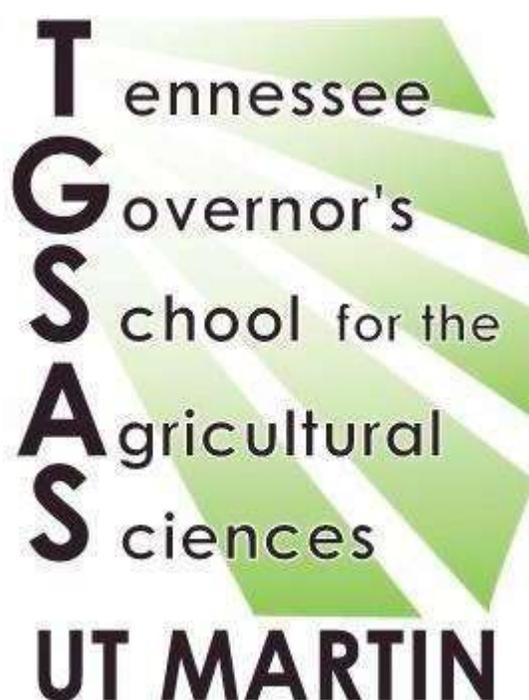


**Tennessee Governor's School
for the Agricultural Sciences**

2021 Annual Report



Class of 2021

Dr. Joey E. Mehlhorn, Director

The Tennessee Governor's School for the Agricultural Sciences is funded by:

**Tennessee Department of Education
Division of Special Programs
and
Tennessee Department of Agriculture
Ag Tag Program**

Presented by:

**The University of Tennessee at Martin
Department of Agriculture, Geosciences, and Natural Resources**

Tennessee Governor’s School for the Agricultural Sciences

Annual Report 2021

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Tennessee Governor's School for the Agricultural Sciences
The University of Tennessee at Martin
Program Summary and Evaluation for 2021

TGSAS 2021 PROGRAM AND EVALUATION

1. Administration and Admissions:

Administrative staffing included:

- **Dr. Joey E. Mehlhorn, Professor of Agribusiness, Parker Chair of Excellence and TGSAS Director**
- **Dr. Philip Smartt, Professor of Park and Recreation Administration, Assistant Director and Coordinator of Technology**
- **Dr. Jason Roberts, DVM, Professor of Animal Science and Staff Veterinarian, Academic Coordinator**
- **Ms. BeLynda Jones, Tennessee Governor's School for the Agricultural Sciences, Administrative Assistant**
- **Ms. Carrie Arant, Department of Agriculture, Geosciences, and Natural Resources, Budget Manager**

The credentials of each potential scholar (**83 applicants**) were evaluated by a selection committee, who scored each applicant's file (Appendix A), and reported these scores to the TGSAS Director. Scores were then tabulated for each applicant and the top 36 were extended letters of invitation. All invited scholars accepted. (Appendix B). Alternates were sent a letter notifying them of their alternate status. (Appendix C) They were placed on an alternate list in order of their scores. Letters of notification were sent to all applicants on the same date. A few days before classes began, we had 1 scholar to withdraw for personal reasons prior to the start of TGSAS. The 2021 TGSAS class began with 35 scholars (Appendix D). All 35 scholars successfully completed TGSAS.

The TGSAS selection committee included:

- **Dr. Joey Mehlhorn, TGSAS Director**
- **Dr. Jason Roberts, DVM, Academic Coordinator**
- **Dr. Philip Smartt, TGSAS Assistant Director and Coordinator of Technology**
- **Ms. BeLynda Jones, TGSAS Administrative Assistant**
- **Ms. Kristy Chastine, Tennessee Farm Bureau Federation**
- **Ms. Colleen Coury, Tennessee Department of Agriculture**
- **Ms. Carol Reed, Tennessee Corn Growers Association**

Student counselors were identified, and six were selected by the TGSAS administrative staff. All were assigned to daily counseling duties. Duties included assisting faculty and staff with group study projects, classroom help sessions, and dormitory supervision. They assisted scholars who needed help with a class or had questions. One counselor left the program for personal reasons in week two of the program. Duties were reassigned among the remaining counselors with minimal disruptions.

The 2021 TGSAS counselors included:

- **James Hale, Senior, Precision Agriculture Major, (TGSAS Class of 2018)**
- **Andrew Elrod, Junior, Agriculture Education Major**
- **Kelsea Koonce, Senior, Ag Business Communications Major (TGSAS Class of 2018)**
- **Mickela Mooney, Sophomore, Agriculture Education Major (TGSAS Class of 2019)**
- **Taylor Scott, Senior Ag Business Major**



The TGSAS Academic Advising Committee met during the fall semester of 2020 to discuss and develop the 2021 TGSAS curriculum. The consensus of the committee was to offer a range of courses and Group Study Research Projects (GSP) dealing with the agricultural sciences. Due to the high number of students consistently choosing the Veterinary Science GSP, two sessions were offered in that area along with a session in Precision Agriculture, which incorporates agriculture engineering and plant science. The program was made available in person or virtual format. We had three students who chose to complete TGSAS in a virtual format were given access to materials from both GSP experiences (Precision Agriculture and Veterinary Science). The virtual and on campus TGSAS scholars had access to a variety of GSP videos and trainings were made available for all TGSAS scholars to participate. We felt this was positive in that all scholars received a broader experience. Two college classes (Agricultural Business and Natural Resources Management) were included in the 2021 curriculum. The TGSAS Academic Advisory Council members included:

- **Dr. Joey Mehlhorn, TGSAS Director, Parker Chair of Excellence and Professor of Agricultural Economics**
- **Dr. Sandy Mehlhorn, Professor of Agricultural Engineering**
- **Dr. Jason Roberts, Professor of Animal Science**
- **Dr. Phillip Smartt, Professor of Parks and Recreation**

2. Faculty and course offerings:

During the fall 2020 semester, TGSAS Group Study Projects, seminars and college credit courses were selected as course offerings for 2021. The TGSAS faculty and staff biographies are included in Appendix H:

