

Good Research Practice (GRP)

How To Do Innovative Research

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Flow	W Factor	Key Effort	Key Task	How to Achieve	Spirit
Background & Introduction	Why	<ul style="list-style-type: none"> Describe what is “known” and what is “not known”. 	Identify the “missing link” or “data gap”	<ul style="list-style-type: none"> Critical analysis of existing data including “preliminary observation” 	<i>Being Curious, Humble but Courageous</i>
Hypothesis	What (to prove)	<ul style="list-style-type: none"> What is the missing link 	Has to be specific and testable	<ul style="list-style-type: none"> Imagination Willing to go “out of box” 	<i>Dream the “impossible”</i>
Aims		<ul style="list-style-type: none"> Minimal & sufficient steps to prove “Hypothesis” 	Dissect hypothesis into logical and chronological steps	<ul style="list-style-type: none"> Specify a key variable in each Aim 	<i>Focus, Focus, & Focus</i>
Experimental Design	When & How	<ul style="list-style-type: none"> A detailed plan consisting of means to prove each “Aim” 	Dissect each Aim into an executable plan	<ul style="list-style-type: none"> Control experimental variables Careful planning and execution 	<i>Perseverance</i>
Results	What (to find)	<ul style="list-style-type: none"> Describe all new findings 	Compare the experimental to the control	<ul style="list-style-type: none"> Thorough and prompt data analysis 	<i>Pay attention to details</i>
Conclusion		<ul style="list-style-type: none"> Summarize all findings into a brief statement List those unexpected findings 	Reduce explainable findings, but keep unexplainable findings	<ul style="list-style-type: none"> Precise and succinct by reduction 	<i>Failure is the success in disguise</i>
Discussion	So What?	<ul style="list-style-type: none"> Speculate by raising forward-looking questions 	Interact the new findings with the known finding by reasoning	<ul style="list-style-type: none"> Bold but non-emotional by induction 	<i>Keep those unknown in the brain</i>