

**Aaron Reeves***Curriculum vitae*

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Animal Population Health Institute  
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**Education**

In progress      Enrolled in the Ph.D. Program, Department of Clinical Sciences, Colorado State University, Fort Collins, Colorado.

*Tentative dissertation topic:* The design and application of stochastic computer models for the study of endemic livestock diseases.

*Co-advisors:* Dr. Ashley E. Hill and Dr. M.D. Salman

Aug. 1999      Master of Science in Botany, Colorado State University, Fort Collins, Colorado.

*Thesis: MicroMeasure: A new tool for the collection and analysis of cytogenetic data.*

*Advisor:* Dr. F. Brent Reeves (*no relation*)

May 1994      Bachelor of Science in Biology, College of William and Mary, Williamsburg, Virginia, *cum laude* and with Highest Honors in Biology.

*Thesis:* Stress compound production by callus tissue of *Rosa rugosa*, and other studies of cultured rose cells and tissues.

*Advisor:* Dr. Martin C. Mathes

**Academic appointments**

June 2004 – Present      Research Associate, Animal Population Health Institute, College of Veterinary Medicine & Biomedical Sciences, Colorado State University.

- Design and development of stochastic simulation models of epidemiological phenomena
- Software development for high-performance and parallel computing

Jan. 2000 – May 2004      Research Associate and Information Technology Coordinator, Department of Biology, Colorado State University.

- Laboratory research in plant development and molecular biology
- Development of custom computer programs for a variety of scientific needs
- Database design and administration, using a variety of SQL-driven relational database management systems on Windows and Linux platforms
- Web server and web site design, implementation, and maintenance
- Training and support for approximately 110 end users on a wide variety of common and specialized computer software

Aug. 1994 – Dec. 1999      Graduate Assistant, Department of Biology, Colorado State University.

### **Reviewed papers**

Simmons, M.P., L.-B. Zhang, C.T. Webb, and **A. Reeves**. 2006. How can third codon positions outperform first and second codon positions in phylogenetic inference? An empirical example from the seed plants. *Syst. Biol.* 55: 245 – 258.

Simmons, M.P., **A. Reeves**, and J.I. Davis. 2004. Character-state space versus rate of evolution for phylogenetic inference. *Cladistics* 20: 191 – 204.

**Reeves, A.**, R.L. Parsons, J.W. Hettinger, and J.I. Medford. 2002. *In vivo* three-dimensional imaging of plants with optical coherence microscopy. *Journal of Microscopy* 208: 177 – 189.

**Reeves, A.** 2001. *MicroMeasure*: a new computer program for the collection and analysis of cytogenetic data. *Genome* 44: 439 – 443.

Hettinger, J.W., M. De Le Peña Mattozzi, W. Meyers, M.E. Williams, **A. Reeves**, R.L. Parsons, R.C. Haskell, D. Petersen, R. Wang, and J.I. Medford. 2000. Optical coherence microscopy: A technology for rapid, *in vivo*, non-destructive visualization of plants and plant cells. *Plant Physiology* 123: 3-16.

Hauber, D.P., **A. Reeves**, and S.M. Stack. 1999. Synapsis in a natural autotetraploid. *Genome* 42: 936-949.

Anderson, L.K., **A. Reeves**, L.M. Webb, and T. Ashley. 1999. Distribution of crossing over on mouse synaptonemal complexes using immunofluorescent localization of MLH1 protein. *Genetics* 151: 1569-1579.

### **Other publications**

Hill, A.\*, and **A. Reeves\***. 2006. User's Guide for the *North American Animal Disease Spread Model 3.0*. Available online at <<http://www.naadsm.org/guide.php>>.

**The NAADSM Project Team**. 2006. Model description for the *North American Animal Disease Spread Model*. Available online at <<http://www.naadsm.org/documentation.php>>.

\* Indicates joint first authorship

### **Major programs for scientific computing**

**The NAADSM Project Team**. *North American Animal Disease Spread Model 3.0*

The *North American Animal Disease Spread Model (NAADSM)* is a mechanistic model that uses stochastic methods to simulate the spread of highly contagious diseases in heterogeneous livestock populations. *NAADSM* is being developed by a team assembled from universities and government agencies in the United States and Canada. The application is used by government and academic epidemiologists for emergency preparedness and other research purposes.

The third version of the *North American Animal Disease Spread Model* is based on earlier versions conceived and developed by Mark Schoenbaum (Schoenbaum, M.A., and W.T. Disney, 2003, *Prev Vet Med* 58:25). It is available from the *NAADSM* project web site, <<http://www.naadsm.org>>.