- **Dr. Jason Roberts – University of Tennessee at Martin**
- **Dr. Philip Smartt – University of Tennessee at Martin**
- **Dr. Sandy Mehlhorn – University of Tennessee at Martin**
- **Dr. Joey Mehlhorn – University of Tennessee at Martin**
- **Dr. Barbara Darroch – University of Tennessee at Martin**
- **Dr. John Cole - University of Tennessee at Martin**
- **Dr. Bethany Wolters – University of Tennessee at Martin**
- **Ms. Tara Woods - University of Tennessee at Martin**
- **Ms. Amanda Waldon, LVT, MS - University of Tennessee at Martin**
- **Mr. Zach Morphis, LVT – University of Tennessee at Martin**
- **Mrs. Kelly Garner, LVT – University of Tennessee at Martin**
- **Mr. Matt Chesnut, LVT – University of Tennessee at Martin**

Faculty and Staff



Mr. Zack Morphis



Mr. Matt Chesnut



Dr. Barb Darroch



Dr. Sandy Mehlhorn



Dr. John Cole



Dr. Bethany Wolters



Mrs. Tara Woods



Mrs. Kelly Garner



Mrs. Carrie Arant



Mrs. Amanda Waldon



Dr. Jason Roberts



Dr. Joey Mehlhorn



Mrs. BeLynda Jones



Dr. Philip Smartt



The faculty offered a combined Group Study Project sections that incorporated veterinary science, precision agriculture, engineering, plant and soil science. (Appendix G), and three College courses (Appendix F) on agricultural science topics. Courses were taught through the entire four weeks. Faculty presentation methods included lecture, discussion, virtual field trips, and virtual laboratory experiences.

3. Academic Component

Each student enrolled in TGSAS received three hours of college credit upon successful completion of the course requirements. Students enrolled in dual credit courses during TGSAS and could choose from two courses. The course classes met on Monday through Friday from 1:00 – 4:30 pm. The Group Study Projects (GSP) were also offered Veterinary Science or Precision Agriculture. GSP's met Monday through Thursday from 8:30 – 11:30 am. Scholars attended virtual field trips and special programs on selected days, evenings and weekends. These additional learning opportunities complemented the college credit courses and the GSP's.

College Credit Courses: (A description of each course appears in Appendix F.)

AGEC 110 – Introduction to Agricultural Business
Faculty: Dr. Joey Mehlhorn, Professor of Agricultural Economics

NRM 100 – Introduction to Natural Resource Management
Faculty: Dr. Philip Smartt, Professor of Parks and Recreation

Group Study Projects: (A description of each GSP is included in Appendix G.)

Precision Agriculture
Faculty: Dr. Sandy Mehlhorn, Dr. Barbara Darroch and Dr. John Cole

Veterinary Science
Faculty: Dr. Jason Roberts, Ms. Tara Woods, and Ms. Amanda Waldon

Plenary Sessions: (Appendix I)

These sessions offered the scholars a broad range of agricultural sciences related areas and focused on topics not covered by academic courses or Group Study Projects. Plenary sessions were taught covering additional material for all scholars including topics ranging from Poultry Science, GIS/GPS, careers in agriculture, lifestyle management, veterinary technology, and agricultural/ environmental concerns.

TGSAS Web site: The TGSAS web site (<http://www.utm.edu/departments/caas/tgsas/>) was available to scholars, their families and high school teachers prior to and during TGSAS. The website will be maintained as a source of information for the prospective 2021 class.

4. The student experience at TGSAS featured a variety of innovative academic activities off campus which included:

Field trip Experiences:

Tennessee Farm Bureau Federation (Agribusiness), Tennessee Department of Agriculture (Agricultural Production Marketing and Promotion), Tyson Foods (Agribusiness and Environmental Management), Reelfoot Lake (Wildlife Habitat), Yeargin Farms (Production Agriculture, Animal and Plant Science), Milan Experiment Station (Agriculture Production and Research)

Yeargin Farms Tour, Greenfield, TN: Yeargin Farms is an integrated 4,000 acre farm which includes rowcrop and livestock operations. Scholars had the opportunity to hear about risk management and overall farm management required for successful operation.

Agricenter International, Memphis, TN: This facility is a leader in agricultural field crop research, where students experienced an outstanding learning opportunity. Through its agribusiness, University systems, and government and non-government organizations, the Agricenter provides a professional forum for the unbiased development, evaluation, demonstration, education, and marketing of the latest and most advanced agricultural technologies and products. These advances include biotech seeds, seed treatment chemistries, feasibility studies of new crop uses, farm equipment improvements, and methods for land, soil, and water conservation.

Wildwood Farms: Wildwood farms is a large horse farm in Germantown Tennessee that houses approximately 25 horses on 200 plus acres of land. The farm is owned and operated by Melanie Smith Taylor a 1984 Olympic Gold Medalist in equestrian. The farm also provided opportunities in plant and soil science and environmental management.

Pictsweet: Pictsweet corporate farms is one of the largest producers of fresh and frozen vegetable in the U.S. Students were able to tour the production farm located in Bells Tennessee. The experience showed commercial agriculture and processing on a large scale.

5. Agriculturally Focused Housing Experience: Scholars lived in Cooper Hall on the campus of the University of Tennessee at Martin. Cooper Hall is a Living Learning Community (LLC) dorm on campus that allowed students to have ample shared study space and living suites.

6. Agriculture Marketing and Promotion Activities: The Tennessee Governor's School for the Agricultural Sciences strives to promote a broader understanding of agriculture and its relationship with other industries in the state, region and world. Emphasis is placed on the promotion of Tennessee agriculture products and exports. The Tennessee Department of Agriculture's AG Tag program is an essential partner to the TGSAS educational experience. Several marketing and promotion activities were incorporated into the TGSAS experience to emphasize the importance of Tennessee agriculture products and businesses to the overall U.S. and global economy. Scholars were able to make connections between initial research and the resulting end product along with the impact on producers and society. Specific activities with Tennessee agribusinesses included videos to the following:

- Tennessee Farm Bureau, Columbia, TN: Scholars learned about the role of TFBF plays in promoting Tennessee agriculture producers and agribusinesses.

