

CURRICULUM VITAE
JERICA J. J. RICH

P.O. Box 1080 ♦ State University, AR 72467
(870) – 972 – 3392 ♦ Jerich@astate.edu

CURRENT APPOINTMENT

Arkansas State University, Jonesboro, AR – August 2020 to Present
Assistant Professor of Animal Science

- College of Agriculture (75% Teaching and 25% Research)

EDUCATION

Ph.D. in Animal Science, South Dakota State University – July 2020

Specialization: Reproductive Physiology

Dissertation Title: Characterization and effects of systemic and ovarian GnRH in beef cattle

Advisor: Dr. George A. Perry

M.S. in Animal Science, South Dakota State University – July 2017

Specialization: Reproductive Physiology

Thesis Title: Local and systemic actions of GnRH relating to estradiol and associated reproductive parameters in beef cattle

Advisor: Dr. George A. Perry

B.S. in Biomedical Sciences, University of New Hampshire – May 2015

Medical and Veterinary Sciences, *magna cum laude*

PROFESSIONAL EXPERIENCE

Arkansas State University, Jonesboro, AR – August 2020 to Present

Assistant Professor of Animal Science

- College of Agriculture (75% Teaching and 25% Research)

South Dakota State University, Brookings, SD – August 2015 to August 2020

Animal Science Graduate Research and Teaching Assistant

- Managed multiple research trials
- Performed transrectal ultrasonography on beef cows to determine stage of gestation and ovarian follicular development
- Mastery of Radioimmunoassay, RNA extraction, and other laboratory techniques
- Assisted in teaching undergraduate classes
- Supervised undergraduate workers and taught laboratory techniques
- Assisted in training of undergraduate research assistants and fellow graduate students
- Co-taught multiple artificial insemination schools

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TEACHING EXPERIENCE
Arkansas State University

Graduate courses in bold, courses developed contain an asterisk ()*

Summary of Courses Taught at ASU (Fall 2020 to Present)						
Term	Course	Number	No. Students	Total Credit Hours	Student Eval.	Student Eval. (college mean)
FA2020	Companion Animal Care & Management	ANSC 3203	24 (2 honors)	3	4.69	4.52
FA2020	Principles of Breeding	ANSC 4663/ 5663	15/ 3	3	4.67	4.52
FA2020	Veterinary Anatomy & Physiology	ANSC 3633	25	3	4.63	4.52
SP2021	Reproductive Physiology	ANSC 4683/ 5683	20 (2 honors)/ 2	3	4.64	4.60
SP2021	Introduction to Animal Science Lab	ANSC 1621	15	1 (2 sections)	4.82	4.60
SP2021	*Livestock Growth & Development*	ANSC 4723/ ANSC 5723	20/ 3	3	4.81	4.60
SP2021	Internships in Agriculture	AGRI 420V	1	3	5	4.60
Maymester 2021	*Cattle Reproduction AI*	ANSC 478V/ AGRI 638V	10/ 1	3	N/A	N/A
SU2021	Endocrinology of Farm Animals	ANSC 4733/ 5733	9/ 1	3	N/A	N/A
FA2021	Principles of Breeding	ANSC 4663	19	3	4.77	4.55
FA2021	Veterinary Anatomy & Physiology	ANSC 3633	34 (1 honors)	3	4.87	4.55
FA2021	Introduction to Animal Science Lab	ANSC 1621	35	1 (2 sections)	4.88	4.55
SP2022	Introduction to Animal Science Lab	ANSC 1621	16	1 (2 sections)	4.92	4.62
SP2022	*Livestock Growth & Development*	ANSC 4723/ ANSC 5723	9/ 2 (1 honors)	3	4.96	4.62
SP2022	Reproductive Physiology	ANSC 4683/ 5683	30/ 1	3	4.85	4.62
SP2022	Agricultural Connections: Technical Interpretations and Professional Skills	AGRI 4723 (WEB)	53	3	4.39	4.62
Maymester 2022	Cattle Reproduction AI	ANSC 478V/ AGRI 638V	12/ 1	N/A	N/A	N/A
SU2022	Diseases of Farm Animals	ANSC 4633/ 5633	28/ 1	N/A	N/A	N/A
FA2022	Animal Breeding and Genetics	ANSC 4663/ 5663	21/ 1	3	4.75	4.67
FA2022	Veterinary Anatomy & Physiology	ANSC 3633	27	3	4.95	4.67

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FA2022	Companion Animal Care and Management	ANSC 3203	40 (2 honors)	3	4.70	4.67
FA2022	Introduction to Animal Science Lab	ANSC 1621	36	1 (2 sections)	4.90	4.67

Guest Lecturer

1. Introduction to Agricultural Business (Spring 2021)
 - Lecture size of 40 students
2. Careers in Animal Science (Spring 2021 and Spring 2022)
 - Zoom lecture, University of New Hampshire

South Dakota State University

Teaching Assistant Roles

1. Principles of Animal Nutrition AS 219 (Fall 2019)
 - Lecture size of 120 students
2. Livestock Reproduction AS 333 (Fall 2015, 2016, 2017, 2018)
 - Lecture size 140 students
3. Introduction to Animal Science AS 101 (Spring 2017 and 2018)
 - Taught a laboratory section of 25 students
 - Laboratory topics taught:
 - live animal and carcass evaluation for various species (poultry, sheep, cattle, and swine)
 - Nutrition
 - Reproduction
 - Dairy, Cow/Calf, Feedlot, Sheep, Swine, and Equine Industries
4. Current Issues AS 389 (Spring 2016)
 - Lecture size 30 students