**Reeves, A.** *Atriplex*

*Atriplex* is a client/server platform for carrying out computationally intensive tasks in a simple distributed fashion. *Atriplex* client machines are standard multipurpose desktop computers. When these computers are not actively employed by users, they are automatically assigned tasks by the *Atriplex* server. *Atriplex* client software is used to control other applications running on the client computers to

perform the designated tasks. Upon task completion, *Atriplex* clients return processed data and check out additional tasks from the server. Running tasks are automatically suspended whenever a user employs a client computer, so that the user experiences no delay or reduction in performance. Beta versions of *Atriplex* are currently deployed in research labs at the United States Department of Agriculture, and have logged several thousand hours of computing time. Client, server, and auxiliary *Atriplex* applications are currently available from the author, and are scheduled for initial public release in fall 2006 (see *Manuscripts in preparation*, above).

**Reeves, A.** and J. Tear. *MicroMeasure*

*MicroMeasure* is an image analysis application for cytologists and cytogeneticists. It may be used to collect data for a wide variety of chromosomal parameters from electronically captured or scanned images. Unlike similar applications, *MicroMeasure* may be individually configured by the end user to suit a wide variety of research needs. This program can be used with most common personal computers, and requires no unusual or specific hardware. *MicroMeasure* can be further adapted for other areas of research in which linear measurements from digitized images are needed. *MicroMeasure* has been used by hundreds of researchers in labs around the world, and is available via the World Wide Web at <<http://www.biology.colostate.edu/MicroMeasure>> (See Reeves 2001, above).

**Selected presentations**

Duarte P.C., **A. Reeves**, and S. Gillette. 2005. *Chronic Wasting Disease (CWD) Risk Assessment Utility*. A tool to assess risk of disease introduction and likelihood of disease detection. An oral presentation delivered by P. Duarte at the *Conference of Research Workers in Animal Diseases (CRWAD) Meeting*, December 4 – 6 2005, St. Louis, Missouri.

**Reeves, A.**, R.L. Parsons, and J.I. Medford. Optical coherence microscopy for *in vivo* imaging of gene expression. A poster presented at *Plant Biology 2002* (Annual meeting of the American Society of Plant Biologists), August 3 – 7, 2002, Denver, Colorado.

J.I. Medford, **A. Reeves**, and R.L. Parsons. Three-dimensional *in vivo* imaging of plants. A poster presented at *Plant Biology 2002* (Annual meeting of the American Society of Plant Biologists), August 3 – 7, 2002, Denver, Colorado.

Hettinger, J.W., M. De Le Peña Mattozzi, W. Meyers, M.E. Williams, **A. Reeves**, R.L. Parsons, R.C. Haskell, D. Petersen, R. Wang, and J.I. Medford. Optical coherence microscopy: A rapid, *in vivo*, non-destructive imaging technology. A poster presented at the *Fourth Annual Rocky Mountain Plant Biotechnology Symposium*, April 19, 2000, Fort Collins, Colorado.

**Reeves, A.** *MicroMeasure*: A new tool for the collection and analysis of cytogenetic data. A poster originally presented at the *Third Annual Rocky Mountain Plant Biotechnology Symposium*, April 17, 1999, Fort Collins, Colorado.

### ***Other professional experience***

- 1996 – Present      **Advanced web site development and programming**  
Reeves Digital Development, Loveland, Colorado
- Network and Internet solutions for individuals, schools, and businesses.
  - Internet database, search engine, and application design and deployment
  - Web site development
  - Advanced scripting for interactive web sites
  - Custom desktop application programming

Clients have included Hewlett-Packard Company, Agilent Technologies, ERA Mason-Dixon Realty, and Big Sandy School District.

### ***Teaching experience***

As a teaching assistant at Colorado State University, I instructed laboratory sections for a variety of introductory biology and botany courses, including standard and honors sections of Attributes of Living Systems (BY/LS 102), standard and honors sections of Biology of Organisms (BY103), Basic Concepts of Plant Life (BZ105), and Principles of Plant Biology (BZ120).

I have also served as a substitute instructor in introductory as well as advanced courses, including BY/LS 102 and Chromosomes of Eukaryotes (BZ 402).

### ***References***

Dr. M.D. Salman, Professor and Director  
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Dr. Ashley E. Hill, Assistant Professor  
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