- Tennessee Department of Agriculture, Nashville, TN: A tour of the offices, museum, and grounds of the TDA and an overview of the services provided to the agricultural industry in gave students a broader understanding of the importance of agriculture in Tennessee, the United States and globally.
- Tyson Foods, Union City, TN: Tyson Food is one of the largest suppliers of poultry to the food market in the United States.

7. Optional Online Format: The TGSAS leadership team starting meeting early in the spring 2020 semester to start planning for an online environment. We developed a virtual option for any TGSAS scholar who chose the format. We had 3 students select the virtual format. While some traditional experiences were missed (such as in person field trips, living in the dorms and meeting new people, and growing as an individual by being away from home for a month) the students who attended in the virtual format were able to experience materials from both GSP experiences as well as their selected credit course. The TGSAS counselors were instrumental in helping faculty develop quality digital learning objects such as videos and student testimonials. All materials were available in the Canvas LMS.

8. TGSAS Service Project: A tradition of TGSAS has always been to engage students in some type of service project. This year the TGSAS scholars worked to plant raised vegetable beds at Cooper Hall to help provide fresh vegetables for students. The project was very successful and the scholars felt a sense of pride for their work. The scholars also participated in moving rocks for a future waterfall project in Cooper Hall that will compliment the raised bed project.





9. Conclusion: The TGSAS program continues to be very successful as in the past. The class of 2021 also had a unique challenge set before them, and they exceeded expectations. The TGSAS administrative staff and faculty will continue to learn from the evaluations of the 2021 program. TGSAS offered scholars academic and experiential learning opportunities to expand their knowledge of the agricultural sciences. They left with a new appreciation of the contributions that agriculture makes to Tennessee and the world. We look forward to building on the past successes of the Tennessee Governor’s School for the Agricultural Sciences and continuing to provide a premier experience for the exceptional high school students chosen to participate. We experienced an automobile accident with two of our TGSAS vans while on a field trip in Memphis. The UTM vans were rear-ended by a distracted driver. No students or staff were injured in the accident. We continued on with trip.

10. Acceptable Performance Metrics Summary: The TGSAS students were surveyed at the conclusion of their college course to determine the effectiveness of the instruction and experience. Students were divided between the NRM 100 Introduction to Natural Resource Management, AGEC 110 Introduction to Agribusiness, and ANSC 230 Exotic and Companion Animals. A breakdown of the student’s responses from the courses follows.

- **100%** of students stated the college course increased their critical thinking skills.
- **100%** stated that TGSAS enhanced their communication skills.
- **88%** stated that TGSAS helped improve their study skills.
- **100%** of TGSAS scholars stated that the credit courses were worth the effort.
- **92%** stated that the college courses were different than high school courses.
- All Group Study Faculty Leaders received **4.92/5.00** rating for GSP instruction.
- AGEC 110 Introduction to Agribusiness and NRM 100 Introduction to Natural Resource Management instructors received **4.96/5.00** rating for instruction.
- AGEC 110 Introduction to Agribusiness and NRM 100 Introduction to Natural Resource Management courses were rated at **4.88/5.00**.
- **87%** responded directly that they would recommend TGSAS to a fellow student. (No scholar selected that they would not recommend TGSAS to a fellow student. They left the question unanswered).
- **100%** Stated that they felt TGSAS will help them achieve their academic and career goals.

- **100%** stated that a career in agriculture would be personally rewarding.
- **100%** of the scholars stated that agriculture was a science and that biology and chemistry are an important part of a career in agriculture.
- **100%** felt that agriculture was a technologically advanced industry.
- **100%** of students who started TGSAS completed the program successfully.

TGSAS scholars were pre and post tested with various agriculture knowledge questions. Results for selected questions are given below.

Question	Pre Test %	Post Test %
Agriculture is the world's largest industry	94	100
Climate change will impact agriculture production in the future	88	93
Holstein cattle are the most popular breed of dairy cattle in the U.S.	64	90
Poultry production in the U.S. relies heavily on technology.	55	87
GPS stands for global positioning satellite	70	87
Agriculture is the largest consumer of water in the U.S.	77	87
The average size farm in the U.S. is declining.	38	58
Do you consider agriculture producers (farmers) as small business owners?	88	93

In addition, we asked students to comment openly on their TGSAS experiences. Below are unedited student comments.

- I really enjoyed all of the field trips we went on, especially to Reelfoot lake and Memphis. I did not enjoy the Tyson facility, but I think that is just based on personal preference rather than learning experience. I really learned a lot from the Tyson facility, but I did not enjoy it very well...
- The trips I took were a really cool experience. I never would have thought I would be going to the Tyson processing plant. I was able to see how chicken nuggets were made and then processed to go to McDonalds.
- I enjoyed all the trips we took this year. It was great to see all the various farms and different agriculture aspects.
- I think the trips helped all of us to learn about agriculture as a whole and about the importance of this industry. This program has definitely helped me to confirm my choice of future career.
- Yes. I was wanting to be a Veterinarian, and now that I have a clearer idea of what is needed for that profession, I'm wondering if this career path is really for me. I have a clearer view of my options now.
- It has really opened my eyes from the views of livestock and row crop. Now I know about all the technology and wide variety of jobs that are associated with agriculture

