
Dossier – James N. Spain

James N. Spain

Vice Provost for Undergraduate Studies and eLearning
Director of Student Success Center
Professor of Animal Science
University of Missouri

Education

Virginia Tech	PhD	1989	Animal Science
Virginia Tech	MS	1987	Dairy Science
North Carolina State	BS	1984	Animal Science

Employment History

University of Missouri

Dec 2010 – present	Vice Provost for eLearning
Sept. 2007 – present	Professor of Animal Science
August 2007 – present	Vice Provost for Undergraduate Studies and Director of the Student Success Center
July 2000 – July, 2007	Assistant Dean of Academic Programs College of Agriculture, Food and Natural Resources,
Sept 1999-June 2000	Interim Associate Dean of Academic Programs College of Agriculture, Food and Natural Resources,
Sept 1999 - 2007	Associate Professor of Animal Science
Sept 1996-Sept 1999	Assoc. Professor & State Extension Dairy Specialist Animal Science Unit
Jan 1990-1996	Assistant Professor and Extension Dairy Specialist Animal Science Unit

Dossier – James N. Spain

Academic Appointment

Jan. 1990	75% Extension	15% Research		10% Service
April 1992	60% Extension	15% Research	15% Teaching	10% Service
Sept. 1994	56% Extension	18% Research	16% Teaching	10% Service
Sept. 1998	45% Teaching	45% Research		10% Service
Sept. 1999	30% Teaching	35% Research	25% Admin.	10% Service
Sept. 2000	60% Teaching	15% Research	15% Admin.	10% Service
Sept. 2007	100% Administration			

Honors and Awards

Mizzou 39 Mentor, Alumni Association Student Board, 2016
(Mariah Griggs, Gunnar Johansen)

Iron Mike Award for Support and Service to ROTC, Mizzou Reserve Officer
Training Corp, 2014

Mizzou 39 Mentor, Alumni Association Student Board, 2013
(Jayme Gardner, Samantha Green, Caleb Phillips)

Faculty – Alumni Award, Mizzou Alumni Association, 2011

Alumni Honorary Membership Award, College of Agriculture, Food and Natural
Resources, 2011

Mizzou 39 Mentor, Alumni Association Student Board, 2010
(Charlotte Phillips)

Omicron Delta Kappa, University of Missouri Honor Tap, 2008

Golden Apple Award for Excellence in Teaching, College of Agriculture, Food
and Natural Resources, 2007

Purdy Award for Excellence in Student Services, College of Agriculture, Food
and Natural Resources, 2006

QEBH – Honorary Tap - University of Missouri's oldest Honorary Society – 2003

Governor's Award for Excellence in Teaching in Higher Education, University of
Missouri – Columbia, 2002

Dossier – James N. Spain

Honors and Awards (continued)

Kemper Teaching Fellow, University of Missouri - Columbia, 2001

Excellence in Advising Award, Mizzou Advisor's Forum, University of Missouri – Columbia, 2000

Young Animal Science Leader, Outstanding Teacher Award
Midwestern Section, American Dairy Science Association, 1999

Outstanding Teaching Award, CAFNR Student Council, University of Missouri,
1999

Outstanding Teacher Award, College of Agriculture, Food and Natural Resources
University of Missouri - Columbia, 1999

Green Chalk Award, MU Student Life - University of Missouri - Columbia, 1996

Outstanding Advisor, CAFNR Student Council University of Missouri - Columbia,
1996

Provost's Award for Creative Extension Programming by New Faculty University
of Missouri - Columbia, 1993

Outstanding Undergraduate Advisor, CAFNR Student Council, 1993

Administration

Vice Provost for Undergraduate Studies

I was asked to serve as Vice Provost for Undergraduate Studies with a three year appointment starting September 1, 2007. I accepted the invitation to serve as the “advocate for undergraduate programs at Mizzou”. The position oversees a wide range of programs that support undergraduate teaching and learning across the campus. The responsibilities, while broader than my responsibilities as Assistant Dean of Academic Programs, had a similar focus. The campus level position provides administrative support and leadership for curriculum (General Education, Undergraduate Curriculum Committee), teaching and advising improvement, and student success.

At the end of my second year, my three year appointment was converted to an ongoing appointment.

Dossier – James N. Spain

Highlights of Work Accomplished

In the first year, I formed a task force to complete an assessment of the teaching and learning environment at Mizzou. Led by Dr. Mel George, President Emeritus of the University of Missouri System, the task force identified several critical concerns.

First and foremost, the feedback indicated that the ‘public message about teaching and learning was broken’. Funding was secured to fund two new positions. A web communications position was developed to support and serve central undergraduate teaching and learning programs. The position reports to the Vice Provost Office, but is embedded as a member of the campus Web Communications team. The second position was a senior information specialist. This new team member creates stories that highlight teaching and learning. We have also **developed and implemented a strategic communication plan for undergraduate teaching and learning programs.** In addition, the Endeavors magazine (<http://undergraduatestudies.missouri.edu/endeavors/>) was created to highlight feature stories of exceptional accomplishments of our students and faculty.

The task force also identified a concern about the quality of the classrooms. Working with Campus Facilities and the Office of Space Planning, a faculty survey was developed to collect feedback from faculty. ‘Listening tours’ were created with award winning teachers invited to visit and evaluate a range of generally scheduled classrooms. **We addressed concerns about classrooms that were identified by faculty and staff.** We also regularly gather faculty feedback on classrooms

The task force report highlighted concerns about the General Education architecture. I worked with leaders of Faculty Council to complete a review of General Education. The ad hoc faculty committee completed the review. **Modifications to General Education were recommended to Faculty Council that have been approved and implemented.**

Interactions and discussions with other stakeholder groups also identified significant concerns related to undergraduate programs.

Undergraduate Academic Advising was identified as a significant concern.

Several Academic Advisors had caseloads that exceeded 700 students per advisor. There was a high turnover rate among academic advisors attributed to the excessive workload and low/stagnant pay. Working with campus HR, a market analysis was completed. The analysis concluded that our academic advisors’ compensation was \$3,500 below market averages. In response to this information, **we added eight academic advising positions and made a market adjustment of the salaries.**

Dossier – James N. Spain

Salary adjustments were made based on merit and the salary increases averaged over \$3,500.

A task force was established and charged to develop an assessment plan for academic advising. The group worked closely with NACADA. Two MU faculty with scholarly expertise in the area of counseling, higher education teaching and advising and assessment were invited to serve as research consultants on this project. **A survey instrument was developed and is now being used to evaluate advising across the academic units. The feedback has also been used to develop professional development programming for professional academic advisors.** I now sponsor Academic Advisors' Forum's annual professional development conference. I also **provide financial support so academic advisors can attend NACADA meetings** (state, regional and national meetings).

The MU Career Services Council represents the different offices that support career planning and place programs across the academic units. The Council proposed our campus create an Employers Summit. The format was structured as a 'reverse career fair' and allowed recruiters and other company executives to participate in professional development activities. The company representatives were introduced to academic programs they do not normally interact with during their recruitment visits. **The MU Career Services Council hosted Three Employer Summits.**

Student success has been a major focus of my work as Vice Provost for Undergraduate Studies. In 2009, a summary of "early exiters" was developed. We learned from the summary how many students were leaving MU before they graduated. The analysis provided us with information that included when they left MU, what their major was as a FTC at MU, how academic preparation impacted their success. In addition, the data included academic actions (academic probation, dismissal, no academic actions affecting their status). These data identified issues with pre-major advising and admissions of "pre-majors" (pre-business, pre-nursing, pre-journalism, pre-engineering) into the upper division programs. **We addressed the areas by realigning academic advising. We also supported the creation of alternative majors (Health Professions, Sport Management, Sport Venue Management, Digital Storytelling) that were well received alternatives and also were attractive to potential students being recruited to Mizzou. My office sponsored research that took the analysis beyond "who was leaving MU when" to include "why were these students leaving MU before they graduated".**

We have continued to access and evaluate data of students leaving MU before graduating. Our extensive efforts to students leaving MU before completing their degrees led to the formation of the **Commission for Student Success**. The Commission was co-sponsored by my office and the Vice Chancellor for Student Affairs

Dossier – James N. Spain

and the Vice Provost for Enrollment Management. The Commission grew to more than 60 members as faculty and staff across the campus asked to join the work.

