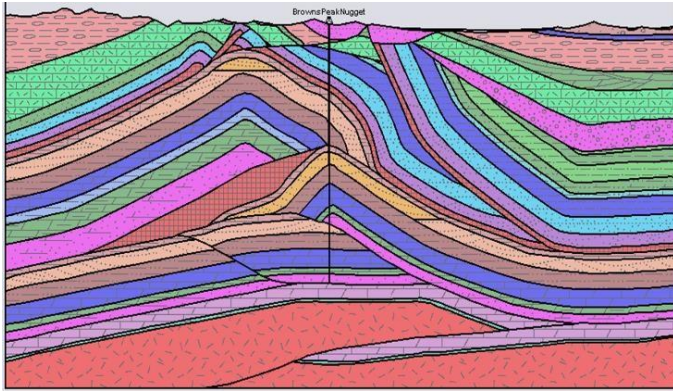# TerraEx Group - Public Workshop Series

April 5-9, 2021

"Structural Modeling with LithoTect Software" by Catalina Luneburg

This workshop is conducted online with

3.5 - hr sessions over 5 days

This workshop provides an overview of the tools and techniques for balancing and restoring cross- sections using LithoTect Software. An overview of the software will be given, starting with creating the project and data base, constructing the cross section and using basic interpretation tools such as fault prediction. Structural modeling tools will be introduced with a discussion of the concepts of structural balancing and kinematic modeling. Different restoration methods are used in hands-on exercises such as time-step restorations, backstripping with decompaction and isostacy, and forward modeling in compressional and extensional tectonic settings.

Catalina Luneburg, Ph.D

Catalina Luneburg is the founder and director of TerraEx Group LLC and responsible for developing and promoting the new services model as well as daily operations. She is a recognized Structural Geology on geologic interpretation and validation, Structural Geology modeling, cross section balancing and 2D/3D time-step restorations as well as HC reserve estimates, 3D framework building and fracture predict ion analyses.

Previously, Luneburg was a Product Manager and Senior Scientist at Landmark/Halliburton developing geomodelling workflows and managing/designing software applications such as LithoTect and DecisionSpace. For several years she worked with the original LithoTect designer team at GeoLogic Systems as well as with MOVE software at Midland Valley.Luneburg holds a doctorate in Natural Sciences from the Swiss Federal Institute of Technology in Zurich, Switzerland, and a master's degree (Diploma) in Geology/Paleontology from the Ludwig-Maximilian University in Munich, Germany. She has published extensively in her field including several books, and has authored a number of patents. She is fluent in English, German, and Spanish, and proficient in French and Italian.

Time:	Mon, April 05 – Fri, April 09, 2021 at 8 – 11:30 pm Central Time US (Houston) or per agreed time
Venue:	ZOOM Meeting Platform. If you require a different online meeting platform, we can arrange for that.
Included:	Manual pdf, certificates on request follow-up support
Price:	Single participant USD 975/900*; Multi-client USD 3,250, Inhouse USD 4,250
Register:	Follow link to register

CONTACT TerraEx Group at info@terraexgroup.com or ++ 303 319 3043

Single participant - regular price for 1 participant (public schedule)

Single participant - discount price for 1 participant unemployed, academics and > 1 course booked (public schedule)*

Multi-client price for group up to 5 participants from the same company (public or custom schedule)

Inhouse price for group up to 25 participants from the same company (custom schedule)

Workshop Outline

- **DAY 1 "The LithoTect Project" (8-11:30am)**
- *Course Introduction and the Value of Validation (PPT)*
- Overview LithoTect user interface, program structure
- Create the Lithotect project, set up CRS, scale etc
- Create a Stratigraphic column
- Import data: Images and geotiffs, Digital Elevation Models (DEM), GIS data, 2D Seismic, wells

- **DAY 2 "Basic Interpretation Tools" (8-11:30am)**
- *Relevant Structural Geology Concepts (PPT)*
- Line drawing and editing, creating regions
- Correlation snapshots, autotracking
- Dynamic projection
- Fault prediction and depth to detachment
- Hangingwall forward modeling

- **DAY 3 "Restoration and Balancing Tools" (8-11:30am)**
- *Introduction to Structural Validation (PPT)*
- Kinematic models and restoration algorithms: flexural slip, vertical/oblique shear, trishear etc
- Restoration methods: time-step restoration, forward modeling, backstripping etc
- Transform operations
- Fault-slip options
- Independent and contiguous restoration

- **DAY 4 "Compressional Restoration Workflows" (8-11:30am)**
- *Compressional structures and Fold- and Thrust Belts (PPT)*
- Compressional restoration workflows – advanced techniques
- Fault-related folding scenarios: Fault-propagation folds, trishear, fault-bend folds
- Interactive balancing and restoration of a Fold- and Thrust belt

- **DAY 5 "Extensional Restoration Workflows" (8-11:30am)**
- *Extensional structures and Salt Tectonics (PPT)*
- Extensional restoration workflows – advanced techniques
- Backstripping with decompaction, Isostacy and Subsidence
- Salt restoration workflows
- Geometry Fields: dip, curvature and strain

This workshop will adjust to participants experience level and interest as much as possible. Therefore, we will ask you beforehand to provide some information why you are taking this course, what your experience level is with the subject matter and the type of work you want to apply the learned content.