

## ***CURRICULUM VITAE***

**Gary D. Snowder, Ph.D.**  
**Associate Vice President for Research**  
University of Nevada, Reno

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### **Education**

<b>Ph.D.</b>	Texas A&M University	1987
<b>M.Sc.</b>	Texas A&M University	1980
<b>B.Sc.</b>	University of California, Davis	1977

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### **Professional Experience**

#### **Associate Vice President for Research**

University of Nevada, Reno. 2011 – Present.

#### **Associate Director**

National Center for Foreign Animal and Zoonotic Disease Defense, Texas A&M, College Station.  
2008 – 2011.

#### **Senior Research Geneticist**

USDA, Agricultural Research Service, Clay Center, NE. 2002 – 2008.

#### **Research Geneticist**

USDA, Agricultural Research Service, Dubois, ID. 1987– 2002.

#### **Assistant Professor**

Southern Utah University, Cedar City. 1985 – 1987.

#### **Research Associate**

Texas A&M Research and Extension Center, San Angelo and College Station. 1977 – 1985.

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### **Entrepreneurial and Business Experience**

#### **President/General Partner**

*Enviro-Services LLC*, Hastings, NE. 2004-2007. Developed a highly profitable production and service company utilizing a unique commercial liquid deicer.

#### **Chief Executive Officer/General Partner**

*Lion Investments, LLC*, Bryan, TX. 1983-1985. Founded a modest investment company for oil/gas exploration, company acquisitions, and real estate development. As CEO, I led the

company in achieving a highly profitable portfolio. General partners included former CFO of US Steel, attorneys for venture capital entities, and major business executives. Sold interests to pursue research career.

### **Chief Executive Officer/ Board Member**

*Computer Mineral Brokerage Inc.*, Bryan, TX. 1980-1983. Rapidly promoted from Director of Investments to CEO of small oil/gas investment company, \$5M in annual revenues. Raised more than \$3M in private and venture capital funds. Oversaw exploration and production of oil/gas wells in the Appalachians, Midwest, and Texas. Restructured company, improved financial administration, and enhanced relations with investors, stockholders, and contractors.

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## **Research Administration**

### **Associate Vice President for Research, University of Nevada, Reno**

#### **1. Development of Professional Services**

As Associate Vice President for Research the following divisions are direct reports:

Office of Sponsored Projects	Shared Research Laboratories
Technology Transfer	Research Fellows Program
Conflict of Interest	Undergraduate Research
Interdisciplinary Research	Data Management
Export Control	Academy for the Environment
Effort Reporting	Center for Research Design and Analysis
Directors of Field Laboratories	Limited Competitive Submissions

Office of Sponsored Projects. Revised and developed new policies and procedures that significantly enhanced the professional services, improved workflow, streamlined award set up, mended customer relations, and restored faculty confidence. Mentored new Director.

Research Fellows Program. Increased the impact of the faculty development and mentoring programs by increasing participation more than 50%. Provided additional training sessions for proposal development, grant writing, and identifying external funding sources.

Shared Research Laboratories. Established business plans for core labs to increase campus access, market services, establish budgets for equipment maintenance and replacement, train staff, assure safety/compliance, and prioritize future infrastructure investments. Reviewed commercial maintenance costs and suggested consolidation of contracts across laboratories.

Undergraduate Research. Enrolled UNR in the Council on Undergraduate Research (national organization), developed a campus wide program for tracking and measuring undergraduate research activities, consolidated several undergraduate research presentations and poster sessions into a larger general session, increased promotion and recognition of successful undergraduate research programs, and identified federal and foundational funding opportunities for undergraduate support. Funding more than doubled under my oversight.

Compliance. Have a high level of organizational and strategic competencies in most matters of federal research compliance.

Improved relationships between compliance offices and faculty by mentoring compliance officers on “good cop” approaches, revising or creating new training programs, increasing faculty awareness of compliance penalties imposed at other institutions, providing consistent training and updates to the Research Council and Associate Deans of Research. Provided oversight in the revision of Conflict of Interest reporting for NIH and development of new tracking software. New

and ongoing efforts include developing administrative and implementation procedures for export control and data management. Developed high standards to safeguard the institution's research enterprise and reputation.

Limited Competitive Submissions. Established a formal review and critical selection process to maximize success of IGERT, Major Research Instrumentation Grant, and other proposal submissions.

## 2. **Faculty Research Support**

My main objectives are to minimize burdens on faculty and maximize proposal success.

### ***Increased Funding Opportunities.***

Search Engines. Improved the OSP website to train and assist faculty to use PIVOT for identifying funding opportunities.

Foundation and Corporate Funding. Established a collaborative policy with the Office of Development & Alumni Relations to encourage faculty to seek funding outside of government and institution entities.

NON-STEM Faculty and Programs. Met with administrators in Schools and Colleges of Journalism, Liberal Arts, Education, Basque Studies, Judicial Studies, and Business to learn of their research/scholarship/artistic programs, and their needs. Set up funding searches in Grants.gov and FoundationCenter.org targeted for top priorities that resulted in significant increase in grant proposal applications (Basque Studies seeking NSF grant for language preservation, music department seeking funding from Fender Music Foundation, Judicial Studies seeking new multiple funding opportunities, Education is increasing their collaboration with STEM colleges, etc.)

Federal Sponsor Interactions: Re-established administrative outreach and relations with federal agencies. Active visits and communication with federal sponsors identified opportunities to establish alliances on new initiatives such as the future DOE National Research Center for Geothermal Exploration and NIH COBRE priorities. Additionally, I aggressively championed UNR research to federal sponsors (DOE, NSF, NIH, NIFA, IER, DHS) and national laboratories (Lawrence Livermore, Sandia, and Plum Island Animal Disease Center).

### ***Grant Writing Assistance.***

Personal Assistance. Provided financial support for grant coordinators to four colleges to assist in identification and dissemination of funding opportunities, budget development, assuring administrative approvals, organizing multi-PI planning sessions, etc. Set performance standards and metrics for success.

Statistical Support. The Center for Research Design and Analysis was realigned to increase faculty awareness and usage of its statistical services.

Proposal Review. Contracted the UNR Writing Center to provide professional review of proposal drafts.

### ***Research Infrastructure Needs and Development.***

Facilitated the drafting of the *Strategic Plan for Research, Scholarship, and Creative Expression* for UNR that establishes goals and action steps to improve the research culture, provide adequate and state-of-the-art equipment and facilities, and removes or reduces obstacles to the research enterprise.

### ***Access to Shared Research Laboratories.***

Developed business plans for all core laboratories to increase faculty accessibility, improve cost efficiencies, and provide long term capacities for state-of-the-art facilities.