Teaching Research

- SDSU Institutional Review Board, Approval No.: IRB-1806011-EXP
- Project Title: “Learning Aids for Undergraduate Livestock Reproduction”
 - Served as the instructor for the first 2 weeks of Livestock Reproduction AS 333 (Fall 2018)

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Guest Lecturer

1. Introduction to Animal Science AS 101 (2017 and 2019)
 - Lecture size of 140 students
3. Livestock Reproduction AS 333 (2016, 2017, 2018, 2019)
 - Lecture size of 140 students
4. Cow/Calf Management AS 474 (2016, 2017, 2018, 2019; Fall and Spring semesters)
 - Taught semen handling, artificial insemination, and ultrasonography laboratories
 - Laboratory section size of 30 students (3 sections)
5. Introduction to Dairy Science Laboratory DS 130L (2019)
 - Described the estrous cycle and heat detection, semen handling, artificial insemination, reproductive tract anatomy, and demonstrated transrectal ultrasonography
 - Laboratory section size of 15 students (3 sections)

Departmental Service

1. Academic Quadrathlon (2016, 2017, 2018, 2019)
 - Coordinated the reproductive physiology section of the SDSU Academic Quadrathlon
 - Duties included: exam preparation, development, administration, and grading

University of New Hampshire

CREAM Student Advisor

- Served as a student advisor to train incoming CREAM students (Fall 2014; 1 credit hour)
 - Advising duties included: teaching the history of the course, teaching chores, the various committees and how to run them

EXTENSION TEACHING EXPERIENCE

Artificial Insemination Schools

Arkansas State University

1. Cattle Artificial Insemination Schools (2022)
 - Guest instructor for spring AI school at RCK Genetics located in Romance, AR

South Dakota State University Extension

2. Cattle Artificial Insemination Schools (2015 to 2019)
 - Co-instructed 14 schools that were attended by over 250 participants
 - Instruction involved teaching the AI technique, presentations on the bovine estrous cycle and reproductive anatomy, and artificial insemination versus natural service

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3. Youth Artificial Insemination Schools (2017 and 2018)
 - Co-instructed 2 schools that were attended by 40 middle school students
 - Instruction involved teaching the AI technique using slaughterhouse reproductive tracts, demonstration of ultrasonography, and presentations on reproductive anatomy

PEER-REVIEWED PUBLICATIONS

Arkansas State University Affiliation

1. Snider, A.P., Yake, H.K., Granger, C.D., Rosasco, S.L., McDanel T.G., Snelling, W.M., Chase Jr., C.C., Miles, J.R., Lents, C.A., Quail, L.K., **Rich, J.J.J.**, Epperson, K.M., Crouse, M.S., Summers, A.F., Perry, G.A., Bennett, G.L., Cushman, R.A. 2022. Polymorphism of the follicle stimulating hormone receptor does not impact reproductive performance or *in-vitro* embryo production in beef heifers. *Theriogenology*. <https://doi.org/10.1016/j.theriogenology.2022.10.025>
2. **Rich, J.J.J.** and Manlove, J.L. 2022. With progressively virtual classrooms, how important are on-farm technical education opportunities? Student answer! *NACTA* 66: 219-225.
3. Epperson, K.M., Beck, E.E., **Rich, J.J.J.**, Northrop-Albrecht, E.J., Perkins, S.D., Zezeski, A.L., Ketchum, J.N., Menegatti Zoca, S., Walker, J.A., Geary, T.W., Perry, G.A. 2022. Modulation of expression of estrus, steroidogenesis and embryo development following per-artificial insemination nutrient restriction in beef heifers. *Animal Reproduction Science* 244:107045. <http://doi.org/10.1016/j.anireprosci.2022.107045>
4. Snider, A.P., Crouse, M.S., Rosasco, S.L., Epperson, K.M., Northrop-Albrecht, E.J., **Rich, J.J.J.**, Chase Jr., C.C., Miles, J.R., Perry, G.A., Summers., A.F., Cushman, R.A. 2022. Greater numbers of antral follicles in the ovary are associated with increased concentrations of glucose in uterine luminal fluid of beef heifers. *Animal Reproduction Science* 239(4):106968. <http://doi.org/10.1016/j.anireprosci.2022.106968>

South Dakota State University Affiliation

5. Northrop-Albrecht, E.J., **Rich, J.J.J.**, Cushman, R.A., Yao, R., Ge, X., Perry, G.A. 2021. Influence of conceptus presence and preovulatory estradiol exposure on uterine gene transcripts and proteins around maternal recognition of pregnancy in beef cattle. *Molecular and Cellular Endocrinology*. <https://doi.org/10.1016/j.mce.2021.111508>.
6. Northrop-Albrecht, E.J., **Rich, J.J.J.**, Cushman, R.A., Yao, R., Ge, X., Perry, G.A. 2021. Influence of estradiol on bovine trophectoderm and uterine gene transcripts around maternal recognition of pregnancy. *Biology of Reproduction* 105(2): 381-392. <https://doi.org/10.1093/biolre/iaab091>.
7. Perry, G.A., Perkins, S.D., Northrop, E.J., **Rich, J.J.J.**, Epperson, K.M., Andrews, T.N., Kline, A.C., Quail, L.K., Walker, J.A., Wright, C.L., and Russell, J.R. 2021. Impact of trace mineral source on beef replacement heifer growth, reproductive development, and biomarkers of maternal recognition of pregnancy and embryo survival. *Journal of Animal Science* 99:7. <https://doi.org/10.1093/jas/skab160>.

