

## **Curriculum Vitae**

### **John Louis Panian**

#### Address:

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#### Education:

1992 - 2002 Texas A&M University, College Station, TX., Ph.D., Geology  
1983 - 1987 University of Pittsburgh, Pittsburgh, PA, M.S., Geology  
1978 - 1983 University of Pittsburgh, Pittsburgh, PA, B.S., Geology

#### Experience:

09/2008 - 05/2009 – Research Associate, Texas A&M University, College Station, TX  
Duties: Finite element modeling of basement perturbations in the sequential development of thrust ramps in fold and thrust belts.

12/2006 - 08/2008 - Senior Applied Geoscientist, BJ Services Co., Tomball, TX  
Duties: Geomechanical modeling of oil/gas well design. Computer and numerical modeling of reservoir stresses and the relation between stress/strain behavior on proposed well design. This was done by incorporating reservoir material properties such as strength, permeability and porosity in conjunction with well casing, cement and mud material properties.

01/2003 - 06/2003 – Research Associate, Texas A&M University, College Station, TX  
Duties: Utilized the finite element model developed by Los Alamos National Labs (LANL) to study fluid flow through a faulted terrain. Initiated a study incorporating plasticity theory into an existing elasticity model that dealt with fault tip interactions.

08/1992 - 12/2002 - Research/Teaching Assistant, Texas A&M University, College Station, TX  
Duties: Research Assistant: Research for my dissertation topic, “The effect of mechanical stratigraphy on ramp initiation and spacing in foreland fold and thrust belts”. The study utilized a finite element model employing plasticity theory for predicting location and sequential development of thrust sheets in an evolving fold and thrust belt. Several semesters work outside my research topic included finite difference modeling of fluid and thermal flow in a deforming stratigraphic terrain and a finite difference study of the effects of stratigraphic anisotropy on fluid flow through dipping strata. I also co-taught seminar on “Hydrotectonics” with my PhD advisor, David Wiltschko (Fall semester, 1996).

Duties: Teaching Assistant: Physical Geology lab supervision for both undergraduate majors and non-majors and Structure & Tectonics for geology and petroleum engineering majors.

05/1990 - 07/1992 – Geologist/Physical Scientist, UEC Environmental Systems, Pittsburgh, PA  
Duties: Site supervision of subcontractors, soil and groundwater analysis, and report preparation for underground storage tank (UST) removal sites and steel plant facilities; preparation of Superfund Amendments and Reauthorization Act (SARA) reports of atmospheric discharge of toxic chemicals at steel facilities; Phase I environmental impact studies for real estate transfers including budget preparation and supervision.

08/1989 - 05/1990 - Geologist, Groundwater Technology, Inc., Warrendale, PA

Duties: Site supervision of subcontractors, soil and groundwater analysis, and report preparation for UST removal sites and other environmentally hazardous sites. Responsibilities also included budget supervision for individual sites.

03/1989 - 08/1989 - Consulting Geologist, U.S. Bureau of Mines, Pittsburgh Research Center

Duties: Responsibilities included magnetic and electrical conductivity surveys. I assisted in laboratory experiments to compare shear strength of grouted and un-grouted mine tailing samples as a possible means to prevent movement of strip mine detritus. I also prepared a suite of pozzolan samples consisting of fly ash, lime and water with varying acidities to produce a grouting cement to contain mining tailings that produce acid mine drainage (AMD).

#### Awards:

- John and Francis Handin Graduate Fellowship, Texas A&M University, 1998.
- National Science Foundation (NSF) funded research proposal, `Fluid flow in a deforming thrust terrain`, 1997, co-authored with Dr. David Wiltschko.
- Geological Society of America, Student Grants-in-Aid, 1995, for `The hydromechanical effect on the formation of foreland fold and thrust belts`.
- Michel T. Halbouty Fellowship, Texas A&M University, 1992/93.

#### Publications:

##### Refereed journals:

- Panian, J., and D.V. Wiltschko, 2007, The effect of mechanical stratigraphy on thrust ramp evolution in foreland fold-and-thrust belts, *Journal of Geophysical Research*, conditional acceptance 5/07.
- Panian, J., and D.V. Wiltschko, 2007, Ramp formation and spacing in a homogeneous thrust wedge, *Journal of Geophysical Research*, v. 112, B05417.
- Panian, J., and D.V. Wiltschko, 2004, Ramp initiation in a thrust ramp, *Nature*, v. 427, no. 6975, p. 624-627.
- Panian, J., and W.L. Pilant, 1990, A possible explanation for foreland fold and thrust propagation, *Journal of Geophysical Research*. v. 95, pp. 8607-8615.

##### Technical journals:

- Jordan, A., J. Panian and R. Maharidge, 2007, Modeling advances ER openhole horizontal gravel packing, *Journal of Petroleum Technology*, v. 59, no. 9, pp 26-30.

#### Abstracts:

- Wiltschko, D. V., F. Rodriguez-Roa, and J. Panian, 2009, Role of pre-existing normal faults in controlling thrust ramp locations: An example from the Southern Taiwan orogen, AAPG Annual Meeting.
- Wiltschko, D. V., F. Rodriguez-Roa, and J. Panian, 2006, Kinematic and modeling constraints on the transition from accretion to collision in southern Taiwan, *GSA Abstracts with Programs*, v. 39, no. 6.
- Panian, J., and D.V. Wiltschko, 2002, Numerical analysis of the earliest stages of ramp initiation in fold and thrust belts, *Fall Meet. Suppl., EOS Trans. AGU*, 83(47).
- Panian, J., and D.V. Wiltschko, 2001, Mechanics of Ramp Initiation and Ramp Spacing in fold and thrust belts, *Fall Meet. Suppl., EOS Trans. AGU*, 82(47).

- Panian, J., and D.V. Wiltschko, 1998, Effects of normal faulted basement on the mechanics of fold and thrust belts, A finite element analysis, Fall Meet. Suppl., EOS Trans. AGU, 79(45), p. 843.
- Panian, J., and D.V. Wiltschko, 1998, Ramp localization in a mechanically layered wedge: Results from finite element modeling, Spring Meet. Suppl., EOS Trans. AGU, 79(17), p. 347.
- Panian, J., and W.L. Pilant, 1987, A possible explanation for foreland fold and thrust propagation, Geological Society of America Abstracts with Programs, v. 19, p. 799.

Specialized skills:

- Numerical/computer modeling of geologic processes with emphasis on finite element and finite difference analyses.
- Geomechanical analysis of rock deformation.
- Theoretical analysis of mechanical deformation of solids and fluid flow through porous media.

Computer skills:

- Programming: ABAQUS, Fortran, Matlab, Excel VBA, GMT Mapping Tools
- Spreadsheets: Excel
- Databases: Access, dBase
- Graphics: PowerPoint, Adobe Illustrator, CorelDRAW
- Word Processing: MS Word, WordPerfect