The Commission was organized around subgroups and worked on the factors identified in the research as key factors related to student success. Academic advising was identified as a key factor related to success. The Advising subgroup identified ease of scheduling and quality of advising as key. **MU Connect system (Starfish is the commercial company providing the computer platform) has been launched and allows online scheduling and tracking of students. The MU Connect system also includes an Early Alert system, a solution that was recommended by the Academic Success working group.**

In addition to an Early Alert system, the Academic Success group also suggested expanded tutoring. **The Learning Center increased support available to students referred by Academic Retention Services, Disability Services Office and the Student Veterans Center. In addition, the Learning Center is piloting an online tutoring service (Net Tutor) to provide 24 hour - 7 days a week access to online tutors.** Tutors have targeted the gateway general education courses.

The Student Finances subgroup was very important. Students leaving MU without their degree report that finances is the number reason they are unable to continue. **Financial Aid has redesigned award letters** to improve clarity of the costs of attendance families are responsible after all aid has been used. A Financial Wellness Summit was convened in February 2016 as professional development program for student service professionals.

The Student Health subgroup evaluated both physical and mental health aspects. The recommendations focused on mental health and mental wellness. Mental Health First Aid initiative was implemented for faculty and staff, focusing on groups that work directly with students. **We have trained more than 1,000 faculty, staff and students in Mental Health First Aid.** Student Health also developed courses on Mindfulness, available to students working to manage stress and anxiety.

The Career subgroup focused on addressing students in transition from their intended major to an alternative major. The group noted that many students see their new major as “Option B”, an option that is seen as less positive than their Option A. The use of **Strengths Quest and positive psychology approach was adopted. Residential Life, Student Affairs, Academic Advising and Career Center staff have been trained with Strengths Quest.**

Dossier – James N. Spain

Current Initiatives

A long range recommendation from the Task Force chaired by Dr. George directed the campus to **create a Center for Teaching and Learning** to replace the Program for Excellence in Teaching (a program that was discontinued due to lack of funding). The recommendation was included in the 2020 Strategic Plan adopted by the campus. In partnership with the Graduate School Dean, a study was commissioned and funded to evaluate the work our faculty were doing related to teaching and advising, both graduate and undergraduate. The research also identified key needs for professional development. A survey was developed by the Assessment Resource Center to collect faculty input on priority program needs to support their teaching and advising. **A plan has been developed and delivered to Chancellor's Office.**

A new state statute requires Missouri's public community colleges and universities to report job placement. I worked with the Office of Institutional Research, Graduate Studies Office and Career Council to develop a survey tool that meets national standards, addresses state mandate and also provides the campus with useful data that can be used to improve career services. **Survey was piloted in December 2014 and fully deployed for spring 2015 graduates.** The effort was not achieving success necessary for MU to meet reporting requirements being established by MDHE. A vended platform (GradLeaders) was identified and was successfully deployed in December 2016.

Student success metrics are included in the MU Strategic Operating Plan and are major factors in Performance Funding Metrics established by the Missouri Department of Higher Education. **Our goal is to increase freshman retention to 90% and 6 year graduation rate to 75%. We are also working to decrease time to degree and expect the difference between 4 and 6 year to decrease.** We will also be monitoring student loan debt and expect it to remain flat or decrease as we decrease the time to degree

The Transfer Student subgroup of the Commission for Student Success recommended a Transfer Student Office be established. **A Transfer Student Office is being developed. Staff member is being recruited and will be assigned responsibility to develop the concept.**

Programs

As Vice Provost for Undergraduate Studies, I work with twelve programs. The responsibilities **focus on supporting high impact practices and enhancing student engagement and success.** This work involves program development and oversight, collaborations with other campus level administrators, and initiatives in support of the academic schools and departments. The work involves partnerships with a broad range of affiliated groups including the Mizzou Alumni Association, Faculty Council, Graduate

Dossier – James N. Spain

Faculty Senate, Missouri Student Association (student government), and Intercollegiate Athletics.

Eight of the programs have experienced a change in leadership due to retirements or decisions of personnel to leave MU for other positions. We have been very successful in filling these very important leadership positions. **Each program has now undergone an internal or external review.** The programs will be on a 5 to 7 year review schedule. **Directors have been asked to develop faculty advisory committees for each office. The advisory committees are using the program review reports to support development of strategic plans.** Strategic plans are to align program goals with the goals of the campus's strategic operating plan.

We have developed an effective resource management plan for the undergraduate programs. Budget planning has been guided by campus parameters and priorities. Internal reallocation has been accomplished based on priorities and impact on teaching and student success. I currently have more than 160 fulltime and over 40 part time employees in the undergraduate programs. The programs also employ over 750 undergraduate students and 70 graduate students.

Programmatic and associated special initiative highlights are outlined below.

Educational Technologies @ Missouri (ET@MO)

This program provides support for faculty implementing and using technology to advance effective pedagogy utilizing technology. **The Mizzou Faculty eMentors were created to support professional development of faculty. Academic Technology Liaisons were created.** The ATLS are positions embedded in schools/divisions to provide faculty with "local" support of teaching with technology. In July, 2012, ET@MO absorbed all of the course designers from Mizzou Online making it easier for faculty to reach the support staff for assistance. ET@MO continues to support the successful expansion of educational technologies including Lecture Capture (Tegrity), Blackboard Mobile and student response systems (clickers). ET@MO leads Course Redesign, a program launched in 2011. Thirteen courses have been redesigned and launched, affecting more than 13,000 enrollments per academic year. **ET@MO has been heavily involved in the current transition to a new learning management system as the campus converts from Blackboard to Canvas.**

Campus Writing Program

MU's Campus Writing Program was one of the first programs in the country to embrace writing across the curriculum. The program is guided by the Campus Writing Board. The program approves Writing Intensive (WI) designation for courses. Faculty are required to participate in the CWP workshops **The CWP Board created awards that recognize exemplar WI courses and faculty teaching with writing. The CWP has**

Dossier – James N. Spain

also created faculty development awards to financially support faculty who are developing or redesigning WI courses. Every student at MU must complete two WI courses. The CWP Board has also developed a new funding model to control the costs associated with supporting WI courses. The new model creates a more sustainable approach to providing funds for TA's for faculty teaching WI courses.

Honors College

The Honors College serves more than 2,000 of MU's highest ability students. The Honors College Council was developed to include faculty from diverse disciplines. **The Honors College Council has developed a strategic plan. The Council has also redeveloped the curriculum to include high include high impact practices.** In addition, the Honors College has developed Honors Tutorials allowing 3 to 5 students to work with senior faculty and administrators on special readings.

Multicultural Certificate Program (MCC)

This academic credential is awarded by the College of Arts and Science. In 2008, the administrative oversight for the program was shifted to my office. The program leader requested funding to support student ambassadors and marketing materials. During the past five years, the students have led a grassroots campaign tied to the One Mizzou initiative and learning outcomes focused on inclusion and social justice. **The number of students completing the Multicultural Certificate has increased from fewer than 50 to more than 700 per academic year. More students earn this credential than any other minor or certificate at Mizzou.**

Service Learning

This program has continued to increase serving more students (14,000+) per year. The Service Learning courses are offered through academic departments, embedding the service experience to contribute to course learning outcomes. **In 2011, international service opportunities were developed to expand the scope of experiences available to our students. Civic Leaders Internship Program (CLIP) is the largest internship program serving state government offices in Missouri. The CLIP program has been expanded by adding local government internships (city and county governments). In addition, federal government internship program is being added to provide all members of the MO delegation with a student intern.** Service Learning administers the Peace Corp Prep program for the campus.