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8. Ciernia, L.A., Perry, G.A., Smith, M.F., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Green, J.A., Zezeski, A.L., Geary, T.W. 2021. Effect of estradiol preceding and progesterone subsequent to ovulation on proportion of postpartum beef cows pregnant. *Animal Reproduction Science* 227:106723.
<https://doi.org/10.1016/j.anireprosci.2021.106723>.
9. Epperson, K.M., **Rich J.J.J.**, Menegatti Zoca, S., Perkins, S.D., Northrop, E.J., Daly, R.F., Walker J.A., Rhoades J.R., and Perry G.A. 2020. Influence of bovine viral diarrhea virus infection on AI conception and breeding season pregnancy success in vaccinated beef herds. *The Bovine Practitioner* 52:2. <https://bovine-ojs-tamu.tdl.org/bovine/index.php/bovine/article/view/8023>.
10. Epperson, K.M., **Rich, J.J.J.**, Zoca, S.M., Northrop, E.J., Perkins S.D., Walker J.A., Rhoades, J.R., and Perry, G.A. 2020. Effect of progesterone supplementation in a resynchronization protocol on follicular dynamics and pregnancy success. *Theriogenology* 157:121-129. <https://doi.org/10.1016/j.theriogenology.2020.07.011>.
11. Perry, G.A., Walker, J.A., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Beck, E.E., Sandbulte, M.D., Mokry, F.B. 2019. Influence of Sexcel™ (Gender Ablation Technology) gender-ablated semen in fixed-time artificial insemination of beef cows and heifers. *Theriogenology*. <https://doi.org/10.1016/j.theriogenology.2019.11.030>.
12. Perry, G.A., Cushman, R.A., Perry, B.L., Schiefelbein, A.K., Northrop, E.J., **Rich, J.J.J.**, Perkins, S.D. 2019. Role of preovulatory concentrations of estradiol on timing of conception and regulation of the uterine environment. *Systems Biology in Reproductive Medicine*. <https://doi.org/10.1080/19396368.2019.1695979>.
13. Cushman, R.A., Soares E.M., Yake H.K., Patterson, A.L., Rosasco, S.L., Beard, J.K., Northrop, E.J., **Rich, J.J.J.**, Miles, J.R., Chase, C.C., Gonda, M.G., Perry, G.A., McNeel, A.K., Summers, A.F. 2019. Brangus cows have ovarian reserve parameters more like Brahman than Angus cows. *Animal Reproduction Science* 209:106170.
<https://doi.org/10.1016/j.anireprosci.2019.106170>.
14. Tenley, S.C., Gomes, R.S., Rosasco, S.L., Northrop, E.J., **Rich, J.J.J.**, McNeel, A.K., Summers, A.F., Miles, J.R., Chase, C.C., Lents, C.A., Perry, G.A., Wood, J. R., Cupp, A.S., Cushman, R.A. 2019. Maternal age influences the number of primordial follicles in the ovaries of yearling angus heifers. *Animal Reproduction Science* 200: 105-112. <https://doi.org/10.1016/j.anireprosci.2018.12.004>.
15. Northrop, E.J., **Rich, J.J.J.**, Rhoades, J.R., Perry, G.A. 2019. Comparison of two bovine serum pregnancy tests in detection of artificial insemination pregnancies and embryonic loss in beef cattle. *PLoS ONE*. 14(1): e0211179.
<https://doi.org/10.1371/journal.pone.0211179>.
16. Northrop, E.J., **Rich, J.J.J.**, Cushman, R.A., McNeel, A.K., Soares, E.M., Brooks, K., Spencer, T.E., and Perry, G.A. 2018. Effects of preovulatory estradiol on uterine environment and conceptus survival from fertilization to maternal recognition of pregnancy. *Biology of Reproduction*. 99(3):629-638.
<https://doi.org/10.1093/biolre/iy086>.
17. **Rich, J.J.J.**, Northrop, E.J., Larimore, E.L., and Perry, G.A. 2018. Influence of GnRH supplementation at CIDR removal on estrus expression and interval to estrus in beef cattle. *Theriogenology*. 119: 76-79.
<https://doi.org/10.1016/j.theriogenology.2018.06.029>.

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18. **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Perry, G.A. 2018. Influence of small doses of gonadotropin releasing hormone following controlled internal drug release removal on reproductive performance in beef cattle subjected to a fixed-time artificial insemination protocol. Professional Animal Scientist. 34: 566-570.
<https://doi.org/10.15232/pas.2018-01787>.
19. Perry, G.A., Geary, T.W., Walker, J.A., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Mogck, C.L., Van Emon, M.L., Zezeski, A.L., and Daly, R.F. 2018. Influence of vaccination with a combined chemically altered/inactivated BHV-1/BVD vaccine on reproductive performance in beef cows and heifers. Bovine Practitioner 52.
<https://doi.org/10.21423/bovine-vol52no1p53-58>.

