



**Ultrasound Guidelines Council**

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**Ultrasound Guidelines Council  
Field Technician Study Guide**

2012 Edition

**Introduction**

Mike Tess - Editor

July 23, 2012

The Ultrasound Guidelines Council (UGC) Study Guide is intended to serve as an information resource for UGC Field Technicians. The information in this document will help new technicians prepare for certification and serve as a reference for experienced technicians.

The 2012 edition has been written for online access. Components may be downloaded as separate files. Our hope is that by publishing the Study Guide in this manner, it will be convenient to access and easier to update and edit.

Authors of this edition are former and current members of the UGC Board of Directors and UGC Field Technicians. I thank them all for volunteering their time and expertise to complete this project. I have edited the chapters in an effort to make the style and grammar more consistent.

I hope you find the information useful.

Sincerely,

Michael W. Tess, Ph.D.  
Executive Director

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**Outline**

- I. History of Technician Certification, Centralized Ultrasound Processing and UGC**  
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- III. Ultrasound and the Beef Carcass** – *Scott Greiner*
- IV. Ultrasound and Genetics** – *Matt Spangler and Dan Moser*
- V. Ultrasound Scanning Technique** – *Craig Hays and Andy Meadows*
- VI. Ultrasound Image Quality** – *Becky Hays, Mark Henry and Rethel King*
- VII. UGC Field Certification** – *Mike Tess*
- VIII. The UGC Partnership in Action** – *Mike Tess, Bill Bowman, Larry Keenan, Wade Shafer and Robert Williams*
- IX. Frequently Asked Questions** – *Mike Tess*
- X. Resources for Further Study and Information** – *Mike Tess*
- XI. Quality Data for Genetic Evaluation** – *Mike Tess and Casey Worrell*

## About the Authors

**Bill Bowman** currently is the COO and Performance Programs Director for the American Angus Association. Bill has a B.S. degree in Animal Science from the University of Missouri and has worked in various roles for American Angus since 1992. Bill currently serves on the UGC Board of Directors.

**Scott Greiner, Ph.D.** is a Professor and Extension Animal Scientist in the Department of Animal and Poultry Sciences at Virginia Tech. Dr. Greiner was raised on a diversified livestock farm in Eastern Iowa, and attended Iowa State University where he earned a B.S. in Animal Science in 1989. His graduate studies included an M.S. from Michigan State University and a Ph.D. from Iowa State. His graduate work at ISU was fundamental in the incorporation of ultrasound as a genetic improvement tool in beef cattle, including the initiation of centralized processing of images. He resides in Christiansburg, VA along with his wife Lori and daughters Kaylee and Leah. Scott currently serves on the UGC Board of Directors.

**Becky Hays** is the owner/manager of UltraInsights Processing Lab. Becky began her ultrasound career in 1998 as a field technician and worked at the first Centralized Ultrasound Processing (CUP) Lab at Iowa State University. It was here that she found her passion for working with breed associations, field technicians and with research and development. In 2002, she transitioned to the ownership of her own lab, UltraInsights. She, along with her husband Craig and their children also raise SimAngus seedstock cattle. Becky currently serves on the UGC Board of Directors.

**Craig L. Hays** began scanning in 1990 while working on his master's degree at Auburn University. After graduating, he started an ultrasound business and scanned privately for five years before accepting a position as the manager of the first Centralized Ultrasound Processing (CUP) Lab at Iowa State University. He has been involved in all phases of the ultrasound industry, from research and development, to training field technicians, to helping develop protocol used today. Craig now works primarily as a field technician and raises SimAngus seedstock cattle.

**Mark Henry** is the managing partner of Walter and Associates, LLC. centralized ultrasound processing lab in Ames, IA. Mark currently serves on the UGC Board of Directors.

**Larry Keenan** is the Director of Breed Improvement for the Red Angus Association of America. Larry currently serves as the chairman of the UGC Board of Directors.

**Rethel King** is the president of Designer Genes Technologies Inc. (DGT) and International Livestock Image Analysis Centralized Ultrasound Processing Lab (ILIA). He has been a certified technician since 1995. DGT has developed ultrasound software for beef cattle, sheep, swine and poultry carcass evaluation. Rethel currently serves on the UGC Board of Directors.