### ***Strengthened Administrative Support.***

As Co-Chair of the Research Council (Associate Deans for Research), I clarified the committee's role to support and expand the research enterprise such that the committee became proactive in decision making and defining solutions to obstacles to research expansion and management.

### ***Promoted Successful Research Programs.***

Conducted several comparative analyses to identify UNR's outstanding research programs by various internal and external data sources (NIH, NSF, Elsevier SciVal, etc.). Descriptive data on the quality of research programs was disseminated to the administration, communications office, colleges, chairs, and board of regents. Championed outstanding programs to sponsors, foundations, and collaborative universities.

## **3. Technology Licensing and Commercialization.**

Office of Technology Transfer: Realigned office functions with state and regional economic mandates, organized an advisory board, established realistic performance metrics, improved transparency of services, increased commercial marketing activities of IP portfolio, and initiated collaborative working relations with sister institution (UNLV) in southern Nevada.

Commercial Startups: Oversight of ongoing development of two new startup companies requiring revision of policies, resource reallocations, and assuring compliance.

Marketing of Licenses/Patents. To date, I have provided oversight for more than 50 invention disclosures, and 97 provisional and regular patents. I am the VPR representative negotiating terms for marketing a license agreement to a S&P 500 pharmaceutical corporation with a potential value exceeding \$50 million.

Additional Commercialization Activities. Recent and ongoing role in promoting:

- Geothermal energy technology research and development (I/UCRC)
- Seismic road, bridge, and building construction engineering (foreign construction firms)
- Arranged campus tours for companies and have accompanied faculty to visit local technological companies (aerospace, drones, clinical drugs, software, etc.)

Commercialization Awareness. Recent successes (spin offs, license marketing, etc.), industry interactions, training, and seminars resulted in a discernible increase in faculty attentiveness to industry partnerships and technology commercialization.

## **4. Interdisciplinary Research.**

Played a major leadership role in development and support of interdisciplinary research programs and proposals.

Seed Grant Initiative. Developed a funded competitive program to support entrepreneurial faculty to self-organize into transformative integrated research partnerships (Strategic Integrated Research Partnerships) to create and submit a well-written proposal that demonstrates innovation in strategic collaboration, is competitive at a national level, and fully meets sponsored guidelines.

Interdisciplinary Grant Coordinator. Created a new half time grant support professional to assist faculty in identifying cross disciplinary research funding opportunities, organizing, planning, obtaining approvals across colleges, budgeting multiple projects, and improving proposal quality.

Recognition of Existing Interdisciplinary Activities. Discovered and promoted existing well established interdisciplinary programs not previously recognized (environmental studies of the Tahoe Basin, geoseismic studies in topography and engineering, chemical ecology, etc.).

Research Clusters. Whereas, previous budget reductions eliminated formal interdisciplinary research centers, I proposed the development of strategic research clusters for multidisciplinary research activities. Such research clusters may mature into new formal centers. Administrative

review and approval of research clusters is now in progress.

**Associate Director, National Center for Foreign Animal and Zoonotic Disease Defense (FAZD Center), Texas A&M University**

**1. Development of Professional Services**

The FAZD Center is one of twelve designated National Research Centers of Excellence funded by the U. S. Department of Homeland Security. The Center administers research projects conducted at universities, federal laboratories, and state institutions (public health, animal health, first responders, etc.). I provided administrative and scientific leadership for 32 research and education projects conducted at 14 universities with annual budgets ranging from \$4M to \$9M, and additional leveraged funds exceeding \$16M.

As Associate Center Director the following divisions were direct reports: Assistant Center Director, Research Administration and Compliance, Research Leaders (Biological Systems, Information Analysis, Education/Outreach), Public Relations Officer, and Business Coordinator.

Strategic Planning. Established well designed business plans for research and education projects. Lead author of center's strategic plan to expand the center's impact to a global level, increase alliances with universities and federal laboratories, identify alternative funding and research opportunities, and establish milestones and timelines for success. Mentored research leaders on achieving goals and milestones.

Internal Competitive Grants Program. Developed and administered a \$6.2 million competitive grant program seeking proposals nationwide. Organized and facilitated merit review panels, communication, award, and contracts. Resulted in novel research and education projects and new collaborations across universities.

Public Relations.

- Ameliorated and leveraged relationships with industry, state, and federal agencies (DHS, NIH, DoD, NSF, USDA), professional national organizations (ASAS, ADSA, AVMA) and international partners (Mexico, Canada, Korea, United Kingdom).
- Developed and implemented strategies for increasing recognition and global branding of center recognition by enhancing media relations, improving the web print, targeting news releases, providing efficacious communication to sponsors and stakeholders, and promoting researchers and their institutions.

**2. Faculty Research Support.**

Funding Support. Increased external funding success by identifying alternative funding sources, developing research teams, facilitating grant proposal submissions, and interfacing with granting agencies. Successful grant awards (\$9 million for 6 year term in DHS research and education grants, \$972,000 in USDA, APHIS Emergency Response grant, in excess of \$400,000 in education grants, co-author of \$9.2 million USDA-NIFA grant for multi-institutional research of bovine respiratory disease).

Graduate Student Support. Administrative oversight for STEM research and education endeavors for more than 100 graduate students. Increased the number and quality of graduate students selected for research projects. Initiated development of mentoring guidelines to improve preparation of graduate students to detect and respond to biological threats.

University Relations. Developed and maintained strong harmonious working relationships with researchers/educators, administrators, compliance officers, and directors of sponsored projects at more than 14 universities. Facilitated several conflict resolutions at different universities. Worked

with university committees to coordinate compliance and material transfer of laboratory animals and biologicals across institutions and federal labs.

Served on four national planning committees, two national task forces, and seven workshops. Facilitator of three workshops. Co-authored two white papers.

### **3. Technology Licensing and Commercialization.**

Major driving force in establishing partnerships with associated industries and pharmaceutical companies (Merck, Pfizer, etc.) to pursue commercialization of vaccines (FMD and Rift Valley), adjuvants, and real time biosurveillance technologies. Merck became a partner and partial sponsor of FMD product testing at Plum Island Center Animal Disease Center.

### **4. Interdisciplinary Research.**

The majority of projects were interdisciplinary (epidemiology, vaccinology, entomology, biosurveillance, first responders, livestock productions, communications, risk assessment, etc.) and multi-institutional. Directed the organization of four highly successful interdisciplinary programs involving members of the National Academies of Science and Medicine, and Distinguished Professors. I provided administrative leadership across disciplines, colleges, and universities to assure effective collaboration and communication. My leadership improved cooperation, increased synergy and camaraderie, and develop stronger research partnerships.