SUBMITTED

Arkansas State University Affiliation

20. Green, V.S., **Rich, J.J.J.**, Manlove, J.L., Kim, G. Quantitative and qualitative analysis of competency assessments used in an upper-level soil fertility course. Natural Sciences Education Journal.
21. Ketchum, J.N., Perry, G.A., Quail, L.K., Ogg, M.A., Zezeski, A.L., **Rich, J.J.J.**, Menegatti Zoca, S., Kline, A.C., Andrews, T.N., Ortega, M.S., Smith, M.S., Geary, T.W. Influence of preovulatory estradiol on the maintenance of pregnancy in beef cattle.

IN PREPARATION

Arkansas State University Affiliation

22. **Rich, J.J.J.**, Northrop-Albrecht, E.J., Epperson, K.M., Menegatti Zoca, S., Perkins, S.D., Walker, J.A., Funston, R.N., Mercadante, V.R.G., Perry, G.A. Supplemental GnRH used in synchronization protocols among beef cows and heifers.
23. **Rich, J.J.J.**, Northrop-Albrecht, E.J., Perkins, S.D., Epperson, K.M., Menegatti Zoca, S., Andrews, T.N., Kline, A.C., Cushman, R.A., Perry, G.A. Characterization and localization of GnRH in the bovine ovary.

EXTENSION PUBLICATIONS

South Dakota State University Affiliation

1. **Rich, J.J.J.**, Perry, G.A. Pregnancy diagnosis in your cow calf herd. SDSU Extension iGrow. May 2019. Available at: <https://extension.sdstate.edu/pregnancy-diagnosis-your-cow-calf-herd>.
2. Menegatti Zoca, S., **Rich, J.J.J.**, Epperson, K.M., Perry, G.A. Increasing AI pregnancies using early pregnancy detection and resynchronization. South Dakota Cattlemen's Magazine. May 2019.
3. **Rich, J.J.J.**, Menegatti Zoca, S. Dystocia: Lasting effects on reproductive performance of your cow calf herd. South Dakota Stockgrowers Magazine. March 2019.

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BOOK CHAPTER (Contributing Editor)

South Dakota State University Affiliation

1. Nold, R., Sterle J.A., Bundy, J., Karr, L., and B. A. Reiling, B.A., **Rich, J.J.J.** 2019. Introduction to Animal Science (2nd Ed.). Dubuque, IA: Great River Learning Center. ISBN: 9781680753110. Available from <http://greatriverlearning.com/product-details/1087>.
 - Digital textbook, used at SDSU, Iowa State, and University of Nebraska-Lincoln
 - Co-Editor, percent contribution to reproduction chapter: 100%; percent contribution to the entire digital textbook 1/13 chapters or 7.5%
 - Provided a deep review and edit of the reproduction chapter
 - Added new sections on nutrient utilization, pre-breeding examination, and reproductive diseases
 - Suggested and contributed appropriate photos and graphics to aid student understanding

ORAL AND POSTER PRESENTATIONS

Invited Talks

Arkansas State University Affiliation

1. **Rich, J.J.J.** Methods to Determine Pregnancy Status in Beef Cattle. Arkansas Cattlemen's Association Meeting. Summer 2022.
2. **Rich, J.J.J.** Comparison of Artificial Insemination versus Natural Service in Cattle. Arkansas Cattlemen's Association Meeting. Summer 2021.

South Dakota State University Affiliation

3. Northrop, E.J., **Rich, J.J.J.**, Cushman, R.A., Perry, G.A. Regulation of preovulatory estradiol and its impacts throughout the bovine estrous cycle. ASAS MIDWEST SYMPOSIUM 2018.

Oral Presentations

Arkansas State University Affiliation

4. **Rich, J.J.J.**, Northrop-Albrecht E.J., Epperson, K.M., Menegatti Zoca, S., Perkins, S.D., Daly, R.F., Cushman, R.A., Perry, G.A. Relationship among granulosa cell GnRH-I, GnRH-II, and GnRH-R mRNA abundance and follicular fluid steroid hormone concentrations of bovine antral follicles at specific stages of follicular development. ASAS Annual Meeting 2021.

South Dakota State University Affiliation

5. **Rich, J.J.J.**, Northrop, E.J., Epperson, K.M., Menegatti Zoca, S., Perkins, S.D., Walker, J.A., Timlin, C.L., Dias, N.W., Mercadante, V.R.G., Perry, G.A. Effects of

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low doses of GnRH at CIDR removal on estrus expression and conception rates in beef heifers. ASAS MIDWEST 2019.

6. **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Beck, E.E., Rhodes, J.R., Perry, G.A. Comparison of two serum pregnancy tests in detection of AI versus natural service pregnancies in beef herds. ASAS MIDWEST 2018.
7. **Rich, J.J.J.**, Northrop, E.J., Larimore, E.L., Perry, G.A. Influence of GnRH supplementation at CIDR removal on estrus expression and interval to estrus in beef cattle. ASAS MIDWEST 2017.