Office of Undergraduate Research

The Office of Undergraduate Research (OUR) completed an internal review in 2013. **A Faculty Advisory Board was formed** and incorporated faculty representing disciplines in science (physical and biological sciences), social science, behavioral science, humanities and fine arts. **The Advisory Board developed a strategic plan for Undergraduate Research at MU. The Office sponsors the Spring Undergraduate**

Dossier – James N. Spain

Research Forum, an event that includes more than 350 research posters. The program also sponsors students to present undergraduate research posters in the Missouri State Capital in Jefferson City, MO and Posters on the Hill in Washington, D.C. **The OUR worked with the Honors College to create a Visual Arts and Design Showcase to celebrate undergraduate art in a juried art show.**

Fellowships Office

This office works with students with records of academic excellence and significant accomplishments in preparing applications for competitive scholarships/fellowships (Churchill, Goldwater, Fulbright, Marshall, Mitchell, Rhodes, Truman). **The director has worked with the advisory committee to develop a strategic plan. The plan emphasizes developing relationships with the students during their freshmen and sophomore years. By working with these students, appropriate activities can be completed prior to applying to the highly competitive programs.**

Learning Center

The Learning Center provides academic assistance in the form of one-on-one tutoring, small group tutoring and exam review. The Learning Center houses the Writing Center as well as the Online Writery. The Center works with more than 10,000 unique students across all of the programs each year. **The Writing Center has established a partnership with the Library that places writing tutors in the Information Commons convenient for referrals by reference librarians. The Learning Center is leading efforts to incorporate online tutoring using a commercial provider (NetTutor).**

Career Center

The MU Career Center services the campus as a support service that fills gaps for students with no access to career services. **The MU Career Center provides campus wide support for the online placement services platform: HireMizzouTigers.com. The Center has also led the adoption of Strengths Quest as an assessment tool for career counseling.** The Career Center also supports the Peace Corp Recruitment Officer. An internal review has been completed and staff has initiated strategic planning. **The Career Center has also assumed responsibility for helping coordinate the campus wide Outcomes Survey.**

Mizzou Online

In December 2010, I was assigned responsibility to reorganize the online distance education programs. The programs were transferred from University Extension and I began serving as interim Vice Provost for eLearning. We merged two different departments and added a marketing group. A faculty committee was formed to address concerns about online distance teaching.

Dossier – James N. Spain

One of the first changes associated with the reorganization was the transfer of the MU High School to the College of Education. In addition, all course designers and educational technologists were transferred to ET@MO. This consolidated campus resources of educational technologists and instructional designers in one office. This change created a “one-stop shop” for faculty seeking assistance with educational technology, course design and course redesign.

The reorganization involved creating a comprehensive financial plan for the new administrative unit, Mizzou Online. The business plan for Mizzou Online was designed as a self-supporting auxiliary unit. **The tuition revenue share model was changed to increase the portion distributed to academic departments.** The restructuring also focused on fully integrating processes for online distance students with processes used for on campus students. **A program development plan was launched. The plan included a commitment of \$10 million to support conversion of existing on campus programs to online delivery platform.**

During the last five years, Mizzou Online has seen an increase of 100% in the number of students, the number of enrollments and the student credit hours generated. We have developed a memorandum of cooperation with Missouri’s public community colleges.

Mizzou Online is also working on new initiatives to further advance the number of students served via distance education. ***The work Mizzou Online was recognized with the 2014 Strategic Innovation in Online Education Award by UPCEA, the highest distinction and honor awarded by UPCEA.***

Academic Support Center

In December 2013, I was assigned responsibilities for Academic Support Center. This group is responsible for installation, maintenance and repair of information technology in all centrally scheduled classrooms on campus. The Center also operates and maintains the tele-classrooms that are used for remote delivery of the Doctorate of Pharmacy by the University of Missouri – Kansas City to students at Mizzou. ASC also provides support for Film Studies and Communication students by operating viewing theaters, production studio and editing lab. All of these facilities have been renovated this year and provide cutting edge teleconferencing technology. We have developed a financial and staffing plan and operating budget for this unit.

Dossier – James N. Spain

Assistant Dean of Academic Programs

College of Agriculture, Food and Natural Resources (CAFNR)

In August, 2000, I was asked to serve in the Academic Programs office as Assistant Dean of Academic Programs. In this role, I was responsible for administrative leadership in the areas of curriculum, teaching and advising improvement, recruitment and student success (retention). Efforts in curriculum were related to new curriculum development, revision of existing curriculum and evaluation of general education requirements within CAFNR. Efforts in teaching and advising improvement involved programs designed to support faculty development. I was also given responsibility to support the efforts of CAFNR faculty and staff to improve our success in student recruitment and retention.

Curriculum Review

Review of Divisional General Education Requirements of (CAFNR)

- Reviewed and revised Communication Requirements
- Reviewed and revised Science Requirements
- Reviewed and revised Humanities and Fine Arts Requirements

Teaching and Advising Improvement

Developed and implemented programs to help with teaching effectiveness as impacted by classroom instruction as well as academic advising and mentoring.

- Teaching Improvement Workshops
- Advisor Workshops
- Faculty Advisor Evaluation System was implemented
- Developed budget for Information Technology Fee

Student Recruitment and Retention

Student Recruitment plan was developed and implemented.

- Program development to expand student recruitment events hosted on campus by CAFNR.
- Sciences of Life @ Mizzou (SLAM) – program for high ability high school students
- Life Sciences Quest – a program in conjunction with Parkway School district designed to engage high ability minority students.
- Developed and implemented academic recovery program for at-risk students on academic probation.
- CAFNR Loan Program redesigned to improve access and use of Nance Loan Fund in support of CAFNR students.

Dossier – James N. Spain

Interim Associate Dean of Academic Programs

I served as interim Associate Dean of Academic Programs for CAFNR from August, 1999 through July, 2000. The key objectives during this appointment were to develop fiscally responsible budgeting and formalize a staffing plan.

- Developed comprehensive budget plan for the Academic Programs Office.
- Staffing and staff development was also designed to focus on the long range goals for CAFNR's academic programs.
 - Added funding for fulltime for the coordinator for CAFNR's study abroad program.
 - Hired fulltime recruiter for CAFNR.

I helped initiate a development effort with a major donor with the specific objective to raise funds for the improvement of the facilities. Based on interaction with donor, a proposal was developed and presented to the donor by Dean Tom Payne. The donor made the commitment to provide \$500,000 and those funds were invested in a complete renovation of the space. Now, the Dickenson Student Achievement Center provides exceptional quality space to support the staff's efforts. In summary, my focus as interim Associate Dean was on budget and personnel to prepare the program for transition to the fulltime associate dean.

Teaching

Teaching Philosophy

The opportunity to participate in a community of higher education is a rewarding and personally fulfilling career. In particular, the opportunity to teach and mentor undergraduate and graduate students provides an incredible sense of purpose and meaning to my work as a member of the faculty. In the roles of teacher and advisor, there is a real sense of being able to make a positive difference. The work has been and continues to be personally rewarding. The work and interaction with students has helped me recognize the need to learn more about the science and the art of teaching. This work has also motivated me to improve my ability to fulfill the responsibilities that I have accepted.

My philosophy of teaching is an evolving compilation of experiences as a student from kindergarten through the last lecture given or laboratory taught. I have borrowed and adapted the practices of those teachers and mentors that had a positive effect on me. I have added habits and practices learned by interacting with peers that students consider master teachers. More recently, I have read works focused on effective teaching and affecting learning in an effort to improve my teaching beyond my personal experiences. I also greatly benefit from the mentoring of my students who have helped me learn and practice the art of teaching. From these sources, I have developed my philosophy of teaching.

Dossier – James N. Spain

I have continued to participate in a number of teaching improvement activities and workshops. These experiences have instilled a sense of community – a community dedicated to helping students learn and think, question and grow, as well as struggle and while struggling develop new perspectives from the struggle. In his speech book of selected speeches, Ernest Boyer cited the 1995 Carnegie Foundation report *The Basic School: A Community for Learning* as he described the four qualities found in a successful learning community. These qualities include a sense of community among the teachers and the students, a coherent and interdisciplinary curriculum, an active and creative climate, and a community of solid character that involves moral and ethical lessons. As a teacher, I work to connect with the community in these ways in order to help construct the necessary infrastructure in which the most powerful learning can occur. It is important for teacher and learner to understand the benefit of belonging to this broader academic community. As a teacher, this sense of community constructed through the general education architecture, teaching workshops and other scholarly activities of the academy provides a sense of belonging and support. As a teacher, I have relied heavily on an excellent reference to guide my development as a teaching scholar in the College of Agriculture, Food, and Natural Resources and at MU. The text is Powerful Learning by Ron Brandt. The author describes the characteristics of how students learn and what organizations of learning do to help their students achieve powerful learning. With very little formal training as a teacher, I have relied on this resource to help me stay focused on the qualities and practices associated with effective and successful teachers.

People learn things important to them and build on current or pre-existing knowledge. During lecture, discussions, or one-on-one interactions with the students, I strive to use real world examples and scenarios. In all of the classes I am currently teaching, I am using case studies and real world scenarios to help the students learn through the application of the course material. The problems are varied and allow students to work together in small groups as well as independently. The students' performance has improved on the take home problems and exams. The ability to assess problems has also become better developed during this time as well. In working outside of class on problems and case studies, students learn how to use basic information from several classes. Indeed as the students work to solve the problems they also develop problem-solving strategies. This ability is a life long benefit that the students can use in professional and personal situations requiring critical thinking and problem-solving skills.

