

## W0654

**Assembly of the Rotavirus Internal Core Particle.** Ethan Settembre\*, Brian McClain, A.R. Bellamy, Stephen Harrison\*, \*Molecular Medicine, Children's Hospital/HHMI, Boston, MA 02115.

Rotavirus is a non-enveloped, dsRNA, icosahedral virus that is the major cause of gastroenteritis in children. These viruses must traverse the cell membrane to deliver a 700 Å diameter transcriptionally active internal core particle (ICP) into the cytosol. The ICP never uncoats and acts as an mRNA factory. The ICP is composed of two main structural proteins, VP6 and VP2. The structure of the ICP yields insights into key interactions at the VP6/VP2 interface, as well as interactions within the VP6 and VP2 layers. Taken together, these interactions suggest possible key steps in rotavirus encapsidation. An unusual feature involves a structural domain of VP2 that dangles into the capsid interior perhaps tethering the viral polymerase near icosahedral 5-fold channels to allow extrusion of the newly formed mRNA. These channels are gated by VP2 and appear to require additional movement to accommodate an exiting transcript.