Securing competitive extramural grant funding as Principal Investigator is a requirement or desire of selected faculty at West Virginia University. The purpose of this brief talk is to provide general information aimed at increasing one’s chances for obtaining extramural grant funding as Principal Investigator from competitive sources, with a focus on the National Institutes of Health (NIH). At the end of this talk, the attendee should be able to (1) list and describe three factors to consider when developing one’s idea for a grant proposal, (2) list and describe five factors that could make one’s grant application more attractive to grant reviewers, and (3) list and describe three characteristics of a successful grant proposal writer. It is hoped that the knowledge gained from this talk will be helpful to those interested in pursuing and obtaining extramural funding as Principal Investigator from competitive sources.