Poster Presentations

Arkansas State University Affiliation

8. **Rich, J.J.J.** and Manlove, J.L. With progressively virtual classrooms, how important are technical education opportunities? Students answer! Hawaii International Conference on Education 2023.
9. Loyd, S., **Rich, J.J.J.** Controlling *Haemonchus contortus* populations in domestic goats. Create@State 2022, Graduate Student.
10. Meza-Garcia, A., **Rich, J.J.J.** Let's talk about estrous synchronization. Create@State 2022, Undergraduate Student.
11. Shacouria, A., **Rich, J.J.J.** Comparing pregnancy outcomes of two estrous synchronization protocols used on the ASU cow herd. Create@State 2022, Undergraduate Student.

South Dakota State University Affiliation

12. **Rich, J.J.J.**, Northrop, E.J., Epperson, K.M., Menegatti Zoca, S., Perkins, S.D., Daly, R.F., Cushman, R.A., Perry, G.A. Differences in relative abundance of GnRH-I and GnRH-II in granulosa cells of bovine antral follicles at specific stages of follicular development. Society for the Study of Reproduction 2019.
13. **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Perry, G.A. Influence of small doses of GnRH following CIDR removal on reproductive parameters in beef cattle subjected to a fixed-time AI protocol. Society for the Study of Reproduction 2017.
14. **Rich, J.J.J.**, Northrop, E.J., Cushman, R.A., Perry, G.A. Differences in abundance of GnRH-I and GnRH-II among bovine antral follicles. International Congress on Animal Reproduction 2016.

ABSTRACTS (Contributing Author)

Arkansas State University Affiliation

1. Ketchum, J.N., Quail, L.K., Epperson, K.M., Guy, C.P., **Rich, J.J.J.**, Menegatti Zoca, S., Kline, A.C., Andrews, T.N., Walker, J.A., Fontes, P., Johnson, S.K., Owen, M.P.T., Harvey, K.M., Summers, A.F., Perry, G.A. Evaluation of two beef cow fixed-time AI protocols that utilize pre-synchronization. ASAS Annual Meeting 2022 (presentation).
2. Quail, L.K., Ketchum, J.N., Epperson, K.M., Menegatti Zoca, S., Andrews, T.N., Kline, A.C., **Rich, J.J.J.**, Zezeski, A.L., Ogg, M., Rhoades, J.R., Smith, M.F.,

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- Geary., T.W., Perry., G.A. Factors impacting abundance of PAGs after embryo transfer in beef cattle. ASAS 2022.
3. Menegatti Zoca, S., Walker, J.A., Kline, A., Andrews, T., **Rich, J.J.J.**, Epperson, K.M., Nora Drum, J.N., Ortega, M.S., Perry, G.A. Relationship of Sperm Plasma Serine Protease Inhibitor (SERPINA5) and Dystroglycan (DAG1) Proteins with Dairy Bull Fertility. ASAS Annual Meeting 2022 (poster).
 4. Epperson, K.M., Quail, L.K., **Rich, J.J.J.**, Menegatti Zoca, S., Andrews, T., Kline, A., White, F., Daly, R.F., Perry, G.A. Bovine Luteal Cell Apoptosis Following Administration of a Commercial Inactivated or Modified-live Virus Vaccine at Time of AI. ASAS Annual Meeting 2022 (poster).
 5. Epperson., K.M., **Rich, J.J.J.**, Northrop-Albrecht, E.J., Beck, E.E., Perkins, S.D., Daly, R.F., Perry, G.A. Reproductive dysfunction in cattle following vaccination not a result of viral infection of the reproductive tract. ASAS 2021.
 6. Andrews, T.N., Walker, J.A., Epperson, K.M., **Rich, J.J.J.**, Kline, A.C., Quail, L.K., McCoski, S., Sanford, C., Zezeski, A.L., Geary, T.W., Perry, G.A. The interaction of change in nutrition after artificial insemination on plasma metabolites, steroid hormones, and uterine histotroph in beef heifers. ASAS 2021.
 7. Ketchum, J.N., Perry, G.A., Epperson, K.M., Quail, L.K., Ogg, M.A., Zezeski, A.L., **Rich, J.J.J.**, Menegatti Zoca, S., Kline, A.C., Andrews, T.N., Ortega, M.S., Smith, M.F., Geary, T.W. Increased preovulatory estradiol improves pregnancy success of embryo transfer in beef cows. ASAS Annual Meeting 2021 (presentation).
 8. Kline, A.C., Walker, J.A., Andrews, T.N., Menegatti Zoca, S., Epperson, K.M., Quail, L.K., **Rich, J.J.J.**, Rhoades, J.R., Perry, G.A. Factors influencing clearance of pregnancy-associated glycoproteins in postpartum beef cattle. ASAS Annual Meeting 2021 (presentation).
 9. Cushman, R.A., Rosasco, S.L., Epperson, K.M., Northrop-Albrecht, E.J., **Rich, J.J.J.**, Chase Jr., C.C., Crouse, M.S., Miles, J.R., Perry, G.A., Summers, A.F., Snider, A.P. Uterine function during maternal recognition of pregnancy differs due to size of the ovarian reserve in beef heifers. ASAS Annual Meeting 2021 (presentation).
 10. Snider, A.P., Crouse, M.S., Rosasco, S.L., Epperson, K.M., Northrop-Albrecht, E.J., **Rich, J.J.J.**, Chase Jr., C.C., Miles, J.R., Perry, G.A., Summers, A.F., Cushman, R.A. Beef heifers with increased number of follicles have greater uterine luminal glucose concentrations. ASAS Annual Meeting 2021 (presentation).
 11. Epperson, K.M., **Rich, J.J.J.**, Zezeski, A.L., Menegatti Zoca, S., Walker, J.A., Geary, T.W., Perry, G.A. Effect of pre- and post-AI nutrition on ovarian dynamics, steroidogenesis, and expression of estrus in beef heifers. ASAS Annual Meeting 2021 (presentation).
 12. Andrews, T.N., Epperson, K.M., **Rich, J.J.J.**, Menegatti Zoca, S., Kline, A.C., Quail, L.K., Zezeski, A.L., Geary, T.W., Walker, J.A., Perry, G.A. The interaction of change in nutrition after artificial insemination on plasma metabolites, steroid hormones, and uterine histotroph in beef heifers. ASAS Annual Meeting 2021 (poster).
 13. Menegatti Zoca, S. Walker, J.A., Andrews, T.N., Kline, A.C., **Rich, J.J.J.**, Epperson, K.M., Drum, J.N., Ortega, S., Perry, G.A. Relationship between sire conception rate, sperm motility, sperm SERPINA5 relative concentration, and in vitro produced embryos in dairy bulls. ASAS Annual Meeting 2021 (poster).

