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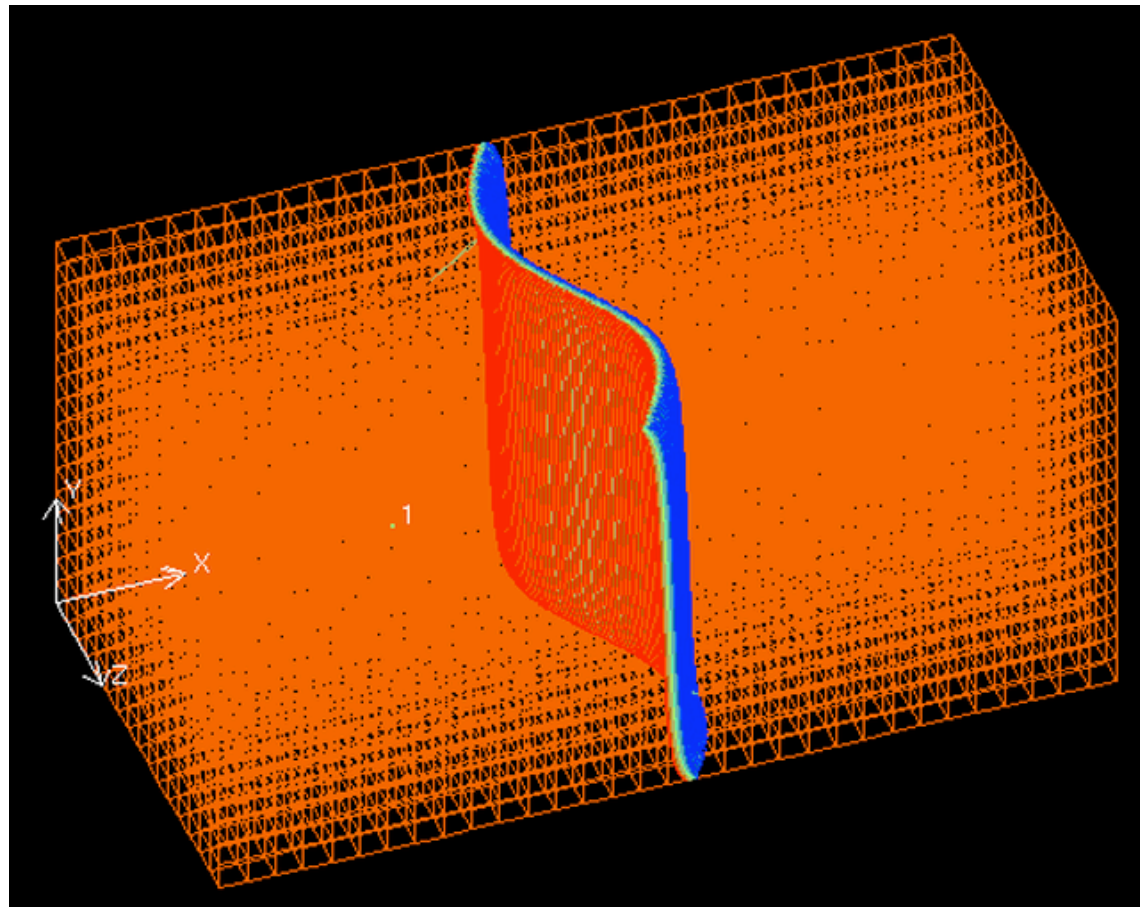
Interests: Modeling of Oceanic Flows

Tools: Ocean Models and Data
 in particular, Nek5000, Spectral Element Model
 developed by Paul Fischer (ANL)

CScADS Scientific Data and Analytics for Petascale Computing Workshop
Utah, July 2010

