, G.**, J.L. Snider, P. Chee, S. Virk, N. Kaur, and V. Parkash. 2021. Impact of Physiological processes and individual yield components on lint yield and fiber quality in advanced cotton breeding lines. ASA/CSSA International Annual Meeting Salt Lake City, UT, November 7-10.
- Kaur, N., J.L. Snider, A. Paterson, **G. Virk**, and V. Parkash. 2022. Physiological factors affecting productivity in diverse cotton genotypes. ASA/CSSA International Annual Meeting Salt Lake City, UT, November 7-10.
- Kaur, N., J.L. Snider, A. Paterson, and **G. Virk**. 2022. Genotypic variation in thermotolerance of thylakoid component processes for diverse cotton genotypes. ASA/CSSA International Annual Meeting Salt Lake City, UT, November 7-10.
- **Virk, G.K.**, J.L. Snider, P. Chee, N. Kaur, and A. Ermanis. 2021. Effect of temperature extremes on growth and photosynthetic performance of different genotype cotton seedlings. Virtual Beltwide Cotton Conferences, January 05-07.



- **Virk, G.K.**, J.L. Snider, P. Chee, N. Kaur, and A. Ermanis. 2021. Growth and photosynthetic performance of advanced cotton genotypes as affected by temperature extremes. American society of Plant Biologists, Virtual Plant Biology World summit, July 19-23.
- **Virk, G.K.**, J.L. Snider, and C. Pilon. 2020. Contributions of Various Physiological Processes on Early Season Whole Crop Vigor in Cotton. Beltwide Cotton Conferences. Austin, Texas, January 08-10.
- **Virk, G.K.**, J.L. Snider, and C. Pilon. 2020. Cotton Seedling Vigor as Affected by First True Leaf Physiology under Different Field Conditions. Beltwide Cotton Conferences. Austin, Texas, January 08-10.
- **Virk, G.K.**, J.L. Snider, and C. Pilon. 2019. Effect of Various Physiological Processes on Early Season Crop Vigor in Cotton. ASA/CSSA International Annual Meeting. San Antonio, November 10-13.
- **Virk, G.K.**, J.L. Snider, and C. Pilon. 2019. Impact of First True Leaf Physiology on Cotton Seedling Vigor under Different Field Conditions. ASA/CSSA International Annual Meeting. San Antonio, November 10-13.
- **Virk, G.K.**, J.L. Snider, and C. Pilon. 2019. Contributions of the First True Leaf to Seedling Vigor under Different Field Conditions. ASA Southern Regional Branch Annual Meeting. Birmingham, AL, February 03-05.
- Snider, J.L., N. Thangthong, C. Pilon, **G.K. Virk**, V. Tishchenko. 2019. Chlorophyll Fluorescence Parameters as Rapid Indicators of Cotton Seedling Vigor under Contrasting Growth Temperature Regimes. Beltwide Cotton Conferences. New Orleans, LA, January 08-10.
- **Virk, G.K.**, J.L. Snider, and C. Pilon. 2019. Cotton Seedling Vigor as Affected by First True Leaf Physiology under Different Field Conditions. Beltwide Cotton Conferences. New Orleans, LA, January 08-10.
- **Virk, G.K.**, J.L. Snider, and C. Pilon. 2019. Physiological Processes Contributing to Early Season Crop Vigor in Cotton. Beltwide Cotton Conferences. New Orleans, LA, January 08-10.
- **Virk, G.K.**, C. Pilon, and J.L. Snider. 2018. Effect of Planting Conditions on Early Season Crop Growth of Peanut Cultivars. ASA/CSSA International Annual Meeting. Baltimore, MD, November 04-07.
- **Virk, G.K.**, J.L. Snider, and C. Pilon. 2018. Effect of the First True Leaf of Cotton Cultivars on Seedling Vigor under field Conditions. ASA/CSSA International Annual Meeting. Baltimore, MD, November 04-07.
- **Virk, G.K.**, C. Pilon, and J.L. Snider. 2018. Planting Conditions Influence Early Season Crop Growth of Peanut Cultivars. APRES 50<sup>th</sup> Annual Meeting, Williamsburg, VA, July 10-12.
- **Virk, G.K.**, C. Pilon, and J.L. Snider. 2018. First True Leaf Physiology of Peanut Plants under Different Field Conditions. APRES 50<sup>th</sup> Annual Meeting, Williamsburg, VA, July 10-12.
- Fabreti, B.S., C. Pilon, **G.K. Virk**, N. Thangthong, C.K. Kvien, C.C. Holbrook, and P. Ozias-Akins. 2018. Drought Stress Effects on Physiological Mechanisms of Peanut Genotypes. APRES 50<sup>th</sup> Annual Meeting, Williamsburg, VA, July 10-12.