Collaborative research conducted with colleagues on learning styles has impacted my teaching philosophy. Within the classroom, the diversity of learning styles can affect learning if I do not make adjustments to accommodate these differences. I have added more structure to the class while providing flexibility in how students can select and complete assignments. This strategy is designed to allow students that prefer to learn through group work to complete "learning" assignments outside of class in self-formed learning groups. The more independent learners can still work alone

Dossier – James N. Spain

and successfully learn the material without the pressure of participating in the social interaction of learning groups. I have found this important in helping first-time college students in making the transition to college level learning. It is still important to help students develop comfort in learning in different settings. I use short in-class small group problem solving discussion as a first step in helping independent learners with collaborative learning. In designing learning assignments and assessment strategies, I consciously work to accommodate the differences in how students prefer to learn. I expect students to work hard in class and outside of class. During my interaction with former and current students, they have provided positive feedback and reinforcement in the importance of maintaining these high expectations. In some ways, it seems holding students to higher expectations builds their self-confidence. As they work harder and become successful, they develop a strong sense of “I can do this.” A large animal nutrition company has also helped me maintain my level of expectations of all of the students in my classes. This company maintains as one of its operational guidelines that the *least you expect of one student (employee) is the most that you can expect from another student (employee)*. This principle has helped me realize the “cost” of being too lenient. What could actually happen is a cost to all of the students that did not meet expectations with special concessions of deadline, format, or completeness. In short, I have become stricter in enforcing class policy on assignments. The key to this aspect of successful classroom management is to clearly define expectations. This leads to the personal component and, to me, the most critical ingredient of successful teaching and mentoring. I genuinely care about the students. I try to establish a relationship built on trust and mutual respect. This is accomplished, in part, by carefully communicating to the students that my goal is to help them learn the material contained in the course or portion of the course I teach. In establishing this rapport, there are several ways I try to achieve a positive relationship with students. First, I use jokes and humor to “humanize” me as a professor so students realize I am approachable. I try to learn names of students and personalize the discussions in class by associating unique aspects of a lecture with the local communities and hometowns of the students in class. I share ownership of the class with the students. I encourage active participation of all of the students during the class, including asking questions and sharing comments. In addition, I make time to interact with students outside of class. This may occur in my role as an undergraduate advisor, faculty advisor for a Freshman Interest Group, or just by visiting with the students as we have opportunities in class, around the building, on campus and around the general community.

I also provide my students with learning objectives for each course I teach. The learning objectives are designed to help the students focus on the important material. It also helps in establishing a trusting relationship as the students understand I am not trying to trick them but help them. We do not always get through all of the material. Instead, I pace the course to allow for discussion about material and case studies the

Dossier – James N. Spain

class discusses together. This approach helps me assess their understanding and allows me to review points that are not fully understood by the students.

The students really value the clear expectations that the learning objectives provide. In addition to learning objectives, I make old exams available on the course web page so students can understand how I will ask them to explain information to me as we assess their understanding of the material. In an effort to help focus the purpose of exams, I have taken to calling tests, exams and quizzes by a generic term, learning assessment exercises. I joke with the class that since giving exams can create test anxiety, we will complete a learning assessment. While this might seem trivial, the students understand that the focus is really on their learning and understanding. The teaching practice that I try to always take into every class is enthusiasm. The students realize the material is important if they are able to recognize that I think it is important. More than that, if the students understand I think it is important that they learn the material, they are much more committed to making a sincere effort to learn and understand the material. I am passionate about the material I share with my students. I try to stimulate the students and have them become excited about the subject. One measure of success is the number of students that communicate to me their interest in considering a future career based on excitement and interest they developed while in my class.

In summary, I place great value on my role as a teacher and mentor. I set high expectations for myself, and my students. In order to have the students accept the challenge, they must be confident I have their best interest in mind. I establish this rapport using humor, learning names, and personalizing examples. The lectures, notes, and exams are designed to be straightforward and fair, with well-defined learning objectives and expectations. The courses also utilize learning exercises to help students develop critical-thinking skills that can be applied to solving a broad array of problems. I can think of no better way to contribute to society than to help my students learn and grow as learners.

Teaching Responsibilities

My teaching responsibilities have included mostly undergraduate courses focusing on nutritional and dairy sciences. Several of the courses have been team taught which allows me to collaborate with colleagues with unique subject matter expertise. The courses have primarily been at the freshman and sophomore level of the Animal Sciences curriculum during the last ten years. Three of the courses (Animal Science 1011, 1065, and 2165) are required of all animal science majors but also serves a significant number of other majors in CAFNR (including Agricultural Economics, Agricultural Education, Agricultural Journalism, and Agricultural Systems Management).

Dossier – James N. Spain

I have also contributed to the teaching mission of the Animal Sciences Division through academic advising. I currently advise 20 students majoring in Animal Sciences. The advising focuses on communicating the academic requirements associated with the Animal Sciences degree as well as guiding students when they consider alternative career options.

Dossier – James N. Spain

Courses Taught (current)

Animal Science 2111 – Sophomore Seminar: Societal Issues Facing Animal Agriculture (1996 to present).

Sophomore level course that is required of all Animal Science majors and was developed to fulfill the campus general education requirement. The overall objective of the course is to have students develop their abilities related to information literacy and critical analysis of different sources of information. Assignments focus on reading current publications associated with issues affecting animal agriculture and include topics such as: animal rights – animal welfare; corporate farms – family farm – sustainable agriculture; food safety – BSE – biotechnology – antibiotic resistance; animal waste – nutrient management. Students identify core issues and the stakeholders for each issue. Invited speakers present opposing points of view to allow students to develop an appreciation for the complex opinions held by society. This course is a writing intensive course and requires freshman English and sophomore standing as pre-requisites. A significant research paper is required and involves two revisions and peer editing.

Current Student Evaluations Animal Science 2111 – Sophomore Seminar: Societal Issues Facing Animal Agriculture

(Average for last five years)

-As a discussion leader	4.9
-As a contributor to discussion	4.9
-Enthusiasm	5.0
-Encouragement to students to express themselves	4.8
-Openness to student's views	4.8
-Interest in whether students learned	4.7
Overall effectiveness	4.6

Animal Science 2165 – Ruminant Production (1996 to 2015)

This sophomore level course introduces students to the principles of dairy cattle, beef cattle and small ruminant management. I developed the dairy section of this course and now teach the last five weeks of the fall semester. This course focuses on the key fundamentals of management systems involving milk marketing and dairy cattle management. Animal management focuses on the areas of systems for the growth and development of calves and heifers, reproductive management, breeding and genetic systems, DHIA production records, milk quality, mammary gland health, and milking management, nutritional management systems. The course has reached an average enrollment of 180 students.

Dossier – James N. Spain

Current Student Evaluations Animal Science 2165 – Ruminant Production

Dairy section only (15 lectures, 1 exam)	(Average for last five years)
-Organization and preparedness	4.6
-Ability to present alternative explanations	4.5
-Enthusiasm	4.8
-Knowledge	4.8
-Openness to student's views	4.8
-Interest in whether students learned	4.3
Overall effectiveness	4.6

Courses Taught (previous)

Agriculture 1115 – Foundations for College Success (2000 to 2007).

Animal Science 1011 - Introduction to Animal Science (1994 to 2007).

Animal Science 1065 – Laboratory Practicum (1990 to 2007).

Animal Science Topics/Problems - Dairy Management Decisions (Two Semesters)

Graduate Topics in Animal Science: Lipid Digestion and Metabolism in Ruminants

Teaching Awards

Golden Apple Award for Excellence in Teaching, College of Agriculture, Food and Natural Resources, 2007

Governor's Award for Excellence in Teaching in Higher Education, University of Missouri – Columbia, 2002

Kemper Teaching Fellow, University of Missouri, 2001

Young Animal Science Leader, Outstanding Teacher Award
Midwestern Section, American Dairy Science Association, 1999

Outstanding Teaching Award, Ag Student Council, University of Missouri, 1999

Green Chalk Award, MU Student Life - University of Missouri, 1996

Provost's Award for Creative Extension Programming by New Faculty
University of Missouri, 1993

Outstanding Graduate Teaching Assistant, Department of Dairy Science, Virginia Polytechnic Institute and State University, 1989

Dossier – James N. Spain

Undergraduate Advising

I currently serve as academic advisor for undergraduate students in Animal Science unit and have advised on average 15 to 20 undergraduate students over the past five years.

