Noninvasive electromagnetic brain stimulation techniques are applied routinely to study brain function, as well to treat a growing number of neurological and psychiatric disorders. Biophysical models have made substantial contributions to understanding the spatial and temporal dosing of neuromodulation interventions. These computational models can also guide the development of novel neurostimulation devices. In this presentation, we will discuss advances in computational modeling in brain stimulation, with applications spanning low field magnetic stimulation to next generation seizure therapy.