- **Virk, G.K.**, J.L. Snider, C. Pilon, and M.A. Scolari. 2018. Impact of the First True Leaf on Seedling Vigor under Field Conditions. In: ASA Southern Regional Branch Meeting, American Society of Agronomy. Jacksonville, FL, February 4-6.
- **Virk, G.K.**, J.L. Snider, C. Pilon, and M.A. Scolari. 2018. Planting seed mass influences early season crop growth characteristics. In: Proc. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January 3-5.
- **Virk, G.K.**, J.L. Snider, C. Pilon, and M.A. Scolari. 2018. Contributions of the first true leaf to seedling vigor under field conditions. In: Proc. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January 3-5.
- Moreno, L.A., C. Pilon, Silva, B.F., **G.K. Virk**, C. Kvien, C.C. Holbrook, and P. Ozias-Akins. 2018. Physiological Mechanisms Contributing to Drought Tolerance of Peanut Genotypes. ASA/CSSA International Annual Meeting. Baltimore, MD, November 04-07.
- Pilon, C., **G. Virk**, J.L. Snider, R.S. Tubbs, and M.A. Scolari. 2017. Desenvolvimento de plantas de amendoim em diferentes épocas de semeadura. Encontro sobre a cultura do amendoim. Jaboticabal. 11:72071.
- Pilon, C., **G.K. Virk**, J.L. Snider, R.S. Tubbs, and M.A. Scolari. 2017. Planting date effect on seedling vigor of peanut cultivars. ASA/CSSA/SSSA International Annual Meeting. Tampa, FL, October 22-25.
- Snider, J.L., **G.K. Virk**, C. Pilon, and M.A. Scolari. 2017. Assessing physiological contributions of the first true leaf to seedling vigor for cotton under field conditions. ASA/CSSA/SSSA International Annual Meeting. Tampa, FL, October 22-25.

***Professional Presentations [34 total; 18 oral; 16 poster]***

- Utilize crop physiological data to parameterize and validate a plant-based crop water use model for cotton. Oral Presentation. Beltwide Cotton Conference, Fort Worth Texas, January 2024.
- Physiological contributors to yield in advanced cotton breeding lines. Oral Presentation. 2023 ASA-CSSA-SSA Annual Meeting, St Louis, Missouri, November, 2023.
- Effect of Phosphorus rates on root and shoot growth, phosphorus uptake and various yield components of Corn. Oral Presentation. 2023 ASA-CSSA-SSA Annual Meeting, St Louis, Missouri, November, 2023.
- Low temperatures impact on photosynthetic efficiency of peanut plants after early emergence and recovery potential of seedlings. Oral Presentation. 2023 APRES annual Meeting, Savannah, GA, July 11-14.
- Genotypic and environmental contributions to lint yield, yield components and fiber quality in upland cotton from Arkansas variety trials over a period of 19 years. Oral Presentation. 2023 Beltwide Cotton Conference, January 10-12, 2023.
- Assessing the Physiological Basis of Genetic Yield Improvement and Seedling Vigor in Advanced Cotton Breeding Lines. Poster Presentation. 2023 Beltwide Cotton Conference, January 10-12, 2023.