Advising Awards

Purdy Award for Excellence in Student Services, College of Agriculture, Food and Natural Resources, 2006

Excellence in Advising Award, Mizzou Advisor's Forum, 2000

Outstanding Advisor, Ag Student Council University of Missouri, 1996

Outstanding Undergraduate Advisor, College of Agriculture, Food, and Natural Resources Student Council, 1993

Curriculum Development

Captive Wild Animal Management Minor

I worked in cooperation with the faculty in Fisheries and Wildlife Sciences and Animal Sciences to develop a minor that bridges the two undergraduate programs. Industry leaders were involved in the development of the learning outcomes, and faculty selected courses across the two departments to satisfy key learning objectives. Two new courses were proposed.

Sustainable Agriculture – Emphasis Area in General Agriculture and Minor

I served as a member of an organizing committee that developed a novel program in Sustainable Agriculture. This emphasis area is part of the general studies degree program administered in the College of Agriculture, Food and Natural Resources. The development was funded by a USDA grant and involved a multidisciplinary team representing animal sciences, agricultural education, agricultural economics, plant sciences, and rural sociology.

Other Activities in Support of Teaching and Undergraduate Students

Freshman Interest Group Co-Facilitator (1994 to present)

I work with a Peer Advisor serving as the co-facilitator for a Freshman Interest Group (FIGs).

Dossier – James N. Spain

Summer Welcome Professor Perspective Lecture (1999 to present)

Presented an invited lecture to new students and their parents on tips and keys to making a successful transition to MU.

CAFNR Divisional Orientation for Summer Welcome (1999 to 2007) Represented the College of Agriculture, Food and Natural Resources during an orientation session presented to incoming freshmen joining a major in the College.

Pre-Vet and Agriculture Learning Community Team (1994 to 2007)

I worked with representatives of residential life, Peer Advisors in Pre-vet and Careers in Ag Freshman Interest Groups to plan activities to benefit a broader group of students in the learning communities that share living and learning space in residential hall.

Undergraduate Research Internship Advisor (1992 to 2007)

I have mentored eight undergraduates in formal undergraduate research internships. These interns were funded by the McNair's Scholars program for first generation and minority students (campus); Undergraduate Research Opportunities in Life Sciences (LSUROP, campus); CAFNR on-campus research internship (divisional); Miller Fund Undergraduate Research Internship (departmental); Stark Undergraduate Research Scholars (departmental); MU EXPRESS program for underrepresented minority students; grants and industrial gifts.

Graduate Student Training

Major Professor

<u>Student Name</u>	<u>Degree</u>	<u>Completion Date</u>
William Chamberlin	Master of Science	June 2011
Roxanne Kutz	Master of Science	May 2009
Tim Hackmann	Master of Science	December 2008
Julie Sampson	Master of Science	Withdrew
Duranee Srichana	Doctorate	May 2006
Reagan Vogel	Master of Science	December 2006
James Kennemer	Master of Science	Withdrew
Wendy Scheer	Master of Science	May 2003
Amy Mowrey	Doctorate	December 2000
Kevin Spurlin	Master of Science	May 2001
Darryl Chatman	Master of Science	December 2001
John Underwood	Master of Science	December 1998
Maria Costas	Master of Science	December 1997
Amy Mowrey	Master of Science	December 1996
Dr. Craig Jones, DVM	Master of Science	May 1995
Arturo Di Costonza	Master of Science	December 1994
H. Gale Bateman	Master of Science	December 1993

Dossier – James N. Spain

Graduate Committee Member

Listing students completing in the last ten years. Total graduate committees totaled 19.

<u>Student Name</u>	<u>Degree</u>	<u>Department</u>	<u>Completion Date</u>
Pam Adkins	Doctorate	Veterinary Bioscience	May 2017
Kenton J. Hoernig	Master	Veterinary Bioscience	December 2013
Amy Mounce	Doctorate	Agricultural Education	May 2008
Jason Scales	Doctorate	Agricultural Education	May, 2008
Bryan Maggard	Doctorate	Education Leadership & Policy	August, 2007
Shane Robinson	Doctorate	Agricultural Education	May 2006
Sarah Kolath	Master	Animal Science	December 2004

Service to Teaching Profession

Celebration of Teaching (2009-present)

Worked with faculty and staff to develop an annual conference on Teaching and Learning. Day one involves preconference workshops followed by the keynote address. Day two features breakout sessions that focus on high priority topics identified by faculty.

Teaching Improvement Workshops for CAFNR Faculty (1999-2007) Coordinated the planning and implementation of an annual workshop designed to improve the teaching effectiveness of faculty in CAFNR. Faculty from the College of Veterinary Medicine, College of Arts and Sciences and the College of Human Environmental Sciences have also participated.

Peer Review of Teaching

I have peer reviewed the teaching of the following faculty in CAFNR:

Dr. Bryan Garton (Agriculture Education), Dr. Josh Millspaugh (Fisheries and Wildlife), Dr. Harvey James (Agriculture Economics), Dr. Rose-Marie Muzika (Forestry), Dr. Virginia Peterson (Biochemistry), Dr. Shari Freyermuth (Biochemistry)

Dossier – James N. Spain

Invited Presentations on Teaching

Spain, J.N. 2007. Thinking outside the box: Incorporating experiential and inquirybased learning opportunities. Shaping Animal Science Curricula for 2020 – A Symposium at the National Meetings of the American Society of Animal Sciences and the American Dairy Science Association. San Antonio, Texas

Spain, J.N. 2003. Getting Engaged – Teaching and Learning in the Large Lecture Conversations about College Science Teaching – MU

Spain, J.N. Panelist – Extracurricular Advising in Animal Science
National American Society of Animal Science annual meeting - July, 2000

Spain, J.N. Effective College Teaching
College Teaching Seminar for New Teaching Assistants and Graduate Students
Sponsored by the MU Program for Excellence in Teaching - August, 1999

Publications on Teaching

Peer Reviewed Articles

Garton, B.L., **J.N. Spain**, W. R. Lamberson and D.E. Spiers. 1999. Learning Styles, Teaching Performance, and Student Achievement: A Relational Study. *J. Ag. Educ.* 40(3):11-20.

Publications on Teaching (continued)

Abstracts

Spain, J.N. 2007. Thinking outside the box: Incorporating innovative experiential and inquiry based learning opportunities. *J. Dairy Sci.* 90(Suppl. 1):413.

Spain, J. N., and G. W. Jesse. 2006. Teaching societal issues facing animal agriculture: A writing intensive course for sophomores. *J. Dairy Sci.* 89(Suppl. 1):138.

Garton, B.L., **J.N. Spain**, W.E. Trout, D.E. Spiers and W.R. Lamberson, 1998. The relationship between students' learning styles and teaching performance in an introductory animal science course. *J. Dairy Sci.* 80(Suppl.1):369.

Spain, J.N. 1993. Communicating new concepts in nutrition and management through continuing educational program. *J. Dairy Sci.* 76 (Suppl. 1).

Morrow, R.E., J. Garrett, J. Garrish, D. Lalman, F. Martz, R. Miles, K. Moore, M. Ropp, **J. Spain**, J. Terrill, M. Townsend, B. Wood, and J. Whittier. 1993. Teaching beef production and management as a capstone course. *J. Anim. Sci.* (Suppl.1).

Dossier – James N. Spain

Service in Support of Teaching and Learning

Ad hoc Reviewer 2004

USDA Education in International Agriculture
Competitive Grants Program

Advisory Committee 2001 to 2007

Life Sciences Undergraduate Research Internship Opportunities
University of Missouri - Columbia

International Programs Committee 2000 to 2006
College of Agriculture, Food and Natural Resources

Learning Improvement Committee 2001 to 2007
College of Agriculture, Food and Natural Resources

Academic Affairs Committee 1999 to 2007
Animal Sciences Unit

Teaching Committee
American Society of Animal Science 1995 - 1997

Research

I have conducted applied and basic research in the dairy cattle nutrition and management. The research can be described as problem solving research that is directed towards answering questions related to factors that limit the efficiency and long term sustainability of the dairy industry. One priority was improved efficiency. The other research priorities included interdisciplinary collaborations with reproductive physiologists, environmental physiologists and veterinarians.

I. Interaction of Nutrients in Diets of Lactating Dairy Cattle.

The objectives of research activities in this area were to evaluate interactions of nutrient levels and sources on milk production by dairy cattle.