- Coming into TGSAS, I already had a very positive view of agriculture but after my experience here at UTM my appreciation for this industry has only grown. TGSAS gave us so many experiences that are once in a lifetime so that we could all prepare for our roles as the future of agriculture.
- I know have a much better understanding. I don't have a agricultural background at all, so this has really opened my eyes. I now understand practices that I questioned and I now know that agriculture is much more necessary and expansive than I had ever thought.
- I participated in the Veterinary Science GSP and I highly enjoyed working with my mentors and with the animals! I really enjoyed working with the animals, and the activities really helped me solidify my decision on becoming a Veterinarian. I do feel I would have been helpful to work our way up to the large animals however. I know some of the students in my GSP felt that the cows and horses were too large, so I feel that working with the sheep and goats before the cows and horses would've helped make them more comfortable. Overall, I really enjoyed this GSP and I learned a lot from this experience! The activities were both enjoyable and educational.
- Thank you so much for choosing me for this program! I learned so much and I hope many others will as well! (As a side note, it would be nice not to eat so much chicken after the Tyson tour :). Thank you so much for this opportunity and I really appreciate all those who taught me and helped me through this program!
- I was in Precision Ag. I loved the diversity in what we did because it teaches me a lot and helps me to learn the things that I am really interested in, and what I am not.
- I have loved every single moment and this month is a time I will never forget. I would like to thank every single person for their perseverance and putting this great program on.
- I participated in the veterinary science GSP. I greatly enjoyed this experience and learned that I work verywell with large animals, especially equine. This program has helped me to not only confirm my college decision but also helped me decide that I definately want to pursue a career in large animal/equine medicine.
- I would just like to say thank you to every one who helped make TGSAS possible. Just being here has helped me learn a lot. I was able to do once in a lifetime things here, such as palpating a cow. TGSAS has allowed me to do many things, that I thought I would never do. This month at TGSAS has definitely been one to remember.
- This is has been a great experience and I wouldn't trade for the world. I believe every student that has the opportunity to attend this should.
- Wish it was possible to take both GSPs and Classes. That's the one thing I don't like about ag. I have an interest in all of it and want to do it all
- Thank you all for taking time out of your summer to allow us to be here. I throughly believe you did the best you could to make this the best month possible. I will forever remember this summer and the memories and friends I have made. I can't wait to go back home and engage in more agriculture activities.

- I really enjoyed this class as it was not the most entertaining, but Dr. Melhorn was able to make it enjoyable. He interacted with us well and was able to connect to where I could understand each topic very well.
- NRM 100 has taught me so much in one month that I knew nothing about. I really enjoyed attending Dr. Smartt's class. strengths were that it helped me with note taking and studying.
- I have absolutely loved this month. TGSAS brought me some of the best friends I could have ever asked for and opened up a lot of doors for me within agriculture.
- I would recommend TGSAS because it is a great learning experience for agriculture. It shows the in and outs of agriculture and how we get the necessities for everyday life. Not only that, but you make new friends for life. I have made some of my greatest friends here and have met some of the best friends and people because of this. I wouldn't trade this for the world.
- Strength is getting to learn so much about something I hadn't really been exposed to yet. I love how the course uses examples that are agriculture related because I know a lot of school don't include that even if it is an ag major.
- I would definitely recommend TGSAS to others. Over this month I've had a great experience just being here and being able to participate in everything. I would like others to be able to know all about TGSAS, and be able to participate in the future.
- I really learned a lot when participating in NRM. The class was difficult but, because I have taken AP classes in High School, the workload was manageable and I believe I passed that class with an A! I liked how we didn't have a ton of assignments, which gave me more time to study for my tests and allowed me to get better grades on them! Dr. Smartt was an amazing teacher, and I always enjoyed his lectures and fun facts!
- Yes, I would definitely recommend. This was a great experience and it put a lot on once in a life time opportunity for me.
- I was in AGECE 110. Dr. Melhorn was a great professor. He helped me out any time I had a question, or If I was confused on anything. My strengths in his class would be the current issues paper. I really enjoyed reading about many issues that are happening in agriculture today.
- I learned the most in my GSP. It really sparked my interest and I enjoyed being able to see and learn what all the vets do. Overall I had a great experience in my GSP.
- I was enrolled in Dr Mehlhorn's AGECE 110 class. This class helped me to learn a lot about supply and demands within the agricultural markets. After taking the class, I now have a better understanding of how prices and sales of agricultural commodities are affected in the world.
- I participated in the Vet Science GSP. Some strengths that I found are that there are a variety of activities that we are exposed to in order to show us a large spectrum of veterinary medicine. For those who have not had exposure with large animals, they were able to experience a lot of new things

and see if they actually enjoyed that area. I also appreciate that Dr. Roberts was very upfront about what I needed to get into vet school, as the guidance is needed. I also liked how we were showed a lot of different technologies and tests.

Appendix A

SUMMARY OF APPLICANT EVALUATION

Please score each applicant for each area on the following scale:

5 = Most outstanding, 4 = Outstanding, 3 = Average

2 = Marginal, 1 = Unacceptable

Total of 20 points possible for each applicant.

No.	Applicant	Academic Achievement	Agricultural Sciences Experience	Essays and Writing Skills	School and Community Involvement	Total
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Appendix B
Letter of Invitation

March 1, 2021

«First» «Last»
«Address»
«City», «St» «Zip»

Dear «First»,

Congratulations!!! You have been selected for the 2021 Tennessee Governor's School for the Agricultural Sciences (TGSAS) at the University of Tennessee at Martin. This experience will be from May 29-June 25th. We are currently working to develop the curriculum and make final plans for a great experience. We are still planning for an on-campus experience, but we are aware that the program could be moved to a virtual format. We will keep you updated as we have more specific details.

Enclosed you will find a form to accept or decline your position with the Class of 2021. Please complete the form and you can return it in the enclosed envelope or scan and return by email to bjone124@utm.edu . The form must be post-marked by March 12, 2021. Once we receive your acceptance form, we will mail a packet with detailed information on TGSAS. We look forward to hearing from you and having you on campus this summer. If you have responded to the email request you do not have to reply again.

Sincerely,

Joseph Mehlhorn
Director, Tennessee Governor School for Agricultural Sciences
University of Tennessee at Martin

enclosure

**Appendix C
Alternate Letter**

March 1, 2021

«First_Name» «Last_Name»
«Address»
«City», «ST» «Zip»

Dear «First_Name»,

Thank you for considering, and applying for, the 2021 Tennessee Governor's School for the Agricultural Sciences (TGSAS). The Tennessee Department of Education sets the standards for admission to the various Governor's Schools. There were 83 applicants for the 2021 TGSAS class and those applications were very competitive. The committee has completed their selection process, and you have been placed on the Alternate list for the 2021 TGSAS class. If we have students on the accepted list decline, we will work through the alternate list of applicants to complete the class roster.