- Genotypic and environmental contributions to lint yield, yield components and fiber quality in upland cotton from Arkansas variety trials over a period of 19 years. Oral Presentation. ASA/CSSA International Annual Meeting Baltimore, November, 2022.
- Physiological and within-boll yield components contributors to yield and fiber quality in advanced cotton breeding lines. Poster Presentation. ASA/CSSA International Annual Meeting Baltimore, November, 2022.
- Temperature extremes influence on growth and photosynthetic performance of advanced cotton genotypes. Oral Presentation. Southern ASA Annual Meeting, New Orleans, February, 2022.
- Lint yield and fiber quality as affected by various physiological parameters and within yield components in advanced cotton breeding lines. Poster Presentation. Southern ASA Annual Meeting, New Orleans, February, 2022.
- Impact of extreme temperatures on growth and photosynthetic performance of advanced cotton genotypes. Oral Presentation. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January, 2022.
- Influence of various within boll yield components on lint yield and fiber quality in advanced cotton breeding lines. Poster Presentation. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January, 2022.
- Impact of temperature extremes on growth and photosynthetic performance of advanced cotton genotypes as affected by temperature extremes. Oral Presentation. ASA/CSSA International Annual Meeting Salt Lake City, UT, November, 2021.
- Impact of Physiological processes and individual yield components on lint yield and fiber quality in advanced cotton breeding lines. Poster Presentation. ASA/CSSA International Annual Meeting Salt Lake City, UT, November, 2021.
- Effect of temperature extremes on growth and photosynthetic performance of different genotype cotton seedlings. Oral Presentation. Virtual Beltwide Cotton Conferences, January, 2021.
- Growth and photosynthetic performance of advanced cotton genotypes as affected by temperature extremes. Poster Presentation. American society of Plant Biologists, Virtual Plant Biology World summit, July, 2021.
- Contributions of Various Physiological Processes on Early Season Whole Crop Vigor in Cotton. Oral Presentation. Beltwide Cotton Conferences. Austin, Texas, January, 2020
- Cotton Seedling Vigor as Affected by First True Leaf Physiology under Different Field Conditions. Poster Presentation. Beltwide Cotton Conferences. Austin, Texas, January, 2020
- Effect of Various Physiological Processes on Early Season Crop Vigor in Cotton. Oral Presentation. ASA/CSSA International Annual Meeting. San Antonio, November, 2019.
- Impact of First True Leaf Physiology on Cotton Seedling Vigor under Different Field Conditions. Poster Presentation. ASA/CSSA International Annual Meeting. San Antonio, November, 2019.
- Planting Conditions Influence Early Season Vigor of Peanut Cultivars. Poster Presentation. APRES Annual Meeting, Auburn, AL, July, 2019.

- Contributions of the First True Leaf to Seedling Vigor under Different Field Conditions. Poster Presentation. ASA Southern Regional Branch Annual Meeting. Birmingham, AL, February, 2019.
- Fluorescence based Indicators of Seedling Vigor Under Contrasting Growth Temperatures. Oral Presentation. Beltwide Cotton Conferences. New Orleans, LA. January, 2019.
- Yield Components and Fiber Quality Under Drought Stress in Cotton. Oral Presentation. Beltwide Cotton Conferences. New Orleans, LA, January, 2019.
- Cotton Seedling Vigor as Affected by First True Leaf Physiology under Different Field Conditions. Poster Presentation. Beltwide Cotton Conferences. New Orleans, LA, January, 2019.
- Physiological Processes Contributing to Early Season Crop Vigor in Cotton. Oral Presentation. Beltwide Cotton Conferences. New Orleans, LA, January, 2019.
- Effect of Planting Conditions on Early Season Crop Growth of Peanut Cultivars. Oral Presentation. ASA/CSSA International Annual Meeting. Baltimore, MD, November, 2018.
- Effect of the First True Leaf of Cotton Cultivars on Seedling Vigor under field Conditions. Poster Presentation. ASA/CSSA International Annual Meeting. Baltimore, MD, November, 2018.
- Planting Conditions Influence Early Season Crop Growth of Peanut Cultivars. Oral Presentation. APRES 50<sup>th</sup> Annual Meeting, Williamsburg, VA, July, 2018.
- First True Leaf Physiology of Peanut Plants under Different Field Conditions. Poster Presentation. APRES 50<sup>th</sup> Annual Meeting, Williamsburg, VA, July, 2018.
- Impact of First True Leaf on Seedling Vigor Under Field Conditions. Poster Presentation. 4<sup>th</sup> Annual Emory Cheek Research Poster Symposium, April, 2018.
- Impact of the First True Leaf on Seedling Vigor under Field Conditions. Poster Presentation. In: ASA Southern Regional Branch Meeting, American Society of Agronomy, Jacksonville, FL, February, 2018.
- Planting seed mass influences early season crop growth characteristics. Oral Presentation. In: Proc. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January, 2018.
- Contributions of the first true leaf to seedling vigor under field conditions. Poster Presentation. In: Proc. Beltwide Cotton Conf., National Cotton Council of America. San Antonio, Texas, January, 2018.