II. Effect of Nutrition and Environment on Animal Health and Production. *The objectives of this research were to compare nutritional management strategies with other management practices to minimize disease and reduce the effects of heat stress.*

III. Interactions of Nutritional Status and Reproductive Performance. *The objectives of this research were to identify the impact on periparturient nutrition on reproductive function of the high producing dairy cow.*

Preliminary Invention Disclosure:

Dossier – James N. Spain

OTSP Disclosure Number:02UMC065

Filed June, 2002

Title: Novel Proximity Sensors for non-invasive real time monitoring of cattle body temperature.

Investigators: Grant, Haidekker, Spain, Spiers

Copyright of Original Concept

The 100 Day Contract

A Trademark of Pfizer Animal Health

<http://www.100daycontract.com/>

Scholarly Activities in Support of Research

Section Editor, Nutrition

Journal of Dairy Science

September 2006 to 2012

American Dairy Science Association

Ad hoc Reviewer

Dairy Farmers of Canada Research Proposal Review

Production Executive Scientific Advisory Committee, 2004, 2005, 2006.

Peer review Panelist

USDA National Research Incentive Competitive Grants Program June, 1999.

Ad hoc Reviewer (January 1990 to present)

Journal of Dairy Science, American Dairy Science Association

Invited Presentations at Scientific Meetings:

Spain, J.N. and D. E. Spiers. 2007. Feeding programs that meet the challenges of heat stress. American Dairy Science Association Production Division Symposium at the National Meetings of the American Society of Animal Sciences and the American Dairy Science Association. San Antonio, Texas.

Spain, James N. 2007. The role of vitamins and minerals in reproductive function of lactating dairy cows. MidAtlantic Animal Nutrition Conference. Baltimore Maryland. March, 2007.

Spain, James N. 2004. Transition Cow Nutrition and Mastitis – Balancing All the Factors. Presented at the 43rd National Mastitis Council Annual Meeting, Charlotte, NC. February 4, 2004.

Spain, J. 2004. Invited Paper. Insights into thermal stress – factors influencing thermal balance and the animal's response. Presented at the 37th Midwestern Sectional Scientific Meetings of the American Dairy Science Association.

Dossier – James N. Spain

Spain, J.N., M. Lucy, and D. Spiers. 2002. The effects of environmental stress on the performance of dairy cattle. Presented as part of a Symposia on Heat Stress in U.S. Livestock at the National Meetings of the American Dairy Science Association.

Spain, J.N. 1994. Total Mixed Rations Feeding Systems for Commercial Dairy Farms. Presented at the 27th Midwestern Sectional Scientific Meetings of the American Dairy Science Association.

Refereed Journal Articles

Reporting articles published since 1999 – 32 total peer reviewed articles published.

Chamberlin, W.G., J.R. Middleton, J.N. Spain, G.C. Johnson, M.R. Ellersieck, and P. Pithua. 2013. Subclinical hypocalcemia, plasma biochemical parameters, lipid metabolism, postpartum disease, and fertility in postparturient dairy cows. *J. Dairy Sci.* 96(11):7001-7013.

Garverick, H.A., M.N. Harris, R. Vogel-Bluel, J.D. Sampson, J. Bader, W.R. Lamberson, J.N. Spain, M.C. Lucy, and R.S. Youngquist. 2013. Concentrations of nonesterified fatty acids and glucose in blood of periparturient dairy cows are indicative of pregnancy success at first insemination. *J. Dairy Sci.* 96(1):181-188.

Hackmann, T.J., J.D. Sampson, and J.N. Spain. 2010. Variability in in situ ruminal degradation parameters causes imprecision in estimated ruminal digestibility. *J. Dairy Sci.* 93(3):1074-1085.

Hackmann, T.J. and J.N. Spain. 2010. **Invited review:** Ruminant ecology and evolution: Perspectives useful to ruminant livestock research and production. *J. Dairy Sci.* 93(4):1320-1334.

Hackmann, T.J. and J.N. Spain. 2010. A mechanistic model for predicting intake of forage diets by ruminants. *J. Anim. Sci.* 88(3): 1108-1124.

Hackmann, T.J., J.D. Sampson, and J.N. Spain. 2010. Using ytterbium-labeled forage to investigate particle flow kinetics across sites in the bovine reticulorumen. *Animal Feed Science and Techn.* 157 (1-2):1-12.

Srichana, D., M. S. Kerley, and J. N. Spain. 2009. Effect of Monensin Supplement during Transition Phase on Rumen Fermentation and Microbial Efficiency. *Thammasat Int. J. Sc. Tech.* 14(4):69-81.

Dossier – James N. Spain

Srichana, D., G.E. Rottinghaus, P. Srichana, J.H. Porter, M.S. Kerley, D.R. Ledoux, J.N. Spain, and M.R. Ellersieck. 2008. Effect of Fumonisin on Growth of Ruminant Bacteria in Batch Culture. *Thammasat Int. J. Sc. Tech.* 14(2):13-21.

Sampson, J.D., J.N. Spain, C. Jones, and L. Carstensen. 2009. Effects of calcium chloride and calcium sulfate in an oral bolus given as a supplement to postpartum dairy cows. *Vet. Therapy.* 10:131–139.

Kutz, R.E, J.D. Sampson, L.B. Pompeu, D.R. Ledoux, J.N. Spain, M. VázquezAñón, and G.E. Rottinghaus. 2009. Efficacy of Solis, NovasilPlus, and MTB-100 to reduce aflatoxin M1 levels in milk of early to mid-lactation dairy cows fed aflatoxin B1. *J.Dairy Sci.* 92(8):3959-3963.

Munashe Chigerwe, BVSc, PhD, DACVIM; Jeff W. Tyler, DVM, PhD, DACVIM; John R. Middleton, DVM, PhD, DACVIM; James N. Spain, PhD; Jeffrey S. Dill, DVM; Barry J. Steevens, PhD. 2008. Comparison of four methods to assess colostral IgG concentration in dairy cows. *J. American Veterinary Med. Assoc.* 233(5):761-766.

Munashe Chigerwe, BVSc, PhD; Jeff W. Tyler, DVM, PhD, MPVM; Loren G. Schultz, DVM, MS; John R. Middleton, DVM, PhD; Barry J. Steevens, PhD; James N. Spain, PhD 2008. Effect of colostrum administration by use of oroesophageal intubation on serum IgG concentrations in Holstein bull calves. *American J. of Veterinary Research.* 69(9):1158-1163.

Hackmann, T.J., J. D. Sampson and J. N. Spain. 2008. Comparing relative feed value with degradation parameters of grass and legume forages. *J. Anim. Sci.* 86(9): 2344-2356.

Settivari, R.S., J.N. Spain, M.R. Ellersieck, J.C. Byatt, R.J. Collier, and D.E. Spiers. 2007. Relationship of thermal status to productivity in heat-stressed dairy cows given recombinant bovine somatotropin. *J. Dairy Sci.* 90(3):1265-1280.

Spiers, D.E., J.N. Spain, J.D. Sampson, and R.P. Rhoads. 2004. Use of physiological parameters to predict milk yield and feed intake in heat-stressed dairy cows. *J. Therm. Biol.* 29: 759.

Al-Tamimi, H.J., G.E. Rottinghaus, D.E. Spiers, J. Spain, D. Chatman, P.E. Eichen and T.L. Carson. 2003. Thermoregulatory response of dairy cows fed ergotized barley during summer heat stress. *J. Vet Diagnostic Invest.* 15:355-360.

Suchyta, S.P., S. Suipkovsky, R. Kruska, A. Jeffers, A.McNulty, M.J. Coussens, R.J. Templeman, R.G. Halgren, P. Saama, D.E. Bauman, Y. Boisclair, J. Burton, R.

Dossier – James N. Spain

Collier, E DePeters, T. Ferris, M. Lucy, M. McGuire, J. Medrano, T. Overton, T. Smith, G. Smith, T. Sonstegard, J. Spain, D. Spiers, J. Yao, and P. Coussens. 2003. Development and testing of a high-density cDNA microarray resource for cattle. *Physiol. Genomics*. 15:158-164.

Garton, B.L., J.N. Spain, W. R. Lamberson and D.E. Spiers. 1999. Learning Styles, Teaching Performance, and Student Achievement: A Relational Study. *J. Ag. Educ.* 40(3):11-20.

Mowrey, A. and J.N. Spain. 1999. Results of a Nationwide Survey to Determine Feedstuffs Fed to Lactating Dairy Cows. *J. Dairy Sci.* 82:445-451.