Again, thank you for submitting your application for this year's Tennessee Governor's School for the Agricultural Sciences. We wish you the very best of luck in the future.

Sincerely,

Joey E. Mehlhorn, PhD
Director, Tennessee Governor's School for the Agricultural Sciences

**Appendix D
2021 SCHOLARS**

Class of 2021 TGSAS					
	First	Last	County	High School	City
1	Mason	Baker	Rutherford	Siegel HS	Murfreesboro
2	Hannah	Billings	Lauderdale	Halls HS	Gates
3	Madison	Cline	Jefferson	Jefferson Co HS	Strawberry Plains
4	Noah	Cody	Hardeman	Bolivar Central HS	Bolivar
5	Faith	Cook	Wilson	Wilson Co HS	LeBanon
6	Keely	Frazier	Cumberland	Cumberland Co HS	Crossville
7	Rachel (Lexy)	Halbert	Wilson	Seymour HS	LeBanon
8	Dallas	Hall	Weakley	Peabody HS	Martin
9	Abigail "Abby"	Hayes	Sevier	Northview Sr Academy	Kodak
10	Grace	Hilton	Madison	North Side HS	Jackson
11	Annika	Jolley	Weakley	Dresden HS	Dresden
12	Tyler	Kelley	Chester	Scotts Hill HS	Enville
13	Claire	Koch	Sumner	Merrol Hyde Magnet School	Hendersonville
14	Maddox	Marlin	Sumner	Station Camp HS	Henderson
15	Alexander	Marquez	Wilson	Green Hill HS	Old Hickory
16	Kathryn	McCall	Montgomery	Montgomery Co HS	Cunningham
17	Morgann	McCune	Rutherford	Stewarts Creek HS	Nolensville
18	Elizabeth	McQueen	Rutherford	Siegel HS	Murfreesboro
19	Annelise	McQuillan	Rutherford	Seigel HS	Murfreesboro
20	Marley	Poole	Rutherford	Oakland HS	Murfreesboro
21	Morgan	Riley	Williason	Fred J Page HS	College Grove
22	Jessica	Roberts	McMinn	Concord Christian School	Athens
23	Jacob	Rose	Blount	Heritage HS	Maryville
24	Hayden	Sampson	Greene	Chucky-Doak HS	Afton
25	Emma	Squires	Shelby	White Station HS	Cordova
26	Dylan	Stewart	Dyer	Dyersburg HS	Dyersburg
27	Mackenzie	Stockton	White	White Co HS	Sparta
28	Benjamin	Stokes	Carroll	Clarksburg HS	Huntingdon
29	Hannah	Tienter	Wilson	Watertown HS	LeBanon
30	Sydney	Trammell	Sumner	Hendersonville HS	Hendersonville
31	Jarrett	Tubbs	Henderson	Scotts Hills HS	Darden
32	Madilyn	Westergard	Bedford	Cascade HS	Beechgrove
33	Hannah	Westergard	Rutherford	Stewarts Creek HS	Murfreesboro
34	James	White	Lincoln	Fayetteville HS	Flintville
35	Emily	Whitley	Shleby	Briarcrest Christian HS	Eads

Appendix E
2021 APPLICANTS (Not Accepted)

	Last	First	County	School
1	Ambelang	Jenna	Humphreys	Waverly Central
2	Anderson	Amelia	Obion	Obion Central HS
3	Barnett	Abigail	Sumner	Portland HS
4	Beattie	Alice	Williamson	Nolansville HS
5	Bell	Shelby	Hamilton	Ivy Academy
6	Bhattacharya	Hannah	Williamson	Ravenwood HS
7	Bradley	Miriam	Shelby	Barlett HS
8	Click	Alyssa	Gibson	Bradford HS
9	Cook	Scarlett	Dickson	Dickson Co HS
10	Finchum	Lindsey	Sevier	Seymour
11	Ganesh	Shruti	Shelby	Collierville HS
12	Gapen	Samantha	Gibson	Bradford HS
13	Gibbons	Allison	Rutherford	Blackman HS
14	Glover	Olivia	Hamilton	Signal Mountain HS
15	Goff	Chloe	Gibson	Bradford HS
16	Hutchinson	Rhiannon	Rutherford	Eagleville School
17	Hutchison	Kylie	Obion	Obion Central HS
18	Jindal	Aditi	Williamson	Ravenwood HS
19	Kennedy	Leah	Williamson	Fairview HS
20	King	Layla	Lauderdale	Ripley HS
21	Kinson	Valerie	Knox	Bearden HS
22	Lassiter	Laura	Shelby	Collierville HS
23	Latimer	William "Tine"	Hamiton	Baylor School
24	Lawrence	Geoffrey	Davidson	John Overton HS
25	Laws	David	Unicoi	Unicoi Co HS
26	Lovisaro	Bianaca	Williamson	Fairview HS
27	Maple	Naylah	Davidson	Nashville School of Arts
28	Maupin	Madison	Rutherford	Eagleville School
29	McMasters	DebRhe'a	Davidson	McGavock HS
30	Natra	Sharvika	Shelby	Collierville HS
31	Pertuset	Madison	Wilson	Green Hill HS
32	Porter	Kara	Blount	Maryville HS
33	Prater	Madisen	Claiborne	Cumberland Gap HS
34	Pruett	Carley	Gibson	Bradford HS
35	Rhea	Keyle	Warren	Warren Co HS
36	Robinson	Haylee	Maury	Columbia Central HS
37	Rohrer	Waylon	Hamblen	Morris-Hamblen East
38	Rose	Riley	Rutherford	Oakland HS

39	Singh	Sohini	Hamilton	Chattanooga School for the Arts & Sciences
40	Srinivasan	Ashwin	Shelby	Collierville HS
41	Stewart	Dylan	Dyer	Dyersburg HS
42	Stone	Riley	Greene	North Greene HS
43	Techasiriwan	Elle	Hamilton	HomeLife Academy
44	Templeton	Alivia	Hamilton	Boyd Buchanan
45	Ward	Chloe	Sumner	Hendersonville HS
46	Watson	Hunter	Madison	Jackson Christian School
47	Pyburn	Jack	Wilson	Mt Juliet Christian Acad
48	Whicker	Jessica	Wilson	Mt Juliet Christian Acad

**Appendix F
Course Syllabi**

**AGEC 110 - INTRODUCTION TO AGRICULTURAL BUSINESS
TGSAS SUMMER 2021
University of Tennessee Martin**

Instructor: Joey Mehlhorn, Ph.D.
Office: Brehm Hall 254
Phone: 731-881-7275
Email: mehlhorn@utm.edu
Office Hours: M-F 9:00 – 11:00, or by appointment

Course Description:

AGEC 110 Introduction to Agricultural Business (3) An introduction to the field of agricultural business and some of the basic tools and concepts of decision-making. Concepts are illustrated in terms of selected current social and economic issues in the industry of production agriculture, agricultural business, and the computer application of those concepts.