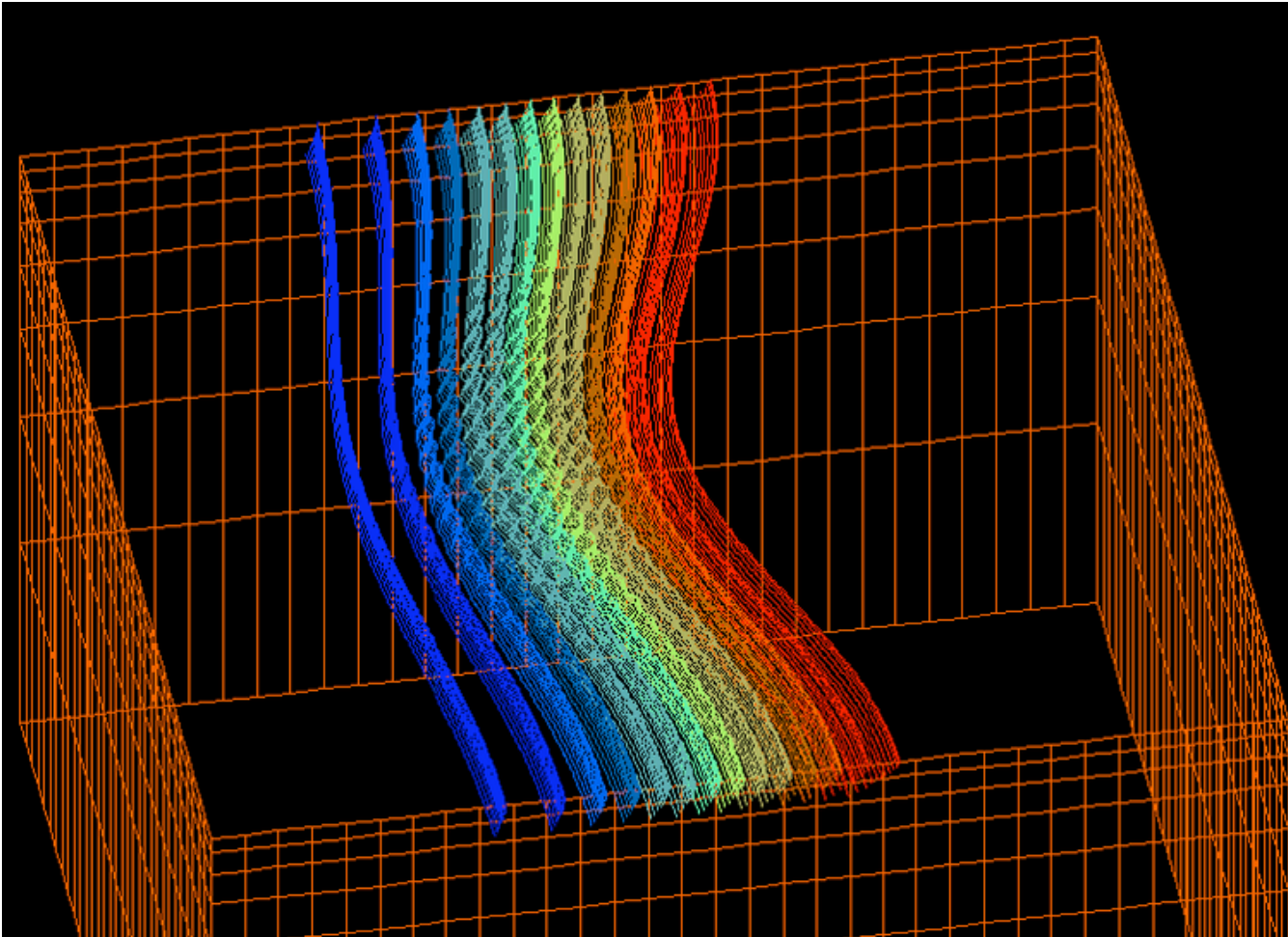
Mixing in Stratified Flows:

Applications: development of SGS models for LES



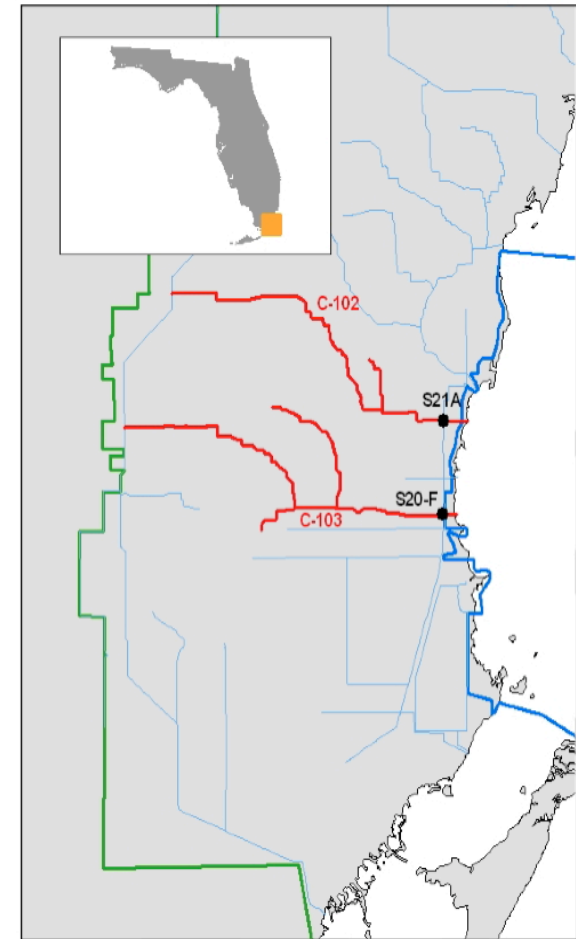
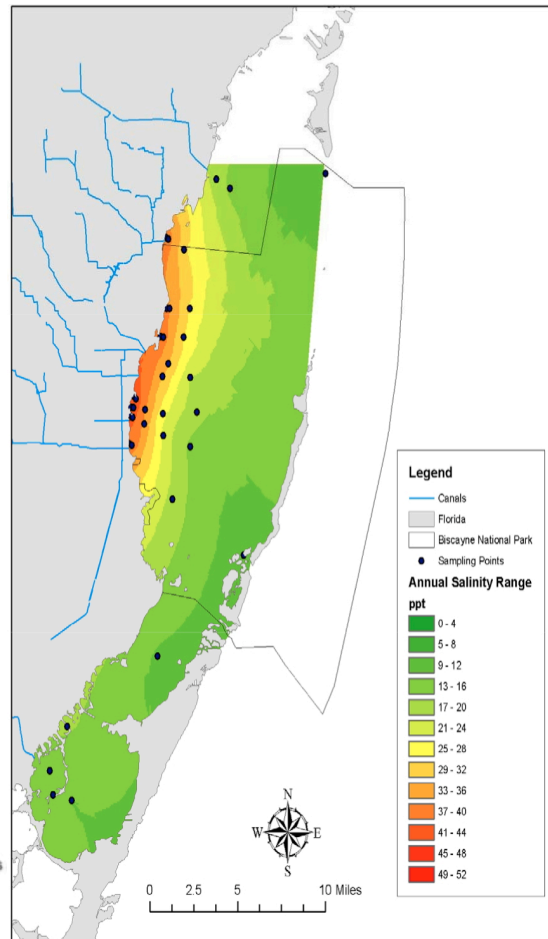
Ocean Surface Flows (Earth's Rotation & High-Aspect Geometry)