**Andy Meadows** attended Virginia Tech where he received BS in Animal Science (1990), MS in Reproductive Physiology (1992), and DVM (1996) degrees. After working in a beef cattle veterinary practice in Mandan, ND, he returned to VA to found Springwood Livestock Management Services. His practice focuses on food animal management and herd health, with emphasis on reproductive and carcass ultrasound services. Andy resides in Wytheville, VA with his wife Carrie. He has two daughters, Kaitlyn and Haley. He and his family operate a small ranching operation including Angus cattle and Quarter Horses.

**Dan Moser, Ph.D.** is an Associate Professor in the Department of Animal Sciences and Industry at Kansas State University. He earned his B.S. from Kansas State University, and his M.S. and Ph.D. from the University of Georgia. He is a former UGC board member and served as UGC statistician from 2001 to 2007. He is faculty coordinator for the K-State Purebred Beef Teaching Unit, and manages his family's small Hereford seedstock operation.

**Wade Shafer, Ph.D.** – currently serves as the Director of Performance Programs for the American Simmental Association, and is a member of the UGC Board of Directors. Wade earned his Ph.D. degree in Animal Breeding and Genetics from Colorado State University. A former seedstock producer, Wade and his wife, Kathy, now split time between Bozeman, MT and Detroit Lakes, MN.

**Matt Spangler, Ph.D.** currently serves as an Associate Professor and Extension Beef Genetics Specialist at the University of Nebraska-Lincoln. He received his B.S. Degree from Kansas State University and a M.S. (Iowa State University) and Ph.D. (University of Georgia) in Animal Breeding and Genetics. His research and extension work focuses on the evaluation and implementation of genetic selection tools and programs including genomic based approaches.

**J.R. Tait, Ph.D.** has been involved with the use of ultrasound for body composition evaluation in livestock species for many years. He was first certified in beef cattle in 1997 and then worked as both a field technician and a laboratory technician using multiple technologies within the research team at Iowa State University which developed centralized ultrasound processing for beef cattle in North America. J R has also been certified to ultrasound swine and sheep for body composition traits. J R has participated as an invited trainer for multiple international ultrasound training programs to help train new technicians on the procedures and techniques of using ultrasound to evaluate body composition in beef cattle. J R currently serves on the UGC Board of Directors.

**Mike Tess, Ph.D.** currently serves as the Executive Director of UGC. Mike earned his B.S., M.S. and Ph.D. degrees in Animal Science. He served on the faculties of both North Carolina State University (1981-88) and Montana State University (1988-2009). He currently runs his own consulting business (Packhorse Services, LLC).

**Robert Williams, Ph.D.** currently serves on the UGC Board of Directors. Robert earned his B.S. at Oklahoma State University in Animal Science and his M.S. and Ph.D. in Animal Science from the University of Georgia. He currently serves as Director of Breed Improvement and Foreign Marketing with the American-International Charolais Association.

**Casey Worrell** currently serves as the Field Technician Representative on the UGC Board of Directors. He received his B.S. Degree from Texas A&M University. While at Texas A&M University he participated on the National Champion Meats Judging Team and Livestock Judging Team. He has been a certified field technician since 1999. He currently holds both lab and field certifications.

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**Attached Files and Links**

Chapter I  
UGC Operating Protocol

Chapter III  
<http://bovine.unl.edu/>

Chapter IV  
<http://www.beefimprovement.org/library.html>  
<http://www.beefimprovement.org/proceedings.html>

Chapter VI  
UGC Image Quality Scoring System

Chapter VIII  
Example AAA Barnsheet  
Example AAA Ultrasound Report  
<http://www.beefimprovement.org/library.html>

Chapter IX  
UGC Policy on Re-certification in Absentia  
Q&A Regarding Re-certification in Absentia  
UGC Policy on Continuing Education  
Breed Ultrasound Policy Files  
Breed Age Range Table

Chapter X  
<http://www.beefimprovement.org/>  
<http://www.nbcec.org/>  
<http://ansc-cpanel.unl.edu/CDEBeefQualityandYieldGrades/index.htm>  
<http://beef.unl.edu/web/beef/learning/ultrasoundbasics.shtml>  
<http://liferaydemo.unl.edu/web/anisci/ANSCExtensionMeatScienceLearningAids>

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