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## **Research and Teaching Accomplishments**

### ***Senior Research Geneticist* (GS-15)**

USDA, ARS, US Meat Animal Research Center (MARC), Clay Center, NE

At the invitation of the Associate Administrator for USDA, ARS, I accepted the newly created position for developing and administering a new genetics research program in bovine health at MARC.

### **Core Responsibilities**

- Lead collaborative multidisciplinary research characterizing genetic factors influencing disease resistance and susceptibility traits.
- Collaborate with multi-disciplinary research groups for discovery of genetic markers influencing health and longevity.
- Serve on ARS committees for research planning, evaluation, and project review.
- Mentor new USDA, ARS scientists (Special Appointment)
- Quality reviewer of 36 ARS-CRIS five year research project proposals for submission to the Office of Scientific Quality Review (Special Administrative Assignment to Area Headquarter, Fort Collins)
- Serve on industry, professional, and scientific review and planning committees.
- Adjunct professor to University of Nebraska and member of graduate committees.

### **Major Accomplishments**

- Discovered major genetic components associated with disease resistance in beef cattle.
- Novel investigations on the effect of heterozygosity on disease resistance.
- In collaboration, identified genomic mapping regions highly associated with bovine health.
- Global recognition for research in genetics of disease resistance.
- Increased interactions with livestock and health industries.
- Recognized by USDA (ARS Merit Award) for outstanding improvement of research.

### **Research Geneticist (GS-15)**

USDA, ARS, U.S. Sheep Experiment Station, Dubois, ID

#### Core Responsibilities

- Lead Scientist/Geneticist of Production Systems CRIS (1989-1993) and Genetics CRIS (1994-1998), and subsequent member of multidisciplinary location CRIS project (1999-2002). Oversight of the world's largest sheep genetics project from 1987-1998.
- Supervise, review performance, and promote support scientists, post-doctorates, technicians, and administrative staff. Supervise visiting scientists, graduate students, and interns.
- Fiscal accountability (>\$1.5 M annual) for labor, research costs, facilities, vehicles, laboratory and computing equipment, and feed purchases. General management for livestock, facilities, and laboratories.
- Administrative duties: Location Safety Officer, Chair of the Institutional Animal Care and Use Committee, oversight of design and construction of research facilities, location representative to livestock and environmental associations, and interim Research Leader.
- Liaison for cooperative research with scientists in Scotland, England, Wales, New Zealand, Australia, Virgin Islands, Mexico, Brazil, Chile, Argentina, Kazakhstan and Kyrgyzstan.
- Adjunct professor and member or co-advisor of 13 graduate student research committees.

#### Major Accomplishments

- Research resulted in estimation of new genetic components, identification of novel selection traits, characterization of breed specific phenotypic and genetic potentials, and development of profitable production alternatives.
- In collaboration with Drs. Noelle Cockett (Utah State) and Michel Georges (University of Liège, Belgium), discovered the *callipyge* gene and defined its non-Mendelian mode of inheritance.
- Subject matter expert on the genetic influences on susceptibility to ovine progressive pneumonia (OPP). Chaired national committee to identify OPP research priorities.
- Led a multidisciplinary multi-institutional research project that demonstrated the effectiveness of total body electrical conductivity scanning for predicting chemical composition of live sheep.
- Led a interdisciplinary research team (USDA-ARS, Montana State, UC-Davis, Texas A&M, and University of Wyoming) on a four year project to compare the Australian Merino with US breeds. This was the largest and most comprehensive sheep evaluation study ever conducted in the US.
- Conceived and developed a novel interdisciplinary research team to apply NIR spectrophotometry in the approximation of plant specific intake values for estimating the heritability of diet selection, in cooperation with Dr. John Walker. Resulting manuscript is regarded as a classical study.
- Led the USDA-ARS-USSES Research Center in setting research priorities, developing strategic research plans, and establishing industry and international alliances.
- Received more than \$5M in support for ARS research projects. Additional support exceeded \$2M for special research projects, facilities, and laboratory equipment. Collaborator on approximately \$2M USDA-CSREES competitive grants.
- Global impact of research evidenced by numerous international invitations.
- Research Fellow, Organization for Economic Cooperation and Development (OECD), Paris.
- Highly successful in developing alliances with state and national livestock organizations and leveraging industry and federal contacts for increasing funding support.
- Significantly increased ARS's national and international reputation for impact research.

### **Assistant Professor**

Southern Utah University, Cedar City, UT

#### Core Responsibilities

- Review and update curricula. Instruct courses in nutrition, reproductive physiology, anatomy, genetics, livestock production and diesel mechanics.

- Advisor to approximately 90 undergraduate students.
- Faculty advisor to the Rodeo Club and the Ag Club.
- Oversight for management and finances of the agricultural laboratory (900 acres of crops and pasture, and livestock).

#### Major Accomplishments

- Revised and enhanced the curricula to meet accreditation.
- Improved the pedagogy, introduced computers for learning, established computer lab.
- Developed a new multidisciplinary degree program in Livestock Business Management in cooperation with the College of Business.
- Received Outstanding Teaching and Advising Award from the Ag Club, 1987. Nominated for Distinguished Teacher Award in the College of Biological Sciences, 1986 and 1987.
- Increased enrollment in the agricultural program by more than 25%.
- Established industry support among livestock producers, feed industry, commercial agricultural supplies, and the general public.
- Developed alliances with state FFA chapters. Director of the 1987 Utah FFA Convention which received national recognition for creative programs.
- Received a state competitive education grant (\$15,000) to enhance career advisement.
- Improved the reputation of the Ag Club by enriching the quality of guest speakers, creating service projects, increasing participation in campus activities, and mentoring student leaders. Consequently, the Ag Club became the largest and most active student body association.
- Renovated the agricultural field laboratory and upgraded the genetics of the cattle herd.

#### **Research Associate**

*Texas A&M University Research and Extension, San Angelo and College Station, TX*

#### Core Responsibilities

- Under the supervision of researchers, conduct research to enhance livestock production, control invasive plants, estimate genetic influences on production, and conduct livestock performance tests.
- Perform statistical analyses, interpret results, co-author manuscripts, and participate in extension activities (field trials, workshops, and field days).
- Instruct livestock production courses.
- Consultant on data analyses using commercial software programs (SAS and SPSS).

#### Major Accomplishments

- Set up and operated the center's first computer, wrote programs for data management, and performed statistical analyses of large data sets.
- Enhanced performance test programs with improved management, analyses, and reports.
- Recognized for outstanding statistical consulting service to faculty and students.