Applications: Navy's submarines and sensors for submarine detection



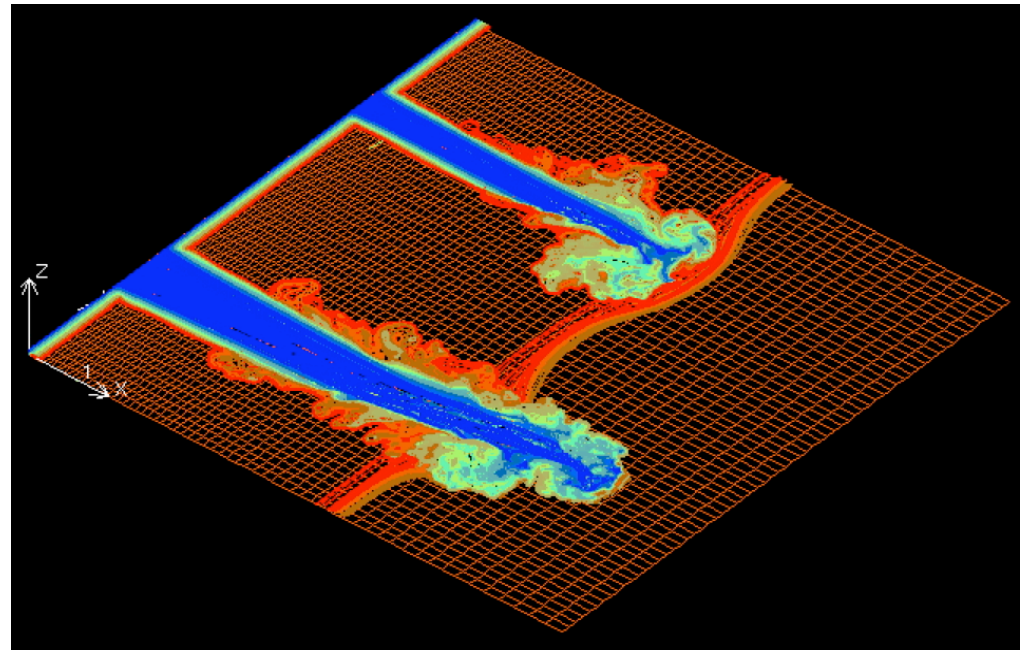
CFD-Based Control of Coastal Discharges

Application: Removal of Harmful High Salinity Zone in a Coastal Park

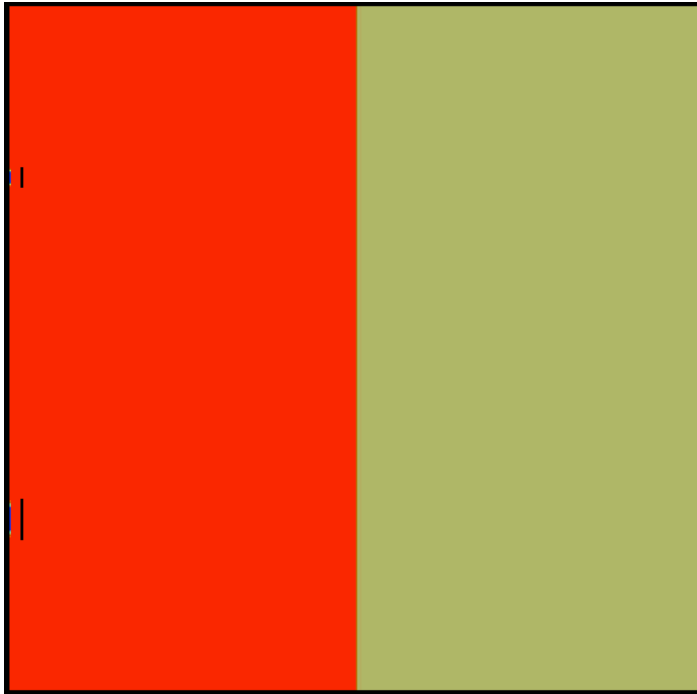


Basic State:

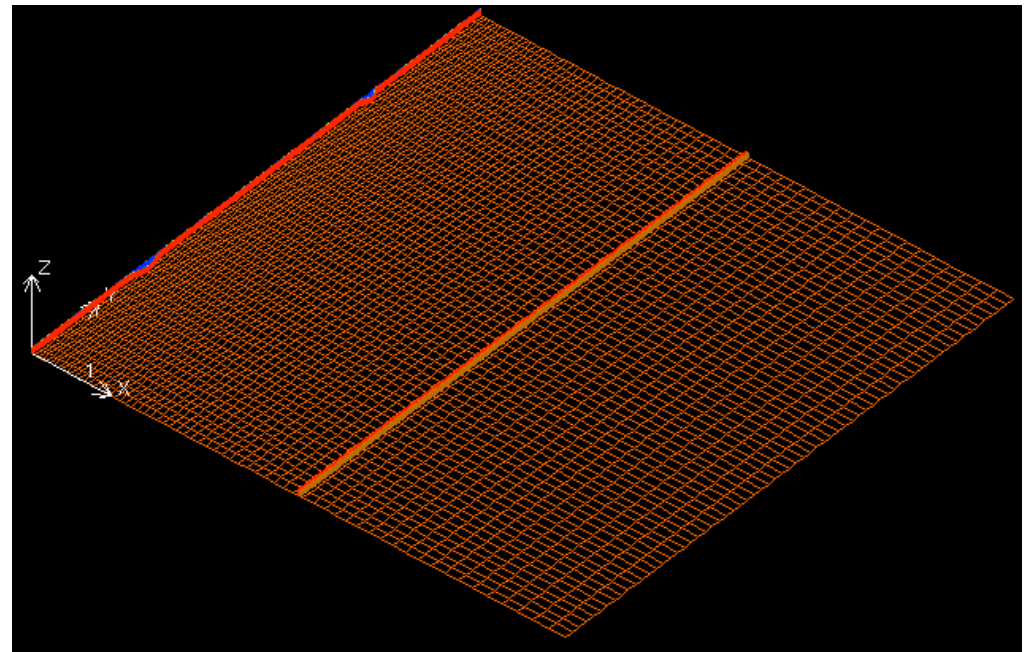
Fresh water from canals
does much mix with the
ambient efficiently...