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JERICA J. J. RICH

P.O. Box 1080 ♦ State University, AR 72467
(870) – 972 – 3392 ♦ Jerich@astate.edu

14. Walker, J.A., **Rich, J.J.J.**, Rusche, W.C., Perry, G.A. Effect of estrous synchronization with natural service or fixed-time artificial insemination with conventional or gender-skewed semen in beef females. ASAS Annual Meeting 2021 (poster).
15. Walker, J.A., **Rich, J.J.J.**, Rusche, W.C., Perry, G.A. Influence of reproductive technologies on post weaning calf performance and carcass characteristics. ASAS Annual Meeting 2021 (poster).

South Dakota State University Affiliation

16. Ciernia, L.E., Geary, T.W., Green, J.A., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Perry, G.A., Zezeski, A.L., Smith, M.F. Effect of preovulatory estradiol and postovulatory progesterone on the establishment of pregnancy in beef cattle. Society for the Study of Reproduction 2019.
17. Epperson, K.M., **Rich, J.J.J.**, Menegatti Zoca, S., Northrop, E.J., Perkins, S.D., Walker, J.A., Rhoades, J.R., Perry, G.A. Effect of progesterone supplementation in a resynchronization protocol on follicular dynamics and pregnancy success. Society for the Study of Reproduction 2019.
18. Menegatti Zoca, S., **Rich, J.J.J.**, Epperson, K.M., Perry, G.A. Evaluation of the variability among bulls for CD9 and SERPINA5 on the bovine sperm head. Society for the Study of Reproduction 2019.
19. Northrop, E.J., **Rich, J.J.J.**, Cushman, R.A., Miles, J.R., Lindholm-Perry, A.K., Keel, B.N., Yao, R., Ge, X., Perry, G.A. The influence of preovulatory estradiol on trophectoderm and uterine gene transcript abundance around maternal recognition of pregnancy in beef cattle. Society for the Study of Reproduction 2019.
20. Cushman, R.A., Northrop, E.J., **Rich, J.J.J.**, Perry, G.A., Miles, J.R., Chase, C.C. Abundance of transcript for bovine interferon tau is decreased in blastocysts produced from ovaries with increased number of antral follicles. Society for the Study of Reproduction 2019.
21. Perry, G.A., Perkins, S.D., Northrop, E.J., **Rich, J.J.J.**, Mayes, S., Wright, C., Russell, J. Effect of trace mineral source on heifer reproductive performance. ASAS Nationals 2019.
22. Epperson, K.M., **Rich, J.J.J.**, Menegatti Zoca, S., Perkins, S.D., Northrop, E.J., Daly, R.F., Walker, J.A., Rhoades, J.R., Perry, G.A. Influence of BVDV exposure on AI conception and breeding season pregnancy success in beef herds. ASAS MIDWEST 2019.
23. Cushman, R.A., Chase, C.C., **Rich, J.J.J.**, Northrop, E.J., Thallman, R.M., Snelling, W.M., Kuehn, L.A., Brown-Brandl, T., Perry, G.A. Influence of daily temperature fluctuations on estrus activity determined by an electronic estrus detection system and conception to artificial insemination in cross-bred beef heifers. ASAS MIDWEST 2019.
24. Reiner, A.M., Perkins, S.D., **Rich, J.J.J.**, Northrop, E.J., and G. A. Perry. Impact of a long-acting dewormer on fetal development and subsequent calf performance. ASAS MIDWEST 2019.
25. Perkins, S.D., **Rich, J.J.J.**, Northrop, E.J., Walker, J.A., Perry, G.A. Impact of an extended-release dewormer on rumen VFAs and blood metabolites. ASAS

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MIDWEST 2019.