#### **Community Service**

**Boy Scouts of America.** Adult leader for more than 24 years. Positions: Scout Master, Explorer Post Advisor, District Commissioner, Roundtable Commissioner, and District Chairman. Received the *Silver Beaver Award*, two *Council Recognition Awards*, and the *District Merit Award* for outstanding accomplishments. Obtained donations exceeding \$75K for the BSA Overland Trails Council, NE.



**School Board.** Two terms (1996 – 2002) as Member and Chair of the Clark County School District, Dubois, ID. Accomplishments: developed a district wide curricula in science, mathematics, and English; achieved public ballot support for a new junior/senior high school; chaired search committees.

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### **Memberships in Professional Organizations**

National Council of University Research Administrators (NCURA)  
Society of Research Administrators International (SRA)  
Council on Governmental Relations (COGR)  
Council on Undergraduate Research (CUR)  
National Council of Entrepreneurial Tech Transfer (NCET2)  
American Association for the Advancement of Science (AAAS)  
American Council of Trustees and Alumni (ACTA)  
Council for Agricultural Science and Technology (CAST)  
American Society of Animal Science (ASAS)  
Federation of Animal Science Societies (FASS)

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### **Honors, Awards, and Special Accomplishments**

USDA, ARS Certificate of Appreciation for *Outstanding Administrative Performance*. October, 2007.

Boy Scouts of America, *Silver Beaver Award* (2007); District Director Award (2004) Overland Trails Council for “outstanding volunteer services spanning more than 20 years that enhanced scouting programs, increased youth membership, and contributed to a better future generation of leaders”.

USDA, ARS, Performance Award, in recognition of *Outstanding Research Performance*. December, 1999.

*Sabbatical Leave* (1997 and 2000) University of Nebraska to study biostatistics and conduct collaborative projects with Dr. Dale Van Vleck (USDA, ARS Science Hall of Fame Scientist).

Organization for Economic Cooperation and Development (OECD), Paris, *International Research Fellow*, to foster collaborative research in the United Kingdom. 1995.

USDA, ARS *Outstanding Scientist Performance*, 1994, 1997, and 2002.

USDA, ARS *Certificate of Merit* for developing a novel and cutting edge research programs. 1994.

USDA, ARS *Competitive Post Doctorate Research Award* to incorporate molecular genetics into quantitative selection criteria. 1994.

USDA, ARS, *Competitive Summer Biotechnician Intern Award* for training minority status individuals. 1994.

USDA, ARS, *Certificate of Appreciation* for significant research accomplishments. 1992.

USDA, Office International Research Programs (OIRP), *International Research Coordinator* to establish collaborations in Kazakhstan and Kyrgyzstan to advance genetic improvement of livestock. Recognized by US State Department as the first American scientist to visit and assist both countries. 1992.

USDA, ARS *Certificate of Merit* in recognition of outstanding research performance. 1990.

Immortalized in Baxter Black's cowboy poem “*Theriogenologist*”, Croutons on a Cow Pie, Vol II. 1990.  
Based on one of my life's embarrassing research moments.

State Coordinator for the Utah Future Farmers of America (FFA) convention. 1987. Convention received national media attention for unique training and vocational activities.

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## **Major Offices and Committee Assignments**

**CoChair**, University of Nevada, Reno, Research Council, 2012-present.

**Chair**, Committee for developing the Strategic Plan for Research, Scholarship, and Creative Expression, University of Nevada, Reno, 2012-2013.

**Member**, University of Nevada, Reno, Conflict of Interest Review Board, 2012-present.

**Chair**, University of Nevada, Reno, Advisory Board to the UNR Technology Transfer Office. 2012-present.

**Member**, Joint Strategy Forum on Animal Disease Traceability, sponsored by the National Institute for Animal Agriculture and the United States Animal Health Association, Denver, Colorado. Resulted in White Paper: Reactions, Solutions and Consensus from the Joint Strategy Forum on Animal Disease Traceability. August 30-31, 2010.

**Research Leader**, Information Analysis Systems (a multi-institutional and multi-disciplined research group to develop epidemiological models and real time monitoring systems), National Center of Excellence for Foreign Animal and Zoonotic Disease Defense, Texas A&M University. January, 2009 – November, 2010.

**Chair**, Animal Health Symposium, Joint Annual Meeting ADSA, CSAS, and ASAS. Montreal, Canada. July 14, 2009.

**Chair and Member**, Animal Health Program Committee, American Society of Animal Science, 2006 – 2008; Chair, 2009.

**Member**, Selection Committee for the Rockefeller Prentice Memorial Award (Animal Breeding and Genetics), American Society of Animal Science, 2003 – 2005.

**Member**, Selection Committee for the Frank Baker Grant, Beef Improvement Federation, 2003 – 2007.

**Member**, USDA, NIFA, National Cattle Evaluation RA199, "Implementation and Strategies for National Beef Cattle Evaluation" (2003 - 2010).

**Member**, Advisory and Technical Committee, Western Section of American Society of Animal Science, 2001 - 2003.

**Chair** (2001-02), Secretary (1999-2000), Representative. 1997 - 2002, USDA-CSREES, National Coordinating Committee 190, "Genetic and Environmental Approaches to Improve Lamb, Wool and Milk Production". Lead author of project proposal (1998).

**Chair**, Breeding and Genetics Session, Western Section, American Society of Animal Science, June 10-11, 1999. Provo, UT

**Invited Participant**, Discover Conference - Preserving Animal Germplasm Diversity - A Call to Action. Nashville, Indiana. October 31 - November 3, 1999.

**Chair** (1995), Vice-Chair (1994), Secretary (1993), and Location Representative (1987 - 2002), USDA-CSREES, Western Region Coordinating Committee-39: "Increased Efficiency in Sheep Production and Marketing of Lamb." Chair of subcommittee for technical rewrite of regional research project (1994).

**Chair** (1996), Vice-Chair (1995), Secretary (1994), Location Representative, (1987 - 1997), USDA-CSREES, National Technical Committee 111, "Increasing Production Efficiency of Sheep". Chair of subcommittee for research project proposal (1996).

**ARS Representative**, USDA-CSREES, Western Region Coordinating Committee 100, “Genetic Evaluation of Beef Cattle”, 1999 - 2002.

**Member**, USDA-CSREES, National Animal Genome Technical Committee (NRSP-8), Sheep Sub-Committee, 1993 - 2002.

**Member**, Editorial Board, Journal Small Ruminant Research, 1997 - 2001.

**Chair** (1999), Vice-Chair (1998), and Member, Sheep Forum Committee, American Society of Animal Science, 1996 – 1999. Coordinated and chaired the national annual symposium.