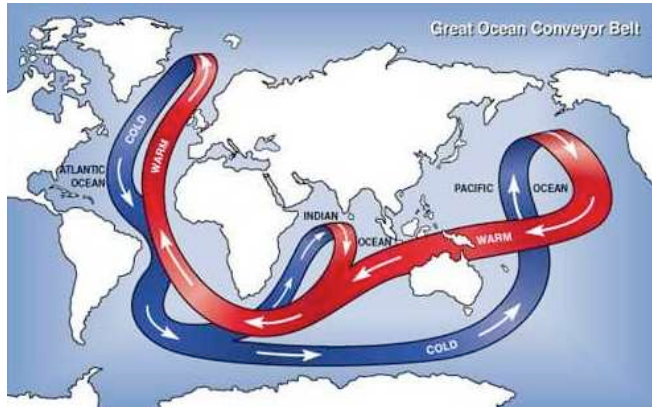


Proposed Solution 1:



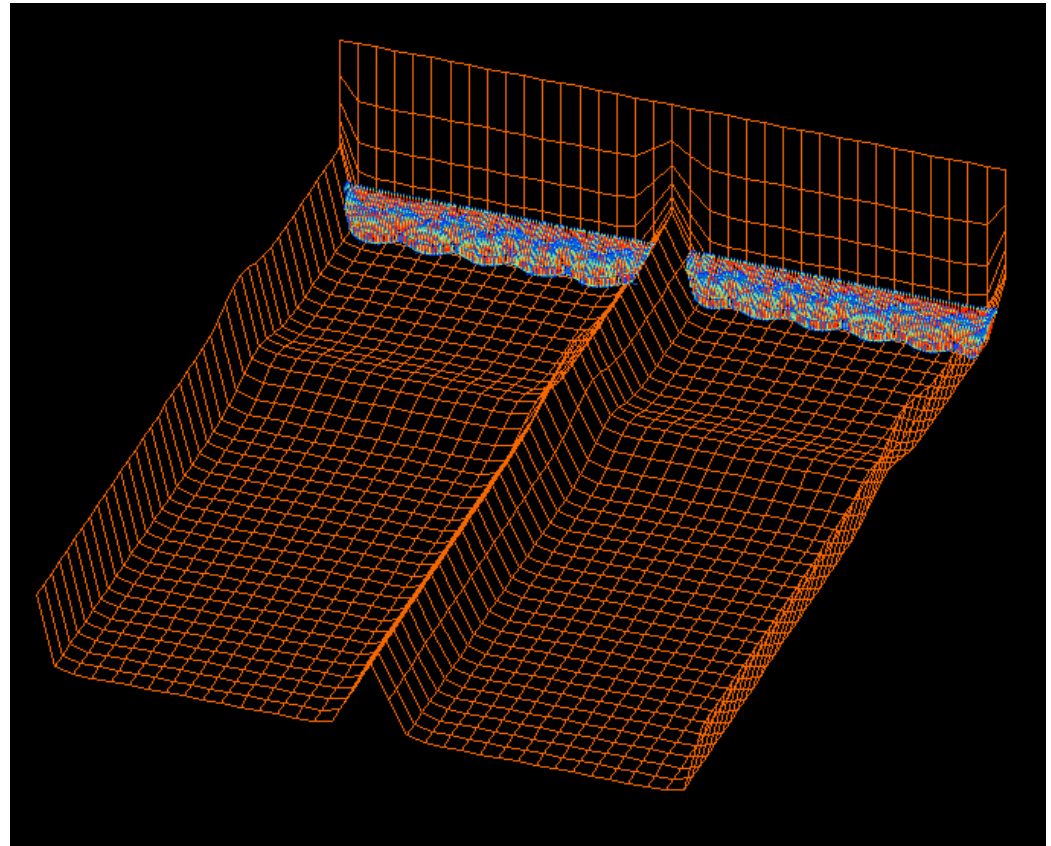
Proposed Solution 2:





