Recent Progress:

- 1. Generator un-tripping work:
 - Tripping method examined
 - Un-Tripping experimental method created
 - Re-initialize functions created for smpexc, tg, mac_sub
 - Test case and result document created
- 2. Zeroing out of derivatives for tripped machines added to fixed time-step routine. (Huen's Method)
- GitHub updated: https://github.com/thadhaines/MT-Tech-SETO

Current Tasks:

- 1. Work on un-trip functionality:
 - Further study re-initialization actions / requirements
 - More generic/functionalized programming
 - Compatibility with VTS
- 2. Create extended term event:
 - Use miniWECC and pwrmod
 - Issue: rolling blackouts in CA
 - High PV penetration
 - Drought has led to lower hydro output
 - Initial low $N \longrightarrow S$ flows
 - Solar generation declines as load increases
 - Inadequate CA dispatchable generation
 - Leads to large $N \longrightarrow S$ flows
 - EIA data from 8/14/20 18:00?
- 3. Work towards PST 4.0.0:
 - Optimize Y-matrix reduction when tripping generators
 - Verify and Validate operation of AGC, PWRMOD, IVMMOD, and VTS.
 - Refine documentation
 - Clean up examples
 - Clean up code/comments
 - Clean up readme files
- 4. Rework AGC doc to better explain model/example?
- 5. Work on understanding PST operation
- 6. Document findings of PST functionality
- 7. Investigate Octave compatibility

Current Questions:

- 1. Only 1 pwrmod **model** allowed per case?
- 2. Real data for case?

Loose ends:

- 1. As infinite buses don't seem to be used in dynamic simulation, they were not converted to use the golbal g.
- 2. tgh model not converted for use with global g. (no examples of tgh gov)
- 3. In original (and current) s_simu, the global tap value associated with HVDC is over-written with a value used to compute line current multiple times. It probably shouldn't be.
- 4. Constant Power or Current loads seem to require a portion of constant Impedance.
- 5. PSS design functionality not explored
- 6. No examples of of delta P omega filter or user defined damping controls for SVC and TCSC models
- 7. Differences in mac_ind between pst 2 and 3 seem backward compatible untested.
- 8. DC is not implemented in VTS Just combine into main routine? Seems counter intuitive to do multi-rate variable time step integration.
- 9. AGC capacity should consider defined machine limits instead of assuming 1 PU max.
- AGC should allow for a 'center of inertia' frequency option instead of the weighted average frequency.

Coding Thoughts:

- 1. Rework how switching & perturbance events are handled into a more flexible and general format. (flags? objects?)
- 2. Generate comparison scripts to verify simulated results match between code revisions and modifications.