Course Objectives:

To introduce students to the fundamental economic principles and tools used in the modern agribusiness complex. Students will be exposed to:

- Supply & Demand factors
- Competition among agribusiness firms within the U.S. and abroad
- Microeconomic & Macroeconomic theory related to the firm and the agribusiness complex
- Rural diversity and development issues
- International development issues
- Agricultural society and its role and relationship to the overall economic system
- Consumer income issues
- Producer decision making process

Course Grade Requirements:

Activity	% of Course Grade
EXAMS (4 hourly exams)	75%
Assignments & Quizzes*	25%

Grading:

A	90% or above
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	Below 60%

Course Policies and Procedures

1. **Students are encouraged to attend class regularly.** Attendance will be taken, and many assignments will be completed during the class period.
2. **Students are expected to complete all reading assignments prior to the class period.**

3. **All homework is expected at the beginning of the class period on the date due.** The homework grade will be reduced by 50% if not handed in by the due date. If homework is not received by the beginning of the next scheduled class period, the grade will be zero.
4. **Cheating will not be tolerated!!!!** This includes acquiring answers or providing answers during examinations or assigned work. Presenting work, ideas of another without giving credit and proper documentation.
5. **If you have a disability that may require assistance or accommodation, or make you have questions related to any accommodations for testing, note takers, readers, etc., please speak with me as soon as possible.**
6. No make-up exams will be given in this course. If you have to miss an exam you must contact me **BEFORE** the exam is given to make arrangements. If an exam is excused, the remaining exams will be averaged to replace the missing exam grade.
7. **Turn off all phones, pagers, PDA's etc. when you enter the classroom. If it is necessary for you to leave such devices on during class, please see me at the beginning of class.**

Academic Integrity: Students are expected to abide by statements in the *UTM Course Catalog, Faculty Handbook, and Student Handbook* regarding academic integrity (http://www.utm.edu/departments/conduct/new_academic_integrity.php). **Plagiarism occurs when one student submits work from another student as their own and is grounds for failure of that assignment, exam, and/or course. While I have no issue with students comparing answers before submission, I will not accept one student copying answers from a second student. Cheating on an exam is grounds for failure of the exam and course.** Plagiarism also occurs when proper citations are not provided for external references.

Students with Disabilities: Any student eligible for and requesting academic accommodation due to a disability is requested to provide a letter of accommodation from P.A.C.E. or the Student Success Center within the first two weeks of the semester. The Student Success Center may be found in 203 Clement Hall, 731.881.7605.

Student Harassment/Discrimination: Any student who feels that they are being harassed or discriminated against in this class should follow the UT Martin harassment policy guidelines: <http://www.utm.edu/departments/equalopp/harassment.php>.

Cell Phones and Other Electronic Devices: Cell phones are **not** allowed to be used during a quiz or exam. Use of a cellphone is a form of cheating which results in a zero on the quiz/exam and failure of the course.

Tentative Course Outline and Class Schedule

- I. Introduction to the Farm and Food System
 - a. Important economic and agribusiness terms
- II. Agribusiness in the Modern Era
 - a. Value Judgments
 - b. Sectors of Agribusiness
 - c. Contemporary Issues
- III. Consumer Behavior and Demand
 - a. Overview of the Basic Framework

- b. Factors that Shift Demand Curves
 - c. Utility
 - d. Indifference Curves
 - e. Budget Constraints
 - f. Effect of Price Changes on Demand
- IV. Costs and Production
 - a. Factors of Production
 - b. Stages of Production
 - c. Marginal Productivity Analysis
 - d. Cost Calculations
 - e. Profit Calculations
- V. Input and Product Substitution
 - a. Isoquants
 - b. Input Substitutability
 - c. Least Cost Combinations
 - d. Effect of Price Changes on Supply
 - e. Factors that Shift Supply Curves
 - f. Product Substitutability
- VI. Market Structure and Competition
 - a. Market Structures
 - b. Sources of Market Failure
 - c. Mergers
 - d. U.S. Regulations on Pricing and Agriculture
- VII. Money and Macroeconomics
 - a. Functions of Money
 - b. Inflation
 - c. Monetary and Fiscal Policy
 - i. Goals of each
 - d. Unemployment
- VIII. Agricultural Finance
 - a. U.S. Agricultural Balance Sheet
 - b. Time Value of Money
 - i. Present Value
 - ii. Future Value
 - c. Loan Repayment Methods
 - i. Declining/Remaining Balance
 - ii. Add-On
 - iii. Discount

NRM 100: Introduction to Natural Resources Management
Tennessee Governor's School for the Agricultural Sciences (TGSAS)
University of Tennessee, Martin

Basic Information:

Meeting Time and Place: Brehm Hall 202

Course Credit Hours: 3

Textbooks and Other Required Materials: Reading and videos will be available in Canvas and assigned as needed.

Faculty Contact Information

Instructor: Dr. Philip Smartt

Office: 267 Brehm Hall

Telephone: 731-881-7954

Email: psmartt@utm.edu

Course Information:

Course Description/Information:

Survey of global, national, and regional natural resources; a history of resource use at global, national, and regional levels; description of global, national, and regional management of forests, fish and wildlife, soils, water, metal, mineral, energy, and recreational resources; review of international, national, and regional management entities.