**Research Project Leader** (1989 - 1996), USDA-CSREES, WRCC-39 Sub-Committee for Australian Merino Evaluation Project. Coordinated multi-institutional breeding project to evaluate reproductive, carcass, and fiber characteristics of Merino cross-bred sheep.

**Co-Chairman**, National Committee of the American Sheep Industry Association to write a summary and status report on Ovine Progressive Pneumonia (1992-1994).

**Chair** (1995) and Member (1993-1995), Judging and Carcass Evaluation Committee, Western Section of American Society of Animal Science.

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## Professional Service

**Reviewer** for scientific journals:

*Genetics Selection Evolution* (2004 – present)

*Animal Genetics* (2005-present)

*Journal of Animal Science* (1990 – present; Section Editor: Health and Well-Being 1999-2002)

*Journal of Dairy Science* (2000 – present)

*Biology of Reproduction* (1992 – 2002)

*Livestock Production Science* (2002-present)

*Small Ruminant Research* (1997 – 2007; Editorial Advisory Board 1997 – 2001)

*Sheep and Goat Research Journal* (1990 – 2006)

*Wool Technology and Sheep Breeding* (1991 – 2002)

*Animal Science* (British Soc. Anim. Sci., 1995 – 2000)

**Panel Member**, USDA-CSREES (NIFA) Small Ruminant Research Grants Program, Washington, DC, 1992-1993.

**Merit Review** for the USDA-CSREES (NIFA) Small Business Innovation Research (SBIR), 1998, 2001, 2004, 2008.

**Panel Member**, USDA-CSREES, National Research Initiative on Competitive Grant Proposals (NRICGP), 1994, 1996, 2001.

**Adjunct Professor:**

Texas A&M (2009 - 2011)

University of Wyoming (1990 – 1994)

University of Nebraska (1999 – 2008)

Washington State University (1993 – 2000)

University of Idaho (1987 – 2002)

Utah State University (1993 – 2003)

**Member** of American Sheep Industry, National Sheep Improvement Program Subcommittee to determine genetic selection criteria for improving lamb composition (1995 - 2000).

**Consultant and Liaison Contact** for USDA/1890 Cooperative Research with Alabama A&M University. Project title: Molecular and Quantitative Genetic Approaches to Enhance Parasite Resistance in Sheep (1995 - 1998).

**Consultant and Liaison Contact** for USDA/1890 Cooperative Research with Prairie View A&M University. Project title: Developing Value-Added Goat Meat Products (1995 - 1998).

**Panel Member** for the Livestock Research Grant Proposal Subcommittee, USDA, CSREES, Fund for Rural America (1997).

**Scientific Advisor** to the Utah Department of Agriculture for developing cooperative agricultural trade, research and extension activities with Kyrgyzstan (1998).

**Member**, Technical and Advisory Committee for the Western Section of the American Society of Animal Science (2001 - 2003).

**Member**, Task Force of experts on influenza, public health, and animal health to develop strategies for One Health approaches to address influenzas, Washington, DC. December 1–2, 2009. Resulted in: “One Health Approach to Influenza: Assessment of Critical Issues and Options Development”, Emerging Infectious Diseases J. Vol. 16, No. 8–August 2010.

**Member**, Task Force to develop future directions for improving disease modeling for Rift Valley Fever in the US, November, 2009. Resulted in: “Understanding the Potential Impacts of Rift Valley Fever in the United States”, Journal of Emerging Infectious Diseases (accepted March, 2011).

**Principal or Co-Principal Investigator** in 16 USDA, ARS Cooperative Research and Development Agreement (CRADA) with various institutions: Utah State University (2), University of Idaho (1), Washington State University (2), Colorado State University, Texas A&M (2), University of Nebraska (2), University of Wyoming (2), ARS, Pullman (1), USDA, ARS, Laramie (1), Prairie View A&M (1), and Superior Farms, Inc. (2).

**Tenure and Promotion Review** for University of Nebraska, Texas A&M, University of Idaho, and Idaho State University.

**Selection Committee Member** for Research Leader, USDA-ARS, Dubois, ID; Center Director for Climate Change and Environmental Studies, Texas A&M; and faculty positions at Texas A&M and University of Nebraska.

**Panel Member**, USDA, ARS Case Review Evaluation Panels (promotion and retention) 1994, 1997, 2003.

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## Grantsmanship

1994 -1995 USDA, ARS Competitive Post Doctorate Research Grant, \$90,000.

1994, 1999 USDA, ARS, Competitive Summer Biotechnician Intern, \$16,000.

1995 Cooperative Research Fellowship, Organization for Economic Cooperation and Development (OECD), Paris. \$30,000.

1987 – 2002 USDA, ARS, Dubois, ID. Received **more than \$5M** in ARS CRIS research support as Principle Investigator for numerous federal research projects. Additional ARS support **exceeded \$2M** for special projects and laboratory equipment. Co-Principle Investigator on **~\$2M** USDA-CSREES awarded competitive grants.

2002-2008 USDA, ARS, Clay Center, NE **\$3.2M** for CRIS Project: Genetic Improvement of Livestock.

2008-2010 National Center for Excellence for Foreign Animal and Zoonotic Disease Defense, Texas A&M, totaling more than \$12M.

- 2008 - 2010 in **excess of \$400K** from DHS University Programs for education/outreach training of minority farm labors in first language (Spanish)
- 2008 - 2010 in **excess of \$300K** from DHS University Programs for regional and national conferences/workshops.
- 2009- **\$972K** from USDA, APHIS for development of a Real Time Dashboard Emergency Response System.

- 2009 - in **excess of \$1M** from DHS University Programs for educational and training grants of minority graduate and undergraduate students in STEM areas.
- 2010 - **\$9M** for 6 year term in DHS University Programs for renewal of center.
- 2010 - **\$325K**, USDA, APHIS for training first responders of livestock disease outbreaks.

2011-2015. Co-author of “Integrated Program for Reducing Bovine Respiratory Disease Complex (BRDC) in Beef and Dairy Cattle”, a Coordinated Agricultural Project supported by Agriculture and Food Research Initiative Competitive Grant No. 2011-68004-30367 USDA National Institute of Food and Agriculture. Project led by Dr. James Womack of Texas A&M University. **\$9.2M.**

**Small Competitive and Non-Competitive Grants Awards:** (totaling **more than \$500,000**)

Washington State University Sheep Endowment, Oregon Sheep Commission, Superior Farms, Western Breeders Association, Meat Quality Institute, Cal-Ranch Stores, Larsen Farms, Cedar Livestock, Denver Labs, Monsanto, Pfizer Animal Health, American Sheep Industry, National Pork Producers, National Cattlemen's Beef Association, National Lamb Board, Utah Department of Agriculture and Food, Utah State University, Colorado Serum, Scottish Agricultural College, University of Kentucky.

