

(A) NSF RISE-EWC Center (Extreme Weather Research Center)

PI/Co-PIs: Lin, Mekonnen, Zhang, Kaplan (ERAU)

Funding: NSF, ~ 1 M for 3 yrs starting 4/15/21; 4 PhD/MS & 4 BS supported

Focus on orographic and Climate impacts on extreme weather formation and enhancement, such as tropical cyclones, wildfires, storm surge, etc.

(B) Wildfire Modeling & Dynamics

PI/Co-PIs: Lin & L. Liu (NCAT), Kaplan & C. James (ERAU)

Funding: NSF, \$498,373 (6/1/19-5/31/23)

No. students: 2 graduate students

Focus: Mesoscale environment conducive to wildfire formation & severe downslope wind dynamics by conducting large-scale, mesoscale, small-scale, and large-eddy simulations.

(C) Tropical Cyclone Dynamics

PI/Co-PIs: Lin, SH Chen (UCD)

Collaborators: Bell (CSU), Kuo (NCAR)

Funding: NSF, a small seed travel fund was funded to support 1-2 students to participate in the 2022 PRECIP field campaign in Taiwan.

Future direction: Plan to submit a proposal to NSF to support the orographic-TC rain dynamic if the PRECIP exp is successful.

(D) GeoPath: PI/Co-PIs: Zhang, Bililign Lin, Mekonnen

(E) Other Research

- Orographic effects on MJOs: Ongoing, 1 PhD student (Riley) supported by a Title III Fellowship.

- Pending NSF/NASA projects: On supporting hurricane PBL & eyewall drone obs. by numerical modeling [Park (CSE)/Lin]

- Planning TOPO-CREST obs & modeling project: Investigating the convection initiation over Arizona mountains [Lin/Kaplan (ERAU)].