

Problem Statements for REBOOT2.0

S.No.	Problem Statements	Suggested Solution	Mentor
1	VR simulation for patient education about glaucoma and ARMD	We need to design a VR based simulation for explaining the patients (by letting them experience) about how their eye sight is affected in glaucoma and ARMD and how it gets deteriorated with the progression of the disease along with an AI based network which also shows them about the disease process when they select the option to know about the disease and the treatment	Dr. Venkatesh Dr. Rajesh
2	Eye surgery practice module. All eye surgeons should practice surgery before the start surgery. The commercially available practice models are very costly 200 dollars for each.	We want you to design an eye ball model (whose dimensions will be given) using a rubber like material. The anterior surface should be transparent/ translucent to see the inside. This will help all surgeons in practicing surgery.	Dr. Rajesh
3	During retina surgery while operating in the periphery the surgeon needs to dip the periphery to visualize the peripheral retina and do laser, as the surgeon's hands are occupied with doing laser we depend on the sister, who indent not where or how we want them to indent.	We would like you to design an instrument which can be fixed to biome or the microscope that helps us in indenting the retina during surgery which can be controlled by the surgeon.	Dr. Prabu Dr. Nikita
4	Rhexis instrument for complicated cases of cataract.	A handle with a button on pressing opens as a loop with a blade underside to make CCC in one go.	Dr. Jayashree

5	Difficulty in measuring IOL decentration post operatively - degree and direction	Have an objective way of measuring decentration using slit lamp image which can be analyzed by a software	Dr. Haripriya Dr. Prabu
6	Device for cortex aspiration of small pupil. In a small pupil it is very difficult to visualize the cortex present behind the pupil for aspiration and all present method depends on blind aspiration or using pupil expansion devices	Can we have a devise which can aspirate the cortex depending on the bag structure instead of expanding the pupil.	Dr. Eliza Dr. Rajesh
7	Light pipe optical fiber plays a key role in retina surgery as an endo illuminator, also used extensively as an accessory tool in cornea surgery, light source is xenon / led from the machine. external light source is available however still expensive	Looking at smart phone led light based optical fiber light source that will be extremely low cost and portable.	Dr. Prabu
8	For intra ocular foreign body removal, we have endo magnets separately and forceps separately	It will be good if we have magnet that can also function as forceps using a switch	Dr. Prabhu