

## Appendix

### Frequency of All Themes Related to Career Success Reported by PhD Physicists, 2011

Career Success Theme	Category	Number of Times the Theme was Mentioned (%)
Hard work	Personal drive	219 (9%)
Problem-solving skills	Skills and abilities	198 (8%)
Interpersonal skills	Skills and abilities	164 (7%)
Persistence	Personal drive	163 (7%)
Education experience	Education and career background	162 (7%)
Supportive mentors	Social support	107 (4%)
Previous experience in certain fields	Education and career background	103 (4%)
Supportive colleagues and collaborations	Social support	97 (4%)
Flexibility in job field, research, or tasks	Career opportunities	87 (4%)
Passion for work	Personal drive	81 (3%)
Research and analysis skills	Skills and abilities	74 (3%)
Computing skills (e.g., programming, software, modeling)	Skills and abilities	72 (3%)
Luck	Career opportunities	61 (3%)
Ability to learn new things	Skills and abilities	55 (2%)
Oral and written communication skills	Skills and abilities	55 (2%)
Intellectual curiosity	Personal drive	41 (2%)
Supportive family and friends	Social support	39 (2%)
Creativity	Skills and abilities	38 (2%)
Motivation to succeed	Personal drive	38 (2%)
Professional networks and contacts	Social support	38 (2%)

Career Success Theme	Category	Number of Times the Theme was Mentioned (%)
Planning and organization skills	Skills and abilities	38 (2%)
Previous job experience	Education and career background	36 (1%)
Good opportunities	Career opportunities	34 (1%)
Supportive employer culture and administration	Organizational support	34 (1%)
Critical-thinking skills	Skills and abilities	33 (1%)
Natural talent and intelligence	Skills and abilities	33 (1%)
Teaching skills	Skills and abilities	27 (1%)
Funding and resources	Organizational support	26 (1%)
Ability to work independently	Skills and abilities	24 (1%)
Previous postdoc experience	Education and career background	24 (1%)
Ability to focus on goals	Skills and abilities	23 (1%)
Agreeableness with others	Skills and abilities	18 (1%)
Willingness to take risks	Skills and abilities	16 (1%)
Management and leadership skills	Skills and abilities	16 (1%)
Changing employers	Career opportunities	15 (1%)
Self-confidence	Skills and abilities	15 (1%)
Patience	Skills and abilities	13 (1%)
Supportive students	Social support	10 (< 1%)
Religion and faith	Social support	9 (< 1%)
Integrity	Skills and abilities	8 (< 1%)
Positive attitude	Skills and abilities	8 (< 1%)
Supportive managers	Social support	7 (< 1%)
Business skills	Skills and abilities	6 (< 1%)
Resourcefulness	Skills and abilities	4 (< 1%)
Ability to act responsibly	Skills and abilities	4 (< 1%)
Common sense	Skills and abilities	3 (< 1%)

Career Success Theme	Category	Number of Times the Theme was Mentioned (%)
Sense of humor	Skills and abilities	3 (< 1%)

This list only includes themes that were reported by at least three respondents. We asked respondents, “What has helped you succeed in your career up to this point?”

#### Frequency of All Themes Related to Career Barriers Reported by PhD Physicists, 2011

Career Barrier Theme	Category	Number of Times the Theme was Mentioned (%)
Funding	Organization barriers	123 (10%)
Overworked	Organization barriers	82 (7%)
Family obligations	Social barriers	66 (5%)
Lack of interpersonal skills	Skill and ability barriers	59 (5%)
Not valued by employer	Organization barriers	55 (4%)
Difficulty obtaining employment	Career opportunity barriers	54 (4%)
Unsupportive administration and infrastructure	Organization barriers	48 (4%)
Difficulty advancing at employer	Organization barriers	47 (4%)
Lack of interest in work	Personal drive barriers	42 (3%)
Negative interactions with management	Social barriers	41 (3%)
Negative interactions with mentors	Social barriers	38 (3%)
Lack of staff and equipment	Organization barriers	38 (3%)
Lack of professional networks and contacts	Social barriers	31 (3%)
Gender bias	Gender, race, or ethnicity barriers	30 (2%)
Lack of business skills	Skill and ability barriers	29 (2%)
Negative interactions with colleagues	Social barriers	29 (2%)

Career Barrier Theme	Category	Number of Times the Theme was Mentioned (%)
Lack of previous experience in certain fields	Education and career background barriers	28 (2%)
Lack of focus in career	Personal drive barriers	23 (2%)
Difficulty relocating	Career opportunity barriers	22 (2%)
Economic issues in the US	Career opportunity barriers	21 (2%)
Difficulty getting published	Career opportunity barriers	21 (2%)
Lack of self-confidence	Skill and ability barriers	21 (2%)
Previous choices that limited career	Career opportunity barriers	20 (2%)
Difficulty switching fields or sectors	Career opportunity barriers	20 (2%)
Difficulty working as a non-US citizen	Career opportunity barriers	20 (2%)
Corporate instability (e.g., mergers, changing goals, bankruptcy)	Organization barriers	18 (1%)
Bias against hiring PhDs	Career opportunity barriers	16 (1%)
Lack of computing skills (e.g., programming)	Skill and ability barriers	16 (1%)
Issues with education experience	Education and career background barriers	15 (1%)
Personal health issues	Personal drive barriers	12 (1%)
Race/ethnicity bias	Gender, race, or ethnicity barriers	12 (1%)
Lack of oral and written communication skills	Skill and ability barriers	12 (1%)
Issues with postdoc experience	Education and career background barriers	11 (1%)
Lack of autonomy at employer	Organization barriers	10 (1%)
Degree earned from a less prestigious institution	Education and career background barriers	9 (1%)

Career Barrier Theme	Category	Number of Times the Theme was Mentioned (%)
Lack of teaching skills	Skill and ability barriers	9 (1%)
Lack of work ethic	Personal drive barriers	7 (1%)
Difficulty with project schedules	Organization barriers	6 (< 1%)
Bad luck	Career opportunity barriers	4 (< 1%)
Lack of research skills	Skill and ability barriers	4 (< 1%)

This list only includes themes that were reported by at least three respondents. We asked respondents, “What have been the barriers to your career up to this point?”