**Climate-Health Modeling Algorithms**

**Wildfire**

*Initiate the individual who will be modeled next*

For i=1 to ni, do

Mi0 is assigned the initial health state for individual i

Ci0 = Costs(Mi0­ , Charsi0) {Cost value for individual i during cycle 0 (initiation) as a function of the initial health state and individual’s characteristics}

Ei0 = Effs(Mi0­ , Charsi0 , cl) {Health outcomes for individual i during cycle 0 (initiation) as a function of the initial health state and individual’s characteristics, and cycle length}

*Then, take that person through each cycle until the end of the time horizon*

For t=1 to nt, do

fire=p.fire {Determine whether a fire happens in cycle t from a fire probability distribution}

p=Probs(Mi[0:t] , Charsi[0:t] , fire) {State-transition probabilities for individual i at cycle t as a function of the complete history of states and individual characteristics up to the current cycle t, and whether a fire happened}

Mit ~ Cat(n,p) {Determine the state individual i will transition to during cycle t from a categorical distribution of ns states with probabilities p.

*Assign new cost and health outcomes for current cycle t*

Cit = Costs(Mi[0:t] , Charsi[0:t])

Ei0 = Effs(Mi0­ , Charsi0 , cl)

end

end