**Funds or In-kind Donations and Gifts:** industry and private supporters in **excess of \$100,000.**

**International Collaborations and Recognitions**

Invited Advisor/Project Reviewer/Lecturer:

Mexico	Australia	Switzerland
Canada	New Zealand	Kazakhstan
United Kingdom	Brazil	Kyrgyzstan

Collaborative Research Projects in Countries:

New Zealand (PI)	Australia (PI)	Brazil (PI)
Belgium (Co-PI)	Mexico (PI)	Kyrgyzstan (PI)
Canada (PI)	Kazakhstan (PI)	

Authored an invited international review on the genetics of ovine reproduction for the Australian Journal of Experimental Agriculture.

**Special Assignments**

**Facilitator**, Symposium on Biological Research for Foreign Animal and Zoonotic Diseases, Third Annual DHS University Network Summit, Washington, DC, March 17–19, 2009.

**Agricultural Administrator**, USDA, ARS, Office of Area Director, Northern Plains Area. Temporary assignment to enhance the quality of ARS project proposals, Research Position Evaluation System (RPES) submissions, and annual reports. (August - October, 2007).

**Mentor** to new ARS scientists. Appointed by USDA, ARS, Northern Plains Area, Area Director (2005 – 2008).

**Project Leader/Principle Investigator:** Production Systems CRIS (1989-1993) and Genetics CRIS (1994 -1998) at the USDA, ARS, U.S. Sheep Experiment Station.

**Research Project Coordinator** appointed by ARS National Program Staff (NPS) and Office of International Research Programs (OIRP) for developing collaborative projects in Kazakhstan (1994-1998).

**Interim Research Leader** during recruitment periods (October, 1990 - May, 1991; August - December, 1995) of Research Leaders for U.S. Sheep Experiment Station. Oversaw budget of \$3.6M and workforce of 35 employees. Management of 6,000 ewes and over 100,000 acres of grazing lands.

**Agency Contact and Project Leader** appointed by USDA, ARS for sheep genetic research with the Kyrgyzstan Sheep Breeding Institute, Bishkek (1994-1998).

**Liaison Contact** appointed by USDA, ARS for USDA/1890 Cooperative Research with Alabama A&M University (199-1998) and Prairie View A&M University (1995-1998).

**Project Leader** (1995-1998) for a multi-institutional (7) cooperative study to investigate biological mechanisms influencing growth and composition of callipyge lambs.

**Coordinator and Project Leader** (1997-1999) for a multi-institutional (6) cooperative study to develop commercially acceptable procedures to tenderize callipyge lamb.

**Chair**, Institutional Animal Care and Use Committee, U.S. Sheep Experiment Station, 1988 – 1994. Developed the initial set of guidelines for IACUC related to an open range livestock production system.

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## Member or Advisee of Graduate Student Committees

Scott Brodie	PhD	Colorado State University	1989 - 1992
Andre de la Concha Bermejillo	PhD	Colorado State University	1989 - 1992
Mark Anderson	MSc	University of Wyoming	1989 - 1990
Mary Westman	MSc	Washington State University	1991 - 1993
Quince Olsen	MSc	University of Wyoming	1992 - 1993
Owen Rice	PhD	Utah State University	1993 - 1994
David Wishmeyer	PhD	Utah State University	1990 - 1995
Fahad Soliman Al Hur	MSc	Colorado State University	1995 - 1996
David Brown	PhD	University of Wyoming	1994 - 1996
Ena van Zyl	PhD	University of Nebraska	1996 - 1998
Kathy Hanford	PhD	University of Nebraska	1996 - 2000
Kent Lechi	MSc	Washington State University	1997 - 1999
Rami Sawalha	PhD	University of Nebraska	2001 - 2003
Randi Hughes-Friare	MSc	Texas A&M	2010 – 2011

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## Postdoctoral Associate

Hakan Sakul, 1993-1995 PhD University of Minnesota, 1990. Dr. Sakul is now Executive Director and Head of Diagnostics for Research and Development Division at Pfizer, San Diego, CA.

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## **Significant Invitations**

*More than 150 invited presentations at national, international, professional, university, and industry conferences.*

### **Selected Recent Invitations**

“Developing an Institution's Strategic Plan for Research.” Society for Research Administrators (SRA) International Annual Meeting, New Orleans, LA. October 26, 2013. (Future)

“Facilitating the Development of an Institutional Strategic Research Plan,” Western/Southern Sections, Society for Research Administrators International, San Antonio, TX. April 7, 2013.

“Genetic of Disease Resistance: A Livestock Solution?” Missouri Livestock Symposium, Kirksville, MO. December 7-8, 2012.

“One Health Approach to Education and Training for Foreign Animal and Zoonotic Disease”. Third Annual Zoonosis Conference, Tomball, TX. November 6, 2010.

“Research in Animal Disease Models of Interest to the US Pork Industry”, National Pork Board and Iowa Animal Industry Bureau, Des Moines, IA. September 1, 2010.

“One Health Approach to Education and Training for Foreign Animal and Zoonotic Disease”, American Veterinary Medical Association Annual Convention, Atlanta, GA. July 31, 2010.

“Genetic Improvement of Overall Reproductive Success in Sheep”, 4th Simposio Internacional Sobre Caprinos e Ovinos de Corte (SINCORTE), João Pessoa, Paraíba, Brazil. November 17, 2009.

“Information Analysis Systems: Modeling Simulations to Enhance America’s Preparedness for a Catastrophic Livestock Disease”, DHS Science and Technology Visit, College Station, TX. June 1, 2009.

“Accounting for Diseased Animals in Research Trials”, Animal Health Symposium, Joint Annual Meeting of ASAS, ADSA, PSA, AMPA, and CSAS. Denver, CO. July 13, 2010.

“Genetics, Environment, and Bovine Respiratory Disease”, Bovine Respiratory Disease Symposium, Colorado Springs, CO. August 5-6, 2009.

“Advances in Respiratory Disease”, Joint Annual Meeting of ASAS, ADSA, PSA, AMPA, and CSAS, Montreal, Canada. July 12-16, 2009.

“Genetic Resistance to Disease in Cattle”, Texas A&M University Food Animal Conference, College Station, TX. October 11, 2008.