Course Resources:

UTM Blackboard: Class material and grades will be posted on Canvas. Please check it frequently. If you desire an e-mail address other than your UTM address for Canvas notifications, you will need to make the change in Canvas as directed. E-mail is also the official form of communications for the university. You are responsible to check your e-mail.

Student Learning Outcomes/Objectives:

Students will have an understanding of the following concepts:

- Definitions and examples of basic natural resources.
- Global distributions and use patterns of natural resources.
- Differences among preservationist, conservationist, and exploitationist management philosophies.
- Distinction of renewable, non-renewable, and non-exhaustible natural resources.
- Meaning and importance of land stewardship, multiple-use management, and sustainable use.
- Historical foundations of natural resource use, preservation, and abuse; keystone legislation, and influential individuals.
- Current natural resource management strategies.
- Roles of public and private entities in natural resources management.
- Distinctions among international, national, and regional management issues and authority.
- Current issues regarding resource use and management.
- Future changes and trends in natural resource management and philosophy.
- Employment opportunities in the field of natural resource management.

Course Communications:

I am available to answer any of your questions any time I am in my office. My office hours are posted on my office door and other times are available by appointment. E-mail is the best way to contact me as I regularly check it.

Course Requirements/Expectations:

Course Requirements, Assessments, and Evaluations:

Professional Development: Part of the classroom experience is professional development. This means professional behavior in class. It means showing respect for yourself and others in the class. The expectation of professionalism is a reflection of demands that will be placed upon you by potential employers.

- Academic Integrity: Please refer to the section below on Academic Integrity. Violations will be dealt with at the discretion of the instructor.
- Eating/Tobacco Use: Eating or the use of tobacco products in class is not permitted.
- Class Participation: You have unique thoughts and experiences; please share those in class to the benefit of others.
- Apparel: Hats are not to be worn in the classroom.
- Attendance: Attendance and punctuality are expected for class. Students are responsible for all material administered during missed classes. Missed exams may be taken at a later date and time, to be decided by the instructor, only if the absence was for a school-related event or emergency for which the student provides documented proof. The style and format of make-up exams are at the prerogative of the instructor. The instructor **MUST** be contacted as soon as possible when you know a test will be missed.
- Cell Phones and Other Electronic Devices: Please turn off your cell phone in class. If your cell phone rings during class, you will be docked 2 points from your final grade. The same is true for texting. A cell phone may not be used during a test. Accessing your cell phone during a test will be treated as cheating.

Grades:

Regular Exams (4)	= 90 points
Final Exam	= 2 points
<u>Service Learning</u>	= 8 points
Total	=100 points

- 90-100 = A
- 80-89 = B
- 70-79 = C
- 60-69 = D
- <60 = F

There is no extra credit.

Group Study Projects (GSP) Syllabi 2021 Group Study Project Course Descriptions

Veterinary Science Group Study Project

Instructor: Dr. Jason Roberts

Office: Veterinary Diagnostics Laboratory

E-mail: jroberts@utm.edu

Contact Numbers: office-731.881.7952, cell-731.514.1475, home-731.364.6842

Veterinary Science GSP Course Description: The Veterinary Science GSP will present the students with the opportunity to observe and learn about the diversity of career opportunities in veterinary medicine, animal care of both farm and companion animals and perform a basic research project on companion animals from local humane shelters. The companion animal research project will involve obtaining diagnostic samples, performing treatments, analyzing diagnostic samples and comparing the results. The companion animals will then be returned to the humane shelters in better health and ready for adoption. The students will familiarize themselves with pre-diagnostic, diagnostic and therapeutic options available in veterinary medicine. The project will also include visits to humane shelters, veterinary clinics, swine farms, a dairy, an equine therapeutic riding center and the University teaching farm which is the home of cattle, sheep and horses. The objective of the veterinary science project is to allow students the opportunity to observe hands on care and treatment for a variety of species while also learning the health needs of the individual animals themselves. The students will also have the opportunity to observe necropsies in the West Tennessee Diagnostic Lab as cases are available. Topics on different careers in veterinary medicine and different usages of our animal friends will also be discussed. At the conclusion of the group study project, each student will leave with a greater understanding of and respect for the veterinary profession and the responsibility involved in caring for companion and farm animals.

Student Learning Outcomes:

- Describe appropriate safety measures in veterinary workplace
- Identify common careers in veterinary industry
- Demonstrate safe handling of small and large animals
- Identify basic anatomy of small and large animals

Precision Agriculture Group Study Project

Instructors: Dr. Sandy Mehlhorn, Dr. Barbara Darroch and Dr. John Cole

Faculty Contact Information:

Dr. Sandy Mehlhorn, 731-881-7253, smehlhorn@utm.edu

Mr. John Cole, 731-881-7264, jcole42@utm.edu

Dr. Barbara Darroch, 731-881-7279, bdarroch@utm.edu

Course Description/Information: Precision Agriculture is a widely used term in agriculture today but there are many misconceptions about what it actually entails. Scholars involved in the Precision Agriculture GSP will be involved in all aspects of precision agriculture in row crop production. From preparing the soil, to planting, harvesting, and uses of the final product, students will get a preview of everything involved in production agriculture. Scholars will also engage in a research activity in order to learn how to properly conduct and report research.

Precision Agriculture combines the GSP categories of Agricultural Engineering and Crop Production. Since they are both a part of the precision engineering curriculum. The class experienced the many areas in which diverse agricultural activities interact and complement each other. The course addressed preparing soil, weed identification, and harvesting in conjunction with the use, function and maintenance of farm equipment designed

for fertilizing, eradicating weeds and reaping the mature crops. The use of Global Positioning Systems on tractors was explained and the students had the opportunity for experiencing hands on use of a GPS on campus.

Student Learning Outcomes/Objectives:

- Students will be able to define various aspects of precision agriculture.
- Students will understand the general process of row crop production from soil preparation to harvest to final products.
- Students will demonstrate proper research methods.
- Students will demonstrate writing methods for a scientific research paper.