26. Northrop, E.J., **Rich, J.J.J.**, Cushman, R.A., Ge, X., and Perry, G.A. Influence of preovulatory estradiol on trophectoderm and uterine gene transcript abundance around maternal recognition of pregnancy in beef cattle. International Ruminant Reproduction Symposium 2018.
27. Perry, G.A., Cushman, R.A., Northrop, E.J., **Rich, J.J.J.**, and Perkins, S.D. Influence of estrus expression in a fixed-time AI protocol on reproductive performance. International Ruminant Reproduction Symposium 2018.
28. Cushman, R.A., Tenley, S.C., Gomes, R.S., Rosasco, S.L., Northrop, E.J., **Rich, J.J.J.**, McNeel, A.K., Summers, A.F., Miles, J.R., Chase, C.C., Lents, C.A., Perry, G.A., Wood, J.R., Cupp, A.S. Maternal age influences folliculogenesis and gene networks in the ovaries of beef heifers. Society for the Study of Reproduction 2018.
29. Walker, J.A., Perry, G.A., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Grussing, T., Rusche, W.C. Influence of estrous synchronization on herd calving distribution and weaning weight. ASAS Nationals 2018.
30. Douglas, R.T., Beck, E.E., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Geary, T.W., Walker, J.A., Perry, G.A. Effects of pre- and post-insemination maternal plane of nutrition on estrus and embryo development. ASAS MIDWEST 2018.
31. Perry, G.A., Walker, J.A., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Beck, E.E. Influence of Sexcel™ (gender ablation technology) gender-skewed semen in fixed-time artificial insemination of beef cows and heifers. ASAS MIDWEST 2018.
32. Beck, E.E., Douglas, R.T., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Geary, T.W., Perry, G.A., Walker, J.A. Effects of pre- and post-insemination maternal plane of nutrition on peripheral and uterine luminal fluid metabolites. ASAS MIDWEST 2018.
33. Northrop, E.J., **Rich, J.J.J.**, Rhodes, J.R., Perry, G.A. Comparison of two methods of bovine pregnancy tests to determine embryonic loss in beef cows. ASAS MIDWEST 2018.
34. Perkins, S.D., Northrop, E.J., **Rich, J.J.J.**, Perry, G.A. Role of epididymal proteins and mannose on sperm longevity. ASAS MIDWEST 2018.
35. Northrop, E.J., **Rich, J.J.J.**, McNeel, A.K., Soares, É.M., Cushman, R.A., Perry, G.A. The influence of elevated preovulatory estradiol on apoptosis in the trophectoderm of day 16 bovine conceptuses. Society for the Study of Reproduction 2017.
36. Perkins, S.D., Cushman, R.A., **Rich, J.J.J.**, Northrop, E.J., Perry, G.A. Characterization and comparison of proteins in the sperm storage tubules of female chickens to bovine epididymal fluid. Society for the Study of Reproduction 2017.
37. Cushman, R.A., Northrop, E.J., **Rich, J.J.J.**, Chase, C.C., Perry, G.A. Estrous cycle regulatory mechanisms of the uterus are altered in cows that do not demonstrate behavioral estrus during an ovulation induction protocol. Society for the Study of Reproduction 2017.
38. Perry, G.A., Geary, T.W., Walker, J.A., **Rich, J.J.J.**, Northrop, E.J., Perkins, S.D., Mogck, C.L., Daly, R.F. Influence of vaccination with a combined chemically altered/modified live/inactivated vaccine or a modified live viral vaccine on reproductive performance in beef cows and heifers. ASAS Joint Annual Meeting 2017.
39. Patterson, A.L., Beard, J.K., Herrington, M.C., Rosasco, S.L., Soares, É.M.,

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- Northrop, E.J., Larimore, E.L., **Rich, J.J.J.**, Amundson, O.L., McNeel, A.K., Chase, C.C., Perry, G.A., Summers, A.F., Cushman, R.A. Investigation of ovarian reserve parameters in *Bos indicus* cows. ASAS MIDWEST 2017.
40. Northrop, E.J., **Rich, J.J.J.**, Cushman, R.A., Perry, G.A. Impact of estrus expression and conceptus presence on plasma and uterine glucose concentrations up until maternal recognition of pregnancy in beef cattle. ASAS MIDWEST 2017.
41. Northrop, E.J., **Rich, J.J.J.**, Cushman, R.A., Spencer, T.E., Brooks, K., Perry, G.A. Influence of preovulatory estradiol on conceptus survival and uterine glucose transporter expression in beef cattle. International Congress on Animal Reproduction 2016. Toures, France.
42. Coleson, M.P.T, Northrop, E.J., **Rich, J.J.J.**, Perry, G.A., Hart, C.G., McCarty, K.J., Lemley, C.O. Effect of pregnancy on steroid eicosanoid metabolizing enzymes in bovine reproductive tissues. ASAS Joint Annual Meeting 2016.
43. Grussing, T.M., Day, M.L., Funnell, B.J., Harstine, B.R., Northrop, E.J., Perry, G.A., **Rich, J.J.J.**, Shike, D.W., Stewart, K.R., Gunn, P.J. Requirement of GnRH administration at the onset of the 5-day CO-Synch + CIDR protocol in suckled beef cows. ASAS Joint Annual Meeting 2016.
44. Northrop, E.J., **Rich, J.J.J.**, Soares, É.M., Cushman, R.A., Perry, G.A. Impact of preovulatory estradiol prior to fixed-time AI on uterine environment and embryonic survival. ASAS MIDWEST 2016.