“Genetic Factors Influencing Livestock Susceptibility and Resistance to Pathogenic Diseases”, College of Veterinary Medicine, Texas A&M University, March, 17, 2008.

“Current Knowledge of Genetic Resistance to Bovine Respiratory Disease”, Invited Symposium on Beef Cattle Health, Kansas City, KS, National Cattleman’s Beef Association. December 5, 2007.

“Genetic Resistance to Disease in Cattle”, National Academy of the Veterinary Consultants Annual Conference, Kansas City, MO. August 3-5, 2007.

“Epidemiological Models and Theoretical Opportunities for Genetic Selection to Reduce Disease Impact”, Departmental Seminar, Department Animal Science, University Nebraska, Lincoln November, 2006.

“Genetic and Environmental Factors Associated with Respiratory Disease and Pinkeye in Cattle”, Department of Animal Science, Iowa State University. Ames, March 2006.

“Genetics of Disease Resistance: Opportunities and Challenges” and “Using Genotypic Information to Reduce Disease”, Annual Convention of the American Veterinarian Medical Association, Honolulu, HI, July 15-19, 2006.

“Genetic Selection for Disease Resistance: Challenges and Opportunities” at the Genetic Prediction Workshop of the Beef Improvement Federation 38th Annual Research Symposium. Pearl River, MS. Apr. 18-21, 2006.

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## **Publications**

### **Refereed Journal Articles**

1. Zanella, R., Casas, E., Snowder, G., and Neiberghs. H. Fine mapping of Loci on BTA2 and BTA26 Associated with Bovine Viral Diarrhea Persistent Infection and Linked with Bovine Respiratory Disease in Cattle. *Frontiers in Livestock Genomics* Vol.2 Art.82, 1-14. 2011.
2. Hartley, D. M., Rinderknecht, J. L., Nipp, T. L., Clarke, N. P., and Snowder, G. D. Understanding the potential impacts of Rift Valley fever in the United States. *Emerging Infectious Diseases*. 2011. <http://www.cdc.gov/EID/content/17/8/101088.htm>.
3. Neiberghs, H, Zanella, R., Casas, E., Snowder, G., Wenz, J, Neiberghs, J. S., and Moore, D. Loci on BTA2 and BTA26 are linked with bovine respiratory disease and associated with persistent infection of bovine viral diarrhoea virus 2. *J. Anim. Sci.* 89:907-915. 2011.
4. Snowder, G. Genetics, environment, and bovine respiratory. (INVITED) *Animal Health Research Review* 10(2):117-119. 2009.
5. Snowder, G. D., and Fogarty, N. M. (INVITED) Composite trait selection to improve reproduction and ewe productivity: a review. *Anim. Prod. Sci.* 49:9-16. 2009.
6. Casas, E., and Snowder G. D. A putative quantitative trait locus on chromosome 20 associated with bovine pathogenic disease incidence. *J. Anim. Sci.* 86(10):2455-60. 2008.
7. Snowder, G. D., Van Vleck, L. D., Cundiff, L. V. , Bennett, G. L., Koohmaraie, M., and Dikeman, M. E. Bovine respiratory disease in feedlot cattle: Phenotypic, environmental, and genetic correlations with growth, carcass, and longissimus muscle palatability traits. *J. Anim. Sci.* 85: 1885-1892. 2007.
8. Snowder, G. D., Van Vleck, L. D., Cundiff, L. V., and Bennett, G. L. Bovine respiratory disease in feedlot cattle: Environmental, genetic and economic factors. *J. Anim. Sci.* 84 (8):1999-2008. 2006.
9. Hanford, K. J., Van Vleck, L. D., and Snowder, G. D. Estimates of genetic parameters and genetic trend for reproduction, weight, and wool characteristics of Polypay sheep. *Lvstk. Prod. Sci.* 102(1-2):72-82. 2006.
10. Van Vleck, L. D., Hanford, K. J., and Snowder, G. D. Lack of evidence for cytoplasmic effects for four traits of Polypay sheep. *J. Anim. Sci.* 83:552-556. 2005.
11. Snowder, G. D., Van Vleck, L. D., Cundiff, L. V., and Bennett, G. L. Influence of breed, heterozygosity and disease incidence on estimates of variance components of respiratory disease in preweaned beef calves. *J. Anim. Sci.* 83:1247-1261. 2005.
12. Cushman, R. A., Allen, M. F., Snowder, G. D., Thallman, R. M., and Echternkamp, S. E. Evaluation of ovulation rate and ovarian phenotype in puberal heifers from a cattle population selected for multiple births. *J. Anim. Sci.* 83:1839-1844. 2005.
13. Snowder, G. D., Van Vleck, L. D., Cundiff, L. V., and Bennett, G. L. Genetic and environmental factors associated with incidence of infectious bovine keratoconjunctivitis in pre-weaned beef calves. *J. Anim. Sci.* 83:507-518. 2005.



