

Carson M. Edge, Ph.D.
TES Technician
Department of Biosystems Engineering
Auburn University, AL
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Education

Ph.D. Biosystems Engineering, Auburn University	2022
M.S. Biosystems Engineering, Auburn University	2017
B.S. Biosystems Engineering, Auburn University	2015

Professional Experience

05/2022 – Present	TES Technician, Biosystems Engineering, Auburn University
08/2017 – 05/2022	Ph.D. GRA, Biosystems Engineering, Auburn University
02/2022 – 06/2020	Research Technician, Ag & Bio Engineering, Mississippi State University
06/2019 – 02/2020	Engineering Technician, USDA ARS Poultry Research Unit, Starkville, MS
08/2015 – 08/2017	M.S. GRA, Biosystems Engineering, Auburn University
05/2015 – 07/2015	Undergraduate RA, Biosystems Engineering, Auburn University
05/2014 – 07/2014	Southeast Energy Development (SEED) Undergraduate Research Fellow, Idaho National Laboratories, ID

Research Activities

My primary interests and research expertise are in estimating water consumption needs for commercial broiler farms. This includes the development of a water consumption model and rainwater harvesting (RWH) model to estimate on-farm water consumption and RWH system feasibility based on a broiler farms characteristics and geographic location.

Professional Affiliations

- American Society of Agricultural and Biological Engineers 2014 – present

Peer-Reviewed Journal Articles

- Linhoss, J.L., J.D. Davis, J.C. Campbell, J.L. Purswell, K.G. Griggs, **C.M. Edge**. 2022. Comparison of commercial broiler house lighting programs using LED and natural light: Part 1 – spatial and temporal analysis of light intensity. J. Appl. Poult. Res. 100272. <https://doi.org/10.1016/j.japr.2022.100272> (Accepted)
- Purswell, J.L., J.E. Linhoss, **C.M. Edge**, J.D. Davis, J.C. Campbell. 2018. Water supply rates for recirculating evaporative cooling systems. Appl. Engr. In Ag. 34(3): 581-590. <https://doi.org/10.13031/aea.12652>

Extension Articles

- D. Johnson, J. Davis, J. Campbell, J. Purswell, K. Griggs, C. Smith, M. S. R. Lastres, and **C. Edge**. 2021. NPTC Tools of the Trade: Measuring Water Flow Rate. Alabama Cooperative Extension Service. ANR-2827.
- A. Burgett, J. Davis, J. Campbell, J. Purswell, K. Griggs, C. Smith, M. S. R. Lastres, and **C. Edge**. 2021. NPTC Tools of the Trade: Smoke Tracing to Identify Air Infiltration Leaks. Alabama Cooperative Extension Service. ANR-2822.

3. J. Davis, J. Campbell, D. Miller, K. Griggs, M. Rueda, and **C. Edge**. 2021. NPTC Tools of the Trade: Testing a Motor Capacitor. Alabama Cooperative Extension Service. ANR-2783.
4. J. Davis, J. Campbell, D. Miller, K. Griggs, M. S. R. Lastres, and **C. Edge**. 2021. Start and Run Capacitors for Electric Motors. Alabama Cooperative Extension Service. ANR-2784.

Awards and Honors

- 2021 Farm Foundation Cultivator and participant in Round Table Meeting: The Future for Animal Agriculture. Jan 13-15, 2021
- J.D. Davis, J.C. Campbell, K.G. Griggs, and **C.M. Edge** 2020 - 2022
Factorial evaluation of aluminum irrigation pipe corrosion using two chemical substances. Grant from Jones Hamilton (\$7,434)
- Auburn University College of Agriculture Graduate Student Poster Showcase 3rd place winner. 2017

Research Conference Papers and Proceedings

1. **Edge, C.M.**, J.D. Davis, J.L. Purswell, W.D. Batchelor, E.H. Simpson. 2018. Development of a rainwater harvesting model for broiler farms to estimate on-farm storage needs. 10th International Livestock Environment Symposium (ILES X), Paper #055. September 25-27, Omaha, NE. (poster) (Volunteered)
2. Goneke, K.E., J.D. Davis, J.L. Purswell, G.D. Chesser, **C.M. Edge**, J.C. Campbell. 2018. Thermal performance of perforated pen panels for on-farm nutritional test trials. 10th International Livestock Environment Symposium (ILES X), Paper #130. September 25-27, Omaha, NE. (Volunteered)