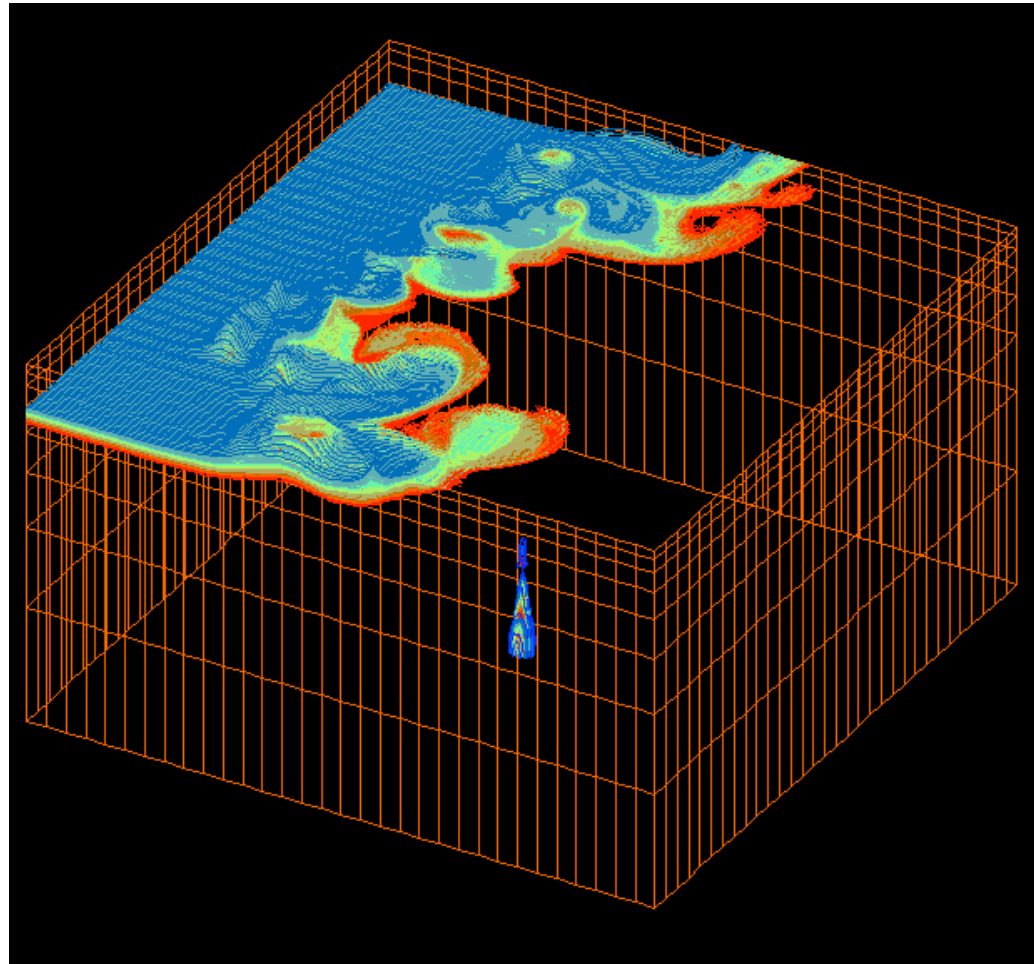
Abyssal Flows in the Ocean

Application: Ocean's Role in Climate Studies



Sub-mesoscale Dynamics of Buoyant Plumes

Applications: Understanding of the Oil Spill in the Gulf of Mexico



Featured on NBC & ABC nightly news on May 17 & 18, 2010

Computations in progress on *8k to 33k* CPUs on Intrepid with ANL and NSF-RAPID support...

Visualization With VisIt by Paul Fischer and Aleks Obabko (ANL)

Objectives in this workshop:

** To start the transition of visualization to VisIt (beginner, at most...).*

** To expand my horizons....*

Thanks very much to

Tom Paterka, Rob Ross, Pete Beckman, and Rusty Lusk

for the invitation!!