

Parts of a graduate school application:

I. Personal Statement

II. CV/Resume

III. Transcripts

IV. Letters

V. GRE Scores

Part I.

General personality traits worth emphasizing:

An ability to communicate and work well with others.

Work ethic

Emotional stability/balance

Intellectual curiosity

Scientific ambition

Ability for independent thought

Analytical reasoning skills

Leadership

Integrity

Flexibility

Introductory Paragraph:

-Who you are, where you have come from, and how you became interested in physics.

Socio-economic and/or racial diversity (or any other potentially beneficial distinguishing features of your personal background) are worth pointing out in this paragraph.

Academic Background Paragraph:

-What classes have you taken (past work experiences can also be leveraged here), what have you done well with, what have you not done as well with, and what lessons do you carry forward from those experiences to help shape your future as a researcher (both in terms of intellectual curiosity and work-ethic).

Be sure to highlight BOTH successes AND failures. The committees will SEE your transcripts and recommendation letters. If they SEE failures, they will be expecting (i) some form of explanation, (ii) some indication of growth resulting from the experience, and (iii) tangible evidence (i.e. in the form of subsequent success/upward trending grades) to support the claims of growth. Overcoming adversity (or resilience) is often seen as a beneficial trait.

Research Background Paragraph:

-What types of research projects have you sought out and undertaken; why, and what do you take away from those experiences to shape your research outlook.

Any publications, conference/workshop presentations, posters, and/or participation in programs (i.e. REU) should be highlighted in this section. Some context should be devoted to each project, the person that you were working with, the goals, what was accomplished,

and what was learned. (Your letter writers should be in a position to corroborate anything stated in this section.)

Future Research Interests and Program Fit Paragraph:

-Ideally, tie into past research experience and academic background to describe how and why you plan to pursue a PhD (DO NOT APPLY FOR MASTERS PROGRAMS IN PHYSICS – you can always get this degree from a PhD program after admission) in a certain area or areas of physics.

Be sure to highlight specific unique strengths of each program that you apply to that overlap well with your future research ambitions. If suitable, not 1 or 2 faculty with specific projects/areas of emphasis that you find particularly appealing and why you feel you are well suited to work in those groups/projects. (In doing this legwork, consider actually contacting these people to talk about research BEFORE applying – it will either (A) save everyone time, or (B) give you your strongest possible internal ally during the application review stage.

Part II.

Use standard CV protocols

(i.e. <https://www.american.edu/careercenter/upload/Curriculum-Vitae-Samples.pdf>)

Be sure to include/highlight the following:

GPA

GPA in the major

GRE scores

Awards (i.e. SPS awards for example)

(RESEARCH) Participation in Research Programs/Projects (NAME THE PROGRAMS, PEOPLE, and DATES)

THESIS

External, Job-related research experience

(RESEARCH) Publications

(RESEARCH) Formal Presentations

Attendance at conference/workshops (i.e. National APS, or local stuff like FL-AVS, or FL-Nano)

Outreach activities (i.e. iSTEM day or Career day volunteer work)

Professional affiliations (i.e. SPS)

Teaching Experience (i.e. LA program participation for example)

Leadership roles (i.e. in SPS for example)

Part III.

Do everything that you can now to make these as good as you can.

Better is better, but less than ideal can be salvageable IF overall time-dependent trends are extremely positive, core physics GPA far exceeds non-major grades, and/or direct evidence of success in graduate program classes (in between UCF degree and future PhD program acceptance) can be shown. Everything here (good and bad) should be touched upon and explained/highlighted in the personal statement.

Part IV.

PhD programs are looking for primarily TWO things. (1) Evidence that a person can successfully matriculate through graduate-level core curriculum (or perhaps, stated more cynically, evidence to build a case to the contrary), and (2) Evidence that a person will have success as a researcher.

You want to pick letter writes capable of highlighting BOTH traits whenever possible. This means that right now, you should be working to show mentors and instructors several key traits, such as: (all of the things mentioned at the top of part I).

Part V.

Prepare for these tests. Better is Better, and many schools use GPA's and scores to make stacks smaller before even looking at the details.

Do what you can to control what you can, don't worry about what you can't, but make sure to SELL your results (relative to your unique story and ambitions) no matter what they might be in the end.