Dr. Mignot is director of the Craig Reynolds Professor of Sleep Medicine and director of the Center for Narcolepsy at Stanford University. He discovered that the pathophysiological basis of human narcolepsy is the loss of ~70,000 hypothalamic hypocretin/orexin neurons, leading to deficient neurotransmission. He identified HLA-DQB1*06:02 and T-Cell receptor genes as major susceptibility genes across ethnic groups, which act together to promote a highly selective autoimmune process. He previously characterized pharmacologic mechanisms of major narcolepsy medications, and established measurement of cerebrospinal fluid hypocretin-1 as a new diagnostic tool for narcolepsy. His current research focuses on new diagnostic tests for narcolepsy, functional analysis of additional narcolepsy genes, potential infectious triggers (Streptococcus pyogenes, influenza), identifying autoantibodies present near disease onset, dissecting the mechanism underlying protective HLA effects, and deep sequencing of T cell receptor genes in CD4+ cells present near disease onset. He is performing clinical and genetic studies of Kleine-Levin syndrome, a rare periodic hypersomnia, and is performing a genome wide association to identify genetic underpinnings of human sleep traits, also developing machine learning analytics for high-throughput recognition of these traits. He was the first to clone a disease gene in the dog (HCRTR2 mutations causing canine narcolepsy). Dr. Mignot has received numerous awards including election to National Academy of Medicine, National Academy of Sciences and the Howard Hughes Institute, and the McKnight Foundation Award.