14. Cockett, N. E., Smit, M. A., Bidwell, C. A., Segers, K., Hadfield, T. L., Snowder, G. D., Georges, M., and Charlier, C. The callipyge mutation and other genes that affect muscle hypertrophy in sheep. *Genet. Sec. Evol.* 37(1):65-81. 2005.
15. Sawalha, R. M., Snowder, G. D., Keown, J. F., and Van Vleck, L. D. Genetic relationship between milk score and litter weight for Targhee, Columbia, Rambouillet, and Polypay sheep. *J. Anim. Sci.* 83:786-793. 2005.
16. Hanford, K. J., Van Vleck, L. D., and Snowder, G. D. Estimates of genetic parameters and genetic change for reproduction, weight, and wool characteristics of Rambouillet sheep. *J. Small Rum. Res.* 57:175-186. 2005.
17. Gaskins, C. T., Snowder, G. D., Westman, M. K., and Evans, M. Influence of body weight, age, and weight gain on fertility and prolificacy in four breeds of ewe lambs. *J. Anim. Sci.* 83:1680-1689. 2005.
18. Snowder, G. D., Hanford, K. J., and Van Vleck, L. D. Comparison of models including cytoplasmic effects for traits of Rambouillet sheep. *Lvstk. Prod. Sci.* 90:159-166. 2004.
19. Snowder, G. D., Stellflug, J. N., and Van Vleck, L. D. Genetic correlation of ram sexual performance with ewe reproductive traits in four sheep breeds. *Appl. Anim. Behav. Sci.* 88:253-261. 2004.
20. Van Vleck, L. D., G. D. Snowder, and K. J. Hanford. Models with cytoplasmic effects for birth, weaning, and fleece weights, and litter size at birth for a population of Targhee sheep. *J. Anim. Sci.* 81:61-67. 2003.
21. Snowder, G. D., and Duckett, S. K. Evaluation of the South African Dorper as a terminal sire breed for growth, carcass, and palatability characteristics. *J. Anim. Sci.* 81: 368-375. 2003.
22. Snowder, G. D., and Van Vleck, L. D. Estimates of genetic parameters and selection strategies to improve the economic efficiency of postweaning growth in lambs. *J. Anim. Sci.* 81:2704-2713. 2003.
23. List, G. R., Steidley, K. R., Neff, W. E., and Snowder, G. D. Physical properties of mutton tallow. *J. Grasas Y Acettes* 54:81-83. 2003.
24. Kuber, P. S., Duckett, S. K., Busboom, J. R., Snowder, G. D., Dodson, M. V., Vierck, J. L., and Bailey, J. F. Measuring effects of phenotype and mechanical restraint on proteolytic degradation and rigor shortening in callipyge lamb longissimus muscle during extended aging. *Meat Sci.* 63:325-331. 2003.
25. Hanford, K. J., Van Vleck, L. D., and Snowder, G. D. Estimates of genetic parameters and genetic change for reproduction, weight, and wool characteristics of Targhee sheep. *J. Anim. Sci.* 81:630-640. 2003.
26. Hanford, K. J., Snowder, G. D., and Van Vleck, L. D. Models with nuclear, cytoplasmic, and environmental effects for production traits of Columbia sheep. *J. Anim. Sci.* 81:1926-1932. 2003.
27. Smit, M., Segers, K., Shay, T., Baraldi, F., Gyapay, G., Snowder, G., Georges, M., Cockett, N., and Charlier, C. Mosaicism of Solid Gold supports the causality of the SNP in determinism of the callipyge phenotype. *Gene.* 164:53-56. 2003.
28. Cockett, N. E., Bidwell, C. A., Charlier, C., Smit, M., Segers, K., Shay, T. L., Karim, L., Snowder, G. D., and Georges, M. Muscle enhanced traits in sheep. *Prog. in Obesity Res.* 9:272-274. 2003.
29. Snowder, G. D., and Van Vleck, L. D. Effect of duration of performance test on variance component estimates for lamb growth rate. *J. Anim. Sci.* 80:2078-2084. 2002.
30. Snowder, G. D., Stellflug, J. N., and Van Vleck, L. D. Heritability and repeatability of sexual performance of rams. *J. Anim. Sci.* 80:1508-1511. 2002.
31. Snowder, G. D. (INVITED) Composite trait selection for improving lamb production. *Sheep and Goat Res. J.* 17:42-48. 2002.
32. Smit, M., Segers, K., Carrascosa, L. G., Shay, T., Barald, F., Gyapay, G., Snowder, G., Georges, M., Cockett, N., and Charlier, C. Mosaicism of Solid Gold supports the causality of a noncoding A-to-G transition in the determinism of the callipyge phenotype. *Genetics* 163:453-456. 2002.

33. Rule, D. C., Moss, G. E., Snowder, G. D., and Cockett, N. E. Adipose tissue lipogenic enzyme activity, serum IGF-1, and IGF-binding proteins in the callipyge lamb. *Sheep and Goat Res. J.* 17:39-46. 2002.
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35. Li, Hong, Snowder, G. D., and Crawford, T. B. Effect of passive transfer of maternal immune components on infection with ovine herpesvirus 2 in lambs. *Am. J. Vet. Res.* 63:631-633. 2002.
36. Hanford, K., Snowder, G. D., and Van Vleck, L. D. Estimates of genetic parameters and genetic change for prolificacy, weight and wool characteristics of Columbia sheep. *J. Anim. Sci.* 80:3086-3098. 2002.
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40. Li, H., Hua, Y., Snowder, G., and Crawford, T. B. Levels of malignant catarrhal fever viral DNA in nasal secretions and blood of sheep: implication for transmission. *Vet. Microbiol.* 79:301-310. 2001.
41. Cockett, N. E., and Snowder, G. D. Genetic influences on carcass merit of sheep. *J. Anim. Sci.* 79(2): 38-44. 2001
42. Bromley, C. M., Van Vleck, L. D., and Snowder, G. D. Genetic correlations for litter weight weaned with growth, reproduction and wool traits in Columbia, Polypay, Rambouillet and Targhee sheep. *J. Anim. Sci.* 79:339-346. 2001.
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44. Duckett, S. K., Snowder, G. D., and Cockett, N. E. Effect of the callipyge gene on muscle growth, calpastatin activity, and tenderness of three muscles across the growth curve. *J. Anim. Sci.* 78:2836-2841. 2000.
45. Bromley, C. M., Van Vleck, L. D., and Snowder, G. D. Genetic parameters among weight, prolificacy and wool traits in Columbia, Polypay, Rambouillet and Targhee sheep. *J. Anim. Sci.* 78:846-858. 2000.
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47. Okut, H., Van Vleck, L. D., van Zyl-Bromley, C. M., and Snowder, G. D. Genotypic expressions at different ages: II. Wool traits of sheep. *J. Anim. Sci.* 77:2366-2371. 1999.
48. Okut, H., Van Vleck, L. D., van Zyl-Bromley, C. M., and Snowder, G. D. Genotypic expressions at different ages: I. Prolificacy traits of sheep. *J. Anim. Sci.* 77:2357-2365. 1999.
49. Li, H., Snowder, G. D., and Crawford, T. B. Production of malignant catarrhal fever virus-free sheep. *Vet. Microbiol.* 65:167-172. 1999.
50. Cockett, N. E., Jackson, S. P., Snowder, G. D., Shay, T. L., Berghams, S., Beever, J. E., and Georges, M. The callipyge phenomenon: evidence for unusual genetic inheritance. *J. Anim. Sci.* 77(2):221-227. 1999.
51. Busboom, J. R., Wahl, T. I., and Snowder, G. D. Economics of callipyge lamb production. *J. Anim. Sci.* 77(2):243-248. 1999.
52. Solomon, M. B., Carpenter, C. E., Snowder, G. D., and Cockett, N. E. Tenderizing callipyge lamb with the hydrodyne process and electrical stimulation. *J. Muscle Foods* 9:305-311. 1998.

53. Li, Hong, Snowder, G. D., O'Toole, D., and Crawford, T. B. Transmission of ovine herpes virus 2 in lambs. *J. Clin. Microbiol.* 36:223-226. 1998.
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### **Other Publications**

*More than 150 conference proceedings, white papers, technical and popular press articles.*

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