



New Mexico Network for Women in Science and Engineering Technical Symposium and Annual Meeting

Friday Oct 8, 2010

12:00 – 4:00 PM Pre-event Geology Field Trip
6:00 – 10:00 PM Welcome Reception – Hunting Lodge
Star Gazing – weather permitting

Saturday Oct 9, 2010

9:00 -11:00 AM Annual Meeting
11:00 – 1:30 Lunch and Personal Time
1:30 – 5:00 Technical Symposium

1:00 – 1:30 Mary Campbell
Organic Methods for Growing Food in New Mexico.

1:30 - 2:00 Claudia Barreto
The End of the Age of Dinosaurs: Paleocological Analysis of an Extinction Event.

2:05 - 2:35 Nan Founds
Tritium and He-3

3:35- 3:05 Eleanor Walther
Supercomputing challenge, GUTS, and GUTS Y GIRLS

3:05– 3:35 Elizabeth Kallman
The Inaugural New Mexico Celebration of Women in Computing, October 14-15 2010

3:40 – 4:15 Diane Oyen
"Modeling Brain Activity as a Bayesian Network under Varying Conditions"

4:15 – 4:50 Melanie Madrid
YWCA TechGYRLS

6:00 – 10:00 Social Hour
Dinner
Keynote Speaker – **Cathy Janik**, *Geologic Evolution of the Valles Caldera*
Impact Award Presentation
Star Gazing – weather permitting

Sunday Oct 10, 2010

9:00 Board Meeting
first meeting of 2011 board – all are welcome to attend

Technical Presentation Abstracts

1:00 – 1:30 **Mary Campbell**, Organic Methods for Growing Food in New Mexico.

Talk will describe small organic farm in northern NM with emphasis on the trials and successes of growing the "Three Sisters" and the native chili. Samples will be provided.

1:30 - 2:00 **Claudia Barreto**, The End of the Age of Dinosaurs: Paleoecological Analysis of an Extinction Event.

Results of a three-year field study of family-level patterns of ecological diversity of dinosaurs in the Hell Creek Formation of Montana and North Dakota show no evidence (probability $P < 0.05$) of a gradual decline of dinosaurs at the end of the Cretaceous. Stratigraphic reliability was maintained through a tripartite division of the Hell Creek, and preservational biases were corrected for by comparison of results only from similar fades as well as through the use of large-scale, statistically rigorous survey and collection procedures. The findings are in agreement with an abrupt extinction event such as one caused by an asteroid impact.

2:05 - 2:35 **Nan Founds**, Tritium and He-3

no abstract available

3:35- 3:05 **Eleanor Walther**, Supercomputing challenge, GUTS, and GUTS Y GIRLS

no abstract available

3:05– 3:35 **Elizabeth Kallman**, Inaugural New Mexico Celebration of Women in Computing, October 14-15 2010

The New Mexico Celebration of Women in Computing (NMCWiC) will take place on 14-15 October 2010 at the University of New Mexico Centennial Engineering Center in Albuquerque, New Mexico, and is the first of its kind in the Southwest

3:40 – 4:15 **Diane Oyen**, Modeling Brain Activity as a Bayesian Network under Varying Conditions

A Bayesian network is a standard tool in statistical data mining that gives a compact representation of relationships among variables in data. Thus machine learning algorithms often fit a Bayesian network to experimental data which models the underlying structure of relationships among data variables. This data may be collected under various experimental conditions to explore how the structure of the Bayesian network changes across conditions. Furthermore, conditions can be combined to further explore the effects on network structure in various contexts.

For example, the functional network of the human brain may be observed while performing different tasks, such as reading or listening. From these two conditions, four different task contexts could be realized: reading and listening at the same time, reading alone, listening alone, and the control environment. Thus, we could learn four different networks, but we do not expect these networks to be independent of each other. The reading-and-listening network likely includes structures found in both the reading network and the listening network. However, not all contexts are directly related.

Often the amount of data available to learn these networks is limited, thus it is advantageous to leverage the full dataset across the contexts to learn these similar networks. Furthermore, our approach has the ability to estimate networks under contexts for which there is little or no data at all available by using data from similar contexts. Exploitation of the similarity among contexts is especially useful in studies where it is difficult to directly manipulate conditions, such as in estimating functional brain networks for schizophrenic patients under various medications, as there could be many combinations of conditions with little data.

4:15 – 4:50 **Melanie Madrid**, YWCA TechGYRLS

no abstract available