Mowrey, A. and J.N. Spain. 1999. Effect of Fibrous By-products on Production and Rumens Fermentation in Lactating Dairy Cows. *J. Dairy Sci.* 82:2709-2715.

Bateman, H.G., J.N. Spain, M.S. Kerley, R.L. Belyea and R.T. Marshall. 1999. Evaluation of Ruminally Protected Methionine and Lysine or Blood Meal and Fish Meal as Protein Sources for Lactating Holsteins. *J. Dairy Sci.* 82:2115-2120.

Book Chapters

Spain, J.N., M. Lucy, D. Hardin. 2004. The Effects of Nutrition on the Reproductive Performance of Dairy Cows. In *Theriology of Domestic Animals*, Second Edition. Youngquist and Threlfall editors. (Lead author)

Spain, J.N., M. Lucy, D. Hardin. 1997. The Effects of Nutrition on the Reproductive Performance of Dairy Cows. In *Theriology of Domestic Animals*, Youngquist editor. (Lead author)

Spain, J.N. 1993. Tissue integrity: A key defense against mastitis infection. The role of zinc proteinate and a theory for mode of action. *Biotechnology in the Feed Industry*. Alltech, Inc. Nicholasville, KY.

Abstracts – Scientific Society Meetings (Regional and National)

Reporting abstracts published since 2004 – 74 total abstracts published

Spain, J.N. and D.E. Spiers. 2007. Feeding programs that meet the challenges of heat stress. *J. Dairy Sci.* 90(Suppl. 1):623.

Sampson, J.D. J.N. Spain, L. Carstensen, and C. Jones. 2007 Use of a calcium bolus to improve calcium homeostasis after calving. *J. Dairy Sci.* 90(Suppl. 1):470.

Dossier – James N. Spain

Spain, J.N., L. Parsons, R. Crawford, C. Brown, and D.E. Spiers. 2007. Thermal status of different breeds of dairy cattle exposed to summer heat stress in a grazing environment. *J. Dairy Sci.* 90(Suppl. 1):540.

Sampson, J. and J.N. Spain. 2007. Use of NutriDense corn variety for corn and corn silage in diets fed to high producing dairy cows. *J. Dairy Sci.* 90(Suppl. 1):556.

Hackmann, T.J. and J.N. Spain. 2006. A critique of RFV: Comparing RFV to degradation patterns and proposal of an alternative model. *J. Dairy Sci.* 89(Suppl. 1):86.

Srichana, D., M. S. Kerley, and J. N. Spain. 2006. Effect of monensin supplement during prepartum and transition phase on rumen fermentation and microbial efficiency. *J. Dairy Sci.* 89(Suppl. 1):100.

Martz, F., J. R. Campbell, R. Ricketts, and J. N. Spain. 2006. 100 Years of Dairy Science at the University of Missouri-Columbia. *Dairy Sci.* 89(Suppl. 1):153.

Srichana, D., G. E. Rottinghaus, P. Srichana, J. H. Porter, M., S. Kerley, and J. N. Spain. 2006. Effect of T-2 toxin on growth of ruminal bacteria in batch culture. *J. Dairy Sci.* 89(Suppl. 1):68.

Sampson, J.D., R. P. Rhoads, R. J. Tempelman, S. S. Sipkovsky, P. M. Coussens, M. C. Lucy, J. N. Spain, and D. E. Spiers. 2006. Effect of feeding whole soybeans on hepatic gene expression in lactating dairy cows. *J. Dairy Sci.* 89(Suppl. 1):65.

Loyd, A., S. Smith, J. D. Sampson, J. N. Spain. 2006. Nutritional characteristics of native grasses used in a pasture system. *J. Dairy Sci.* 89(Suppl. 1):120.

Sampson, J.D., and D. E. Spiers, J. N. Spain. 2006. Effect of feeding whole soybeans on thermal balance and fatty acid profiles on early lactation cows during heat stress. *Dairy Sci.* 89(Suppl. 1):65.

Burkhart, M., R. Vogel, J. Spain, and H. A. Garverick. 2005. NEFA and glucose levels in serum of periparturient dairy cows are indicative of pregnancy success at first service. *J. Dairy Sci.* 88(Suppl. 1)

Rhoads, R.P., J.D. Sampson, R.J. Templeman, S.S. Sipkovsky, P.M. Coussens, M.C. Lucy, J.N. Spain and D.E. Spiers. 2004. Hepatic gene expression profiling in lactating dairy cows during initial period of hypothermia. *J. Dairy Sci.* 87(Suppl. 1):461.

Dossier – James N. Spain

Oelrichs, W.A., M.C. Lucy, M.S. Kerley, and J.N. Spain. 2004. Feeding soybeans and rumen-protected choline to dairy cows during the periparturient period and early lactation: Effects on plasma lipid balance. *J. Dairy Sci.* 87(Suppl. 1):441.

Spain, J., R. Vogel, and J.D. Sampson. 2004. The effects of feeding supplemental anionic salt during the periparturient period: Implications for milk production and feed intake by high producing dairy cows. *J. Dairy Sci.* 87(Suppl. 1):345.

Oelrichs, W.A., M.C. Lucy, M.S. Kerley and J.N. Spain. 2004. Feeding soybeans and rumen-protected choline to dairy cows during the periparturient period and early lactation. 2. Effects on reproduction. *J. Dairy Sci.* 87(Suppl. 1):344.

Oelrichs, W.A., M.C. Lucy, and J.N. Spain. 2004. Feeding soybeans and rumen-protected choline to dairy cows during the periparturient period and early lactation. 1. Effects on production and energy balance. *J. Dairy Sci.* 87(Suppl. 1):344.

Kolath, S.J., P.M. Coussens, S.S. Sipovsky, S.J. Wilson, D.E. Spiers, J.N. Spain, and M.L. Lucy. 2004. Microarray analysis of gene expression in ovarian dominant follicles (DF) following heat stress (HS). *J. Dairy Sci.* 87(Suppl. 1):195.

Sampson, J.D., D.E. Spiers, J.N. Spain, R.P. Rhoads, and M. Ellersieck. 2004. Use of ambient and physiological markers to predict production changes in dairy cows resulting from acute heat challenge. *J. Dairy Sci.* 87(Suppl. 1):58.

Journal Quality Indicators

Journal	Publications	Impact Factor	Acceptance
Journal of Dairy Science*	13	2.284	55%
Journal of Thermal Biology	1	0.707	
Journal of Vet. Diagnostic Invest.	1	1.609	
Journal of Ag. Education	1		
Journal of Physiolog. Genom.	1	4.667	

*Journal of Dairy Science is the top-ranked dairy research journal in the world as designated by the Institute for Scientific Information. I served as section editor and senior section editor for the Nutrition, Feeds, Feeding and Calves section of the Journal of Dairy Science.

Dossier – James N. Spain

Gifts and Grants

Principal Investigator

<u>Date</u>	<u>Title</u>	<u>Sponsor</u>	<u>Amount (\$)</u>
8/07	Unrestricted Gift	AGP	19,000
8/07	Unrestricted Gift	BASF	33,215
12/06	Unrestricted Gift	Boehringer – Ingelheim	11,975
10/06	Unrestricted Gift	Boehringer – Ingelheim	11,973
12/05	Unrestricted Gift	Balchem, INC.	26,000
8/05	Unrestricted Gift	BASF	33,215
8/04	Feeding Soybeans to Heat Stressed Dairy Cows	MSMC	87,984
6/04	Unrestricted Gift	Dawe's Lab	8,657
6/04	Unrestricted Gift	Diamond V	30,000
8/03	Unrestricted Gift	Dawe's Lab	8,657
4/02	Unrestricted Gift	Balchem, Inc	26,000
10/01	Unrestricted Gift	Beringer	7,000
10/01	Unrestricted Gift	Balchem, Inc.	28,000
9/2000	Enhancing Reproduction Using Soybeans	MSMC	55,000
10/97	Unrestricted gift in support of Dairy Nutrition Research	Prince	8,550
9/97	Unrestricted gift in support of Dairy Nutrition Research	SF Services	15,000
9/97	Unrestricted gift in support of Dairy Nutrition Research	SF Services	12,000
7/97	Use of Soybeans to improve reproductive performance of dairy cattle.	MO Soybean Merchandising Council	68,000
7/97	Effect of Soybeans on rumen fermentation and endocrine responses.	AES - Regional Research Funding	32,000
2/97	Strategic Cooling of Dairy Cattle (Co-PI)	USDA Ag Systems	205,000
8/96	Unrestricted gift in support of Dairy Nutrition Research	Zinpro	6,300
2/96	Unrestricted gift in support of Dairy Nutrition Research	Prince	9,000
11/95	Unrestricted gift in support of Dairy Nutrition Research	American Crop Protection Assoc.	6,750