## **OUTREACH ACTIVITIES AND NEWSLETTER PUBLICATIONS**

- Cotton physiology. UGA Cotton-Peanut Field Day. University of Georgia, Tifton, GA, September 7, 2022.
- Snider, J.L., **G. Virk**, V. Parkash, and J. Lee. Factors responsible for boll retention/shed in cotton. University of Georgia Cotton Team Newsletter, August, 2022.
- Snider, J.L., V. Parkash, **G. Virk**, and C. Hand. Abiotic stresses in cotton. University of Georgia Cotton Team Newsletter, July, 2022.

- Snider, J.L., V. Parkash, **G. Virk**, and C. Hand. Crop monitoring and management. University of Georgia Cotton Team Newsletter, June, 2022.
- Snider, J.L., **G. Virk**, V. Parkash, and C. Hand. Early season growth and canopy development. University of Georgia Cotton Team Newsletter, May, 2022.
- Snider, J.L., **G. Virk**, V. Parkash, and C. Hand. Planting date selection, germination and emergence in cotton. University of Georgia Cotton Team Newsletter, April, 2022.
- Snider, J., S. Virk, L. C. Hand, W. porter and **G. Virk**. 2022. Considerations for stand establishment and early seedling growth in cotton. Submitted for March issue Crop and soils magazine.
- **Virk, G.** How plants Use Water. 2021 4-H2O Camp. C.M. Stripling Irrigation Research Park.
- Snider, J.L., L.C. Hand, and **G. Virk**. Causes of fruit shed in Cotton. University of Georgia Cotton Team Newsletter, July 5, 2021.
- Snider, J.L., and **G. Virk**. Temperature and early-season crop growth. University of Georgia Cotton Team Newsletter, May 5, 2021.
- Snider, J.L., **G. Virk**, and L.C. Hand. Germination and Stand Establishment in Cotton. University of Georgia Cotton Team Newsletter, April 5, 2021.
- Snider, J.L., and **G. Virk**. Germination and Emergence in Cotton. University of Georgia Cotton Team Newsletter, May 5, 2020.
- Snider, J.L., and **G. Virk**. Temperature and Early Season Growth. University of Georgia Cotton Team Newsletter, June 5, 2020.
- Cotton physiology. UGA Cotton-Peanut Field Day. University of Georgia, Tifton, GA, 2019.
- Crop physiology. UGA Cotton-Peanut Field Day. University of Georgia, Tifton, GA, 2018.

### **AWARDS, HONORS AND CERTIFICATIONS**

- **2<sup>nd</sup> Place:** Beltwide MS student poster competition (Student advised by Dr. Virk).
- **The Graduate School Student Travel Grant Award** to attend International Annual Meeting Baltimore, November, 2022 funded by Graduate School, University of Georgia.
- **Outstanding Graduate Student Scholar Award**, University of Georgia, College of Agricultural and Environmental Sciences, April, 2022.
- **Gerald O. Mott Meritorious Graduate Student Award in Crop Science.** University of Georgia Department of Crop and Soil Sciences. Athens, GA, February, 2022.
- **1<sup>st</sup> Place:** South Agronomy Society PhD Student Poster Competition. (February, 2022)
- **2<sup>nd</sup> Place:** South Agronomy Society PhD Student Oral Competition. (February, 2022)
- **3<sup>rd</sup> Place:** Beltwide PhD Student Oral Competition. (January, 2022)
- **3<sup>rd</sup> Place:** Beltwide PhD Student Poster Competition. (January, 2022)
- **1<sup>st</sup> Place:** Beltwide PhD Student Poster Competition. (January, 2020)
- **1<sup>st</sup> Place:** Beltwide Oral Graduate Student Competition. (January, 2019)
- **3<sup>rd</sup> Place:** Beltwide Graduate Student Poster Competition. (January, 2019)
- **2<sup>nd</sup> Place:** American Society of Agronomy Student Poster Competition. (November, 2018)