Appendix H

FACULTY AND STAFF BIOGRAPHIES

Administration

Dr. Joey Mehlhorn (Director) is currently the holder of the Gilbert Parker Chair of Excellence, coordinator of the Master of Science in Agriculture and Natural Resources program and a Professor of Agricultural Economics at the University of Tennessee at Martin. He has held previous faculty positions at Middle Tennessee State University and West Texas A&M University. Dr. Mehlhorn graduated with a Bachelor of Science degree in Agribusiness Economics from Tennessee Technological University in 1992. He graduated from Mississippi State University with a Master of Agribusiness Management degree in 1994 and received his Ph.D. in agricultural economics there in 1998. Dr. Mehlhorn's research interests include experiential learning in agribusiness and farm management issues.

Dr. Philip Smartt (Assistant Director) also serves as Technology Coordinator for Governor's School. (See faculty biography below.)

Dr. Jason Roberts (Academic Coordinator) is responsible for working with the faculty to develop the curriculum for classes, and GSP's. (See faculty biography below.)

Mrs. BeLynda Jones (Administrative Assistant) is the Administrative Assistant for TGSAS. During her 34-year career she has held administrative assistant positions with Reelfoot Regional Library, Bethel University and The University of Tennessee at Martin. Her priorities for TGSAS include efficient administrative operation and open communication with faculty, counselors, students, and parents/guardians.

Mrs. Carrie Arant (Budget Manager) served as Budget Manager for the program. She previously worked as an accountant for several diverse businesses in West Tennessee and now serves as Business Manager for the Department of Agriculture, Geosciences and Natural Resources. She holds a degree in Agricultural Business and an MBA from the University of Tennessee at Martin.

Faculty

Dr. Sandy Mehlhorn is a licensed engineer and Associate Professor in geomatics and surveying in the Department of Agriculture, Geosciences, and Natural Resources. Dr. Mehlhorn received her Ph.D. in civil engineering from the University of Memphis. She has teaching responsibilities for the surveying program. Her research interests include GIS projects, disaster recovery modeling and materials.

Dr. Jason Roberts joined the Department of Agriculture, Geosciences and Natural Resources at the University of Tennessee at Martin in April 2009. He is a graduate of UTM and the University of Tennessee School of Veterinary Medicine. Prior to joining the faculty at UTM he was a veterinary practitioner at Northwest Tennessee Veterinary Services in Dresden, TN for seven years. Dr. Roberts is an Associate Professor and serves as Academic Advisor for TGSAS.

Dr. Philip Smartt is a Professor of Park and Recreation Administration in the Department of Agriculture, Geosciences and Natural Resources at UTM. Dr. Smartt earned a Ph.D. in Forestry from Texas A and M University, a Master of Forestry in Forest Recreation from Stephen F. Austin State University, and a Bachelor of Science in Aerospace from Middle Tennessee State University. His scholarly interests include park resource management, resource interpretation, non-industrial private forest management, and technology development. Dr. Smartt teaches Natural Resources Management and serves as Assistant Director and Technology Coordinator for the Governor's School.

Dr. John Cole is an assistant professor in agricultural engineering technology and a registered engineer. His teaching and research interests include renewable energy, irrigation technology and mechanical engineering principles. He has worked with the development of several startup companies in the agricultural field.

Dr. Barbara Darroch received her PhD in Plant Breeding from the University of Saskatchewan. She served as the advisor and an instructor for the Master of Science in Agriculture and Natural Resources Management program for several years. Dr. Darroch is currently an assistant professor of Plant Science in the Department of Agriculture, Geosciences, and Natural Resources.

Mrs. Amanda Waldon graduated from Murray State with her B.S. degree in Agriculture and received her M.S. degree in Education from UTM. After passing her VTNE she practiced at Food and Riddle Equine Hospital for 6 years before moving to West TN. There she worked at Jackson Animal Clinic. Now at UTM her special interest includes small animal nutrition, animal behavior, and client education. She runs the two Instagram accounts for the department follow them at utmvettech and utmagn for a look at what classes and labs at UTM are like.

Mrs. Kelly Garner is a licensed Veterinary Technologist and currently a Veterinary Technology Laboratory instructor. She graduated from the Veterinary Technology program at the University of Tennessee at Martin in 2014. Since graduation, she has furthered her education and technician skills from Auburn University Small Animal Teaching Hospital and Memphis Veterinary Specialists.

Mr. Zach Morphis is a licensed Veterinary Technologist and currently a Veterinary Technology Laboratory instructor in the UT Martin Veterinary Technology Program. He graduated from UT Martin Veterinary Technology Program in 2016 and worked at the UT Knoxville Vet School before coming to teach at UTM.

Mr. Matthew Chesnut is a Laboratory Instructor for the veterinary health technology program. He graduated from UT Martin in 2012 with a degree in Animal Science and a second in 2016 with Veterinary Health Technology also from UT Martin.

Appendix I

PLENARY SESSIONS

Mrs. Lisa Smartt is a 53-year-old woman who likes to laugh! She writes a humorous weekly column for the Weakley County Press and the Union City Daily Messenger called “The Smartt View.” Living in the woods with husband, Philip, two sons, two cats, and two dogs provide rich illustrations for her frequent motivational speaking engagements. Lisa believes laughter is a gift and LOVES to share with others her personal weaknesses, struggles, and the sheer joy of daily living and loving! What are the pitfalls of whining? How can I learn from negative experiences? What is true love...and how will I recognize it? What do loyalty, honesty, discipline and kindness have to do with true success? Her four sessions included classes like “Five Qualities of a Real Man or Woman” and “Looking for Love in all the Wrong Places”. Students were challenged to maintain character and convictions. Lisa believes that when rigor is combined with character development and a positive attitude, the sky’s the limit.

Dr. Kevin Downs, Professor of Animal Science at Middle Tennessee State University and Joseph Gulizia, MS Candidate at Auburn University presented a workshop on poultry production and anatomy. The workshop focused on experiential learning related to poultry industry. The workshop was well received and allowed scholars to build on the previous industry tours sponsored by Tyson Foods.