Dossier – James N. Spain

6/95	Unrestricted gift in support of Dairy Nutrition Research	Zinpro	17,000
3/95	Unrestricted gift in support of Dairy Nutrition Research	Lonza	4,540
10/94	Unrestricted gift in support of Dairy Nutrition Research	Prince	9,000
7/94	Unrestricted gift in support of Dairy Nutrition Research	Zinpro	11,500
4/94	Unrestricted gift in support of Dairy Nutrition Research	Prince	14,800
12/93	Unrestricted gift in support of Dairy Nutrition Research	Prince	1,000
9/93	Unrestricted gift in support of Dairy Nutrition Research	Zinpro	15,000
8/93	Unrestricted gift in support of Dairy Nutrition Research	Carolina By-Products	12,000
12/92	Unrestricted gift in support of Dairy Nutrition Research	Prince	6,000
12/92	Gift of two tons fish meal	Zapata	1,000
12/92	Computer Donation	MO DHIA	1,200
7/1/92	Protein in Diets of Growing and Lactating Dairy Cattle	Ag. Exp. Station C-Budget	9,100
3/26/92	Unrestricted gift in support of Dairy Nutrition Research	Merck & Co.	11,250
1/31/92	Unrestricted gift in support of Dairy Nutrition Research: Amino Acid Nutrition of Lactating Cows.	Prince	6,000
9/30/91	Unrestricted gift in support of Dairy Nutrition Research: Amino Acid Nutrition of Lactating Cows	Merck & Co.	11,250
8/31/91	Effect of Diet NDF and Lipid - on Milk Production and Composition	MFA, Inc.	22,100
8/31/91	Identification of Nutritional Factors Involved with Prevention of Mastitis in Dairy Cattle	Alltech Inc.	11,200
7/1/91	Protein in Diets of Lactating and Growing Dairy Cattle. C-Budget	Ag. Exp. Station	13,000
1/31/91	Body Condition Scoring Clinic	Com. Ag	1,000
1/91	Site license – software	MO DHIA	1,500

Dossier – James N. Spain

Gifts and Grants (continued)

Principal Investigator

1/31/91	Support of Extension Activities	MO DHIA	170
11/30/90	Body Condition Scoring Clinic	Purina Mills	450
11/30/90	Support of Extension Activities	MO Holstein Assoc.	250
10/31/90	Body Condition Scoring Clinic	Moorman Mfg.	450
10/31/90	Body Condition Scoring Clinic	Monsanto Co.	250
10/31/90	Body Condition Scoring Clinic	MFA, Inc.	450
10/31/90	Body Condition Scoring Clinic	Kent Feeds	500
10/31/90	Body Condition Scoring Clinic	Church & Dwight	<u>450</u>
		Total	\$931,596

Co-Investigator

2009	A TIME for Physics First National Science Foundation (Chaired Advisory Board) PI – Dr. Meera Chandrasekhar		5,000,000
2004	Core Curricula Development USDA For Baccalaureate Sustainable Agriculture Degree Program		134,893
2001	Genomics of Heat Stress USDA Dairy Cattle (IFAFS - Michigan State Univ.)		205,000
1996	Unrestricted gift in support Zinpro of Dairy Nutrition Research		15,000
1995	Unrestricted gift American Crop Protection Assoc.		20,168
1994	Corpus Luteum Function Research Board and Follicular Growth Grant in Dairy Cattle Exposed to Heat Stress PI: Matt Lucy, Dept. of Animal Sciences		29,115
1994	An In Vitro and In Vivo Bard Grant (USDA- Investigation of the Diverse 2109-92R) Biological Activities of Bovine Placental Lactogen. PI: Don Spiers, Dept. of Animal Sciences		275,000
1992	Agriculture Experiment Station Food Safety Special Projects Health Professional Survey on Perceptions on Biotechnology and Food Safety: The Case of bST PI: Karla Hughes, Dept. Human Nutrition & Foods		7,650

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Gifts and Grants (continued)

Co-Investigator

	Media Coverage of New Technology:	8,400
	The Case of bST	
	PI: Barbara Slusher, Dept. Consumer & Family Econ.	
1992	Functional Properties of Milk Fat in Ice Cream with Increased Unsaturated Fatty Acids	
	MRAA	10,900
	National Dairy Board	38,577
	PI: Robert Marshall, Dept. Food Science	
	Survey of Nutrition Management Commercial Ag Practices of Missouri Livestock Producers Grant	28,320
	PI: Barry Steevens, Dept. Animal Sciences Ext.	
1991	Quantification of Residues in Tissues and Milk of Cows Treated with Lambdacyhalothrin	
	ABC Lab	71,900
	PI: Ron Belyea, Dept. Animal Sciences	
	Total:	\$ 5,844,903
	Total Grant Funding Activity	\$ 6,776,499

College of Agriculture, Food and Natural Resources

Courses and Curriculum, Chair 1997-98
CAFNR Teaching Fellows Program Development Committee Chair 1996
Courses and Curriculum Committee 1995, 1996
CAFNR - Policy Committee 1992 to 1995
Committee to Establish Transfer Student Scholarship Awards Policy 1993
Undergraduate Scholarship Awards Committee 1992

University (Campus and System)

Vice Chancellor Extension and Engagement Search Committee, 2016
Comprehensive Retention Initiative (UM), 2012 - present
MU Financial Wellness Taskforce, 2013 – 2016
MU Military and Veterans Affairs Committee, 2011 - present
Student Administrative Systems Oversight Committee (UM), 2012 – present
MU Fraternity Alumni Consortium, Academic Affairs Committee, 2009 - present
Mizzou Alumni Association Long Range Planning Committee 2009-10
MU At-Risk Student Committee 2008-present Intercollegiate
Intercollegiate Athletics Committee 2007 – present
Instructional Technology Committee 2007 - present

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University (Campus and System) (continued)

MU/UM System United Way Annual Campaign
Lead Chair, 2008 – most successful campaign in University's history
Tri-chair, 2006, 2007

MU Strategic Planning and Resource Advisory Committee 2007-2014
Vice Provost for Undergraduate Studies Search Committee 2007
Vice Chancellor for Student Affairs Search Committee (chair) 2002-03
Professional Development Planning - Policy Committee 1997
Base Program Planning Committee 1996
Commercial Agriculture Search Committee Chair 1996
Beef Specialist

Commercial Agriculture Dairy Focus Advisory Group. 1991 to present.
Commercial Ag Dairy Seminar Planning Committee. 1991, 1992, 1993, 1994, 1995

Commercial Ag Search Committees 1991
Agriculture Economist
Waste Management Engineer
Nutritionist-Forage Specialist

Ag Profitability Initiative Team, Dairy Sub-committee 1991
Food Safety Task Force 1991
Annual Conference Planning Committee 1993

State

Missouri Department of Higher Education Curriculum Alignment Initiative
Steering Committee 2007-2009
Ex-officio member - Missouri DHIA Federation Board of Directors, 1990 to 2001
Missouri Dairy Growth Council (appointed by Dean Thomas Payne) 2005 to 2007

National

Education Advisory Board – Student Success Collaborative – Product Advisory
Committee 2013-14
American Registry Professional Animal Scientists Board of Directors 2009-2012
Midwest Director
Chair, Ethics Committee

American Dairy Science Association Merit Dairy Management Research Award
Selection Committee 2006 – 2007
American Society of Animal Science Teaching Committee ASAS 1995-97
USDA Agriculture Systems Grant Review Panel 1997
1996 Heart of America Dairy Management Conference, Co-Chair
Dairy Records Processing Center at Raleigh Advisory Committee

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Production Management Committee, American Dairy Science Association 1994 - 1997

Production Management Committee, American Dairy Science Association, 1993-96, Committee Chair 1995-96

Ad hoc reviewer for the Journal of Dairy Science 1990 to present

North Central Region Extension 1994 Workshop Planning Committee, Dairy Species Chair

North Central Region 119: Dairy Profitability and Management Annual Meeting
Co-Host with Kansas State

Professional Improvement Activities

Millennial Leaders Institute - AASCU	2015
UM President's Leadership Training Program	2003
ESCOP/ACOP Leadership development	2002
National Bioethics Institute	1999
CAFNR Teaching Scholars Professional Development	1997
Wakonse Conference on University Teaching	1997