- **1<sup>st</sup> place:** 4<sup>th</sup> Annual Emory Cheek Research Poster Symposium. (April, 2018)
- **2<sup>nd</sup> place:** South Agronomy Society Student Poster Competition. (February, 2018)
- Occupation Health and Safety Certification, Institute of Technology and Advanced Learning, Sheridan College, Brampton, ON, Canada (December, 2012)
- Graduated with Honors distinction, Institute of Technology and Advanced Learning, Sheridan College, Brampton, ON, Canada (April, 2013)
- Merit Scholarship Holder and Student Fellow at Punjab Agricultural University (2006 – 2010)

### **PROFESSIONAL MEMBERSHIP**

American Society of Plant Biologists, 2020 - Present

Agronomy Society of America, 2017 - Present

Crop Science Society of America, 2017 - Present

Soil Science Society of America, 2017 - Present

American Peanut Research and Education Society, 2017 - Present

### **PROFESSIONAL SERVICE**

#### **Event Judging:**

- PhD Student competition, 2023 APRES Annual Meeting, Savannah, GA.
- Society Wide Graduate Student Poster Competition, American Society of Crop Science International Annual Meeting, Salt Lake City, UT. November 7-10, 2021.

#### **Peer Review:**

- Field Crops Research (5 reviews)
- Crop Science (3 reviews)
- Journal of Crop Improvement (1 review)
- Agronomy Journal (3 review)

#### **Sessions Moderated**

- General Physiology Session, 2023 APRES Annual Meeting, Savannah, GA.

### **PROFESSIONAL DEVELOPMENT**

- Attended the Peanut farm show. Tifton, GA, January, 2023.
- Attended the Georgia Cotton Conferences and Cotton Production Workshop. Tifton, GA. January 2023.
- Attended the Beltwide Cotton Conference Annual Meeting in New Orleans. January, 2023.
- Attended the ASA, CSSA annual meeting in Baltimore, MD. November, 2022.
- Attended the Southern ASA, CSSA annual meeting in New Orleans. February, 2022.
- Attended the Georgia Cotton Conferences and Cotton Production Workshop. Tifton, GA. January 2022.

- Attended the Beltwide Cotton Conferences in San Antonio, TX. January, 2022.
- Attended the ASA-CSSA Annual Meeting, Salt Lake City, UT. November, 2021.
- Attended the ASPB Annual Virtual Meeting. July, 2021.
- Attended the Beltwide Cotton Conferences Annual Virtual Meeting. January, 2021.
- Attended the Georgia Cotton Conferences and Cotton Production Workshop. Tifton, GA. January 2020.
- Attended the Beltwide Cotton Conferences in Austin, TX. January, 2020.
- Attended the Georgia Cotton Conferences and Cotton Production Workshop. Tifton, GA, January 29, 2020.
- Attended the Georgia Cotton Conferences and Cotton Production Workshop. Tifton, GA, January 30, 2019.
- Attended the ASA, CSSA annual meeting in San Antonio, TX, November 8-11, 2019.
- Attended APRES Annual meeting in Auburn, AL, July 7-10, 2019.
- Attended the ASA, CSSA annual meeting in Baltimore, MD November 4-7, 2018.
- Attended APRES Annual meeting in Williamsburg, VA, July 10-13, 2018.
- Attended the Beltwide Cotton Conferences in San Antonio, TX, January 3-5, 2018.
- Attended the Georgia Cotton Conferences and Cotton Production Workshop. Tifton, GA, January 31, 2018.
- Attended the 2017 UGA Cotton and Peanut Research Field Day. University of Georgia, Tifton, GA, September 6, 2017.
- Attended the Georgia Cotton Commission Research Advisory Field Day. University of Georgia, Tifton, GA, June 23, 2017.
- Attended Summer training at Moscow State University of Environmental Sciences, Moscow, Russia. June 2010- July 2010.
- Attended training on Food and Processing Engineering from Verka Milk Plant, Punjab, India. August, 2010- September 2010.