POPULAR PRESS AND MEDIA FEATURES

1. **Rich, J.J.J.** “Finding her calling in Ag with Dr. Jerica Rich”. That Farm Life Podcast. Host: Archie Mason. August 11, 2022. Release date October 3, 2022.

GRANTS AND GIFTS

- \$5,431 – Use of PAGs to evaluate pregnancy in sheep. Internal: Arkansas State University Faculty Research Award Grant (FRAC). 2022-2023 Academic Year.
- \$1,333 – Test kit for pregnancy and bovine viral diarrhea virus diagnosis. External: IDEXX Laboratories. 2022.
- \$2,100 – Reproductive technologies and supplies for artificial insemination. External: Zoetis. 2021-2022.
- \$1,000 – Evaluation of Hands-On learning at the Agricultural Teaching and Research Center. Internal: Arkansas State University Assessment Mini-Grant. 2021-2022 Academic Year.
- \$1,500 – Comparison of two synchronization protocols in efficiency of estrus synchronization and production of pregnancies. Internal: College of Agriculture Pre-Vet Student Undergraduate Advanced Research Grant. 2020-2021 Academic Year.

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- \$500,000 – Meat and Poultry Processing Grant (CARES). External: Arkansas Department of Agriculture – Livestock and Poultry Division. 2020.

CONFERENCES ATTENDED

- ASAS Annual Meeting 2021
- ASAS MIDWEST Meeting 2016, 2017, 2018, 2019
- International Congress on Animal Reproduction 2016
- Applied Reproductive Strategies in Beef Cattle 2016, 2019, 2020, 2021
- Society for the Study of Reproduction 2017, 2019
- International Ruminant Reproduction Symposium 2018

CETL WORKSHOPS ATTENDED

Arkansas State University Center for the Enhancement of Teaching and Learning

- Nine-month certification course by the Association of College and University Educators and the American Council on Education (September 2021 to May 2022)
 - Designing learner-centered and equitable courses
 - Establishing a productive learning environment
 - Using active learning strategies
 - Promoting higher order thinking
 - Assessing to inform instruction and promote learning

South Dakota State University Center for the Enhancement of Teaching and Learning

- Developing and Assessing “Higher-Order” Skills in Large Class Sections (December 2018)
- Increasing Engagement and Active Learning in Large Class Sections (November 2018)
- Future Faculty Focus Sessions 1-3 (2017)

MEMBERSHIPS, CERTIFICATES, and AWARDS

- ACUE Certificate in Effective College Instruction, 2022
- NEOA Rising Star Award, 2022
- Certificate of Recognition for contributions to student success and advising, December 2021
- American Society of Animal Scientists – Member 2015 to present
- Society for the Study of Reproduction – Trainee 2017 to present
- SDSU Animal Science Graduate Student Association – Member 2015 to 2020
 - Committee Roles
 - President 2016, 2018
 - Social Chair 2017

UNIVERSITY AND PROFESSIONAL SERVICE

Arkansas State University

1. Institutional Animal Care and Use Committee, 2022-present
2. Enrollment management advisory committee, 2021-present

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3. Faculty achievement awards committee, 2021-present
4. Center for Excellence in Teaching and Learning faculty advisory committee, 2021-present
5. Academic Appeals Committee, 2021-2022
6. Volunteer for COVID-19 Vaccination Clinic, April 2021

College of Agriculture, Arkansas State University

7. Online Instructor Search Committee, Fall 2022
8. (CHAIR) Undergraduate and Graduate Assessment Committee, 2022-present
9. Self-Study Committee, Fall 2022
10. Agricultural Education Search Committee, Fall 2022
11. Wilson Chair Search Committee, Fall 2021 and Spring 2022
12. Sigma Alpha Sorority Faculty Advisor, 2021-present
13. Student Success, Scholarship, and Recruiting committee, 2021-present
14. Farms Planning committee, 2020-present
15. Pre-Vet Club Faculty Advisor, 2020-present
16. MC for Women in Agriculture Event, Spring 2021

Region/State/Community

17. Bill and Alice Nix Petting Zoo, Farm Tour Guide (Spring 2022, Fall 2022)
18. Arkansas Cattlemen's Association Tradeshow Booth for Arkansas State University (2021, 2022)

Journal Manuscript Reviewer

19. Animal Reproduction Science (4 manuscripts)

Peer Reviewer

20. South Dakota State Beef Day Proceedings 2022 (1 proceedings paper)

LABORATORY TECHNIQUES & TECHNICAL SKILLS

- Radioimmunoassay, ELISA
- Real Time RT-PCR
- Gel Electrophoresis
- Cryosectioning and Immunohistochemistry
- Collecting and processing bovine tissue samples following slaughter (pituitary extraction, ovarian antral follicle aspiration, corpus luteum dissection)
- Transrectal ultrasonography of ovarian structures and pregnancies (Bovine)
- External ultrasonography of pregnancies (Sheep)
- Artificial Insemination (Bovine, Swine, Equine)
- Rumen evacuation and ruminal fluid collection