Overview
The goal of this lecture is to illustrate commonly used approaches for performing brain MRI scans in infants and children. Two main obstacles must be overcome for acquiring these scans in pediatric populations: 1) physical and psychological comfort in the scanner: children’s anxiety in new environments must be met with desensitization protocols and other methods to calm them, creating a comfortable environment in which children will be compliant with the protocol, and 2) motion: several approaches are used to improve children’s compliance with instructions to remain motionless during the scan. These approaches reduce motion artifact in resulting images, and differ in strategy based on the child’s developmental level. The lecture will begin with approaches used for infants and then progress to those used with older children.

Outline
I. Scanning infants
   A. Hearing protection
   B. Vacuum-fix papoose
II. Scanning children: awake
   A. Pre-scan training
      i. Desensitization
         a) At home
         b) In the lab and/or mock scanner
      ii. Behavioral training to reduce motion
   B. During the scan
      i. Thermoplastic masks
      ii. Favorite cartoons
      iii. Video monitoring of head coil
      iv. Weighted blankets
III. Scanning children: asleep
   A. Pre-scan training
      i. Sleeping with scanner noises playing at home
      ii. Following a bedtime routine that can be translated to the scanner
   B. During the scan
      i. Scanning environment as similar to home bedroom as possible
      ii. Co-sleeping with parents

Suggested reading
• Kotsoni et al., 2006. Special considerations for functional magnetic resonance imaging of pediatric populations. J Magnetic Resonance Imaging 23: 877-886