Research Abstracts and Conference Presentations

1. **Edge, C. M.**, J. D. Davis, J. L. Purswell, J. C. Campbell, W. D. Batchelor, J. E. Linhoss, O. O. Fasina. 2021. Development of a water consumption model to estimate broiler farm water needs. 2021 Alabama Water Resources Conference and Symposium. September 8-10, Orange Beach, AL. (oral)(Volunteered)
2. **Edge, C.M.**, J.D. Davis, J.L. Purswell, W.D. Batchelor, E.H. Simpson. 2018. Evaluation of a rainwater harvesting model for broiler farms to estimate on-farm storage needs across the U.S. 2018 ASABE International Meeting. July 29-August 1, Detroit, MI. (oral) (Volunteered)
3. **Edge, C.M.**, J.D. Davis, J.L. Purswell, W.D. Batchelor, E.H. Simpson. 2018. Development of a rainwater harvesting model for broiler farms to estimate on-farm storage needs. International Production and Processing Expo. January 29, Atlanta, GA. (oral) (Volunteered)
4. **Edge, C.M.**, J.D. Davis, J.L. Purswell, W.D. Batchelor, E.H. Simpson. 2017. Development of a rainwater harvesting model for broiler farms to estimate on-farm storage needs. July 16-19, Spokane, WA. (poster) (Volunteered)
5. **Edge, C.M.**, J.D. Davis, J.L. Purswell, W.D. Batchelor, E.H. Simpson. 2017. Development of a rainwater harvesting model for broiler farms to estimate on-farm storage needs. Auburn University College of Agriculture Graduate Student Poster Showcase, October 26, Auburn, AL. (poster) (Volunteered).
6. **Edge, C.M.**, J.D. Davis, J.L. Purswell, W.D. Batchelor, E.H. Simpson. 2017. Development of a rainwater harvesting model for broiler farms to estimate on-farm storage needs. Auburn University This is Research Student Symposium, April 31, Auburn, AL. (poster) (Volunteered)

7. **Edge, C.M.**, J.J. Jacobson, S.A. Carnohan. 2014. Risk analysis of variable feedstock moisture in a biofuel production model. 2014 ASABE International Meeting, July 13-16, Montreal, Quebec, Canada. (poster) (Volunteered)
8. **Edge, C.M.**, J.J. Jacobson, S.A. Carnohan. 2014. Risk analysis of variable feedstock moisture in a biofuel production model. 2014 NSF REU and IBSS SEED Fellow Program, July 25, Auburn, AL. (poster)(Volunteered)

Presentations

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| 1. Development of a water consumption model to estimate broiler farm water needs. Presented during Department of Biosystems Engineering seminar. (oral)(Volunteered). | 09/16/2021 |
| 2. Water consumption trends for modern commercial broilers. Presented during Department of Biosystems Engineering seminar. (oral)(Volunteered) | 09/02/2021 |
| 3. Water consumption needs for modern broilers. Presented during 2021 NPTC Summer Advisor Meeting. (oral)(Invited) | 08/25/2021 |
| 4. Water consumption needs on broiler farms. Presented during 2021 Farm Foundation Round Table: The Future for Animal Agriculture. (oral)(Invited) | 01/14/2021 |
| 5. Rainwater Harvesting Model for Poultry Farms. Presented during Department of Biosystems Engineering Advisory Committee Meeting. (oral)(Invited) | 08/01/2016 |

Guest Lecturer

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| • BSEN 5450 Commercial Poultry & Livestock Housing (one lecture/lab on house controllers) | 2020 |
| • BSEN 5450 Commercial Poultry & Livestock Housing (one lecture/lab on water quality) | 2017 |
| • BSEN 5450 Commercial Poultry & Livestock Housing (one lecture on rainwater harvesting) | 2017 |