

**1. Name (first and last)**

Text Response

Subhan Khalid

Statistic

Value

Total Responses

1

**2. Email**

Text Response

sk9793@hotmail.com

Statistic

Value

Total Responses

1

**3. Contact Phone**

Text Response

6102033127

Statistic

Value

Total Responses

1

#### 4. In Fall 2018 you will consider yourself to be a:

#	Answer	Bar	Response	%
1	VT Freshmen Undergraduate Student		0	0%
2	VT Sophomore Undergraduate Student		0	0%
3	VT Junior Undergraduate Student		0	0%
4	VT Senior Undergraduate Student		0	0%
5	Between Undergrad and Graduate school		0	0%
6	Graduate school		1	100%
	Total		1	

Statistic	Value
Min Value	6
Max Value	6
Mean	6.00
Variance	0.00
Standard Deviation	0.00
Total Responses	1

#### 5. What degree(s) and major(s) are you pursuing along with institution?

Text Response	
MS Applied Statistics, Villanova University	
Statistic	Value
Total Responses	1

6. List any Minors you are pursuing.

Text Response

Statistic	Value
Total Responses	0

7. List any honors and/or awards received:

Text Response

Statistic	Value
Total Responses	0

8. Currently we have 1 program accepting applications which includes:

#	Answer		Total Responses
15	Data Science for the Public Good	0	0
	Total	0	-

Statistic	Data Science for the Public Good
Min Value	-
Max Value	-
Mean	0.00
Variance	0.00
Standard Deviation	0.00
Total Responses	-

9. Essay (up to 500 words): “What do you want to get out of this experience?”

Text Response

DSPG for me seems like an ideal internship. I want to pursue this in for search for diversity, a chance to create a professional network of researchers, the chance to work with research mentors and the chance to drive social change. I started studying for my masters in applied statistics at University of Villanova in fall 2017. I have lived my whole life in Pakistan before that, so a chance to come and study in the US is a dream because of the exposure to a much diverse world. In return I bring in my own culture and values with a chance to spread them here. So I am always open to new experiences and a chance to meet new people. An internship in Virginia seems ideal because not only will I get to travel, but I will also meet new people and a chance to learn from them and a chance to show them my values and culture. Having worked for two years in Center for Economic Research in Pakistan gave me a chance to work with international researchers such as Dr. Michael Best at Stanford University and Dr. Asim Khwaja who is a professor of public policy at the Kennedy school at Harvard. There I learned the value of creating a professional network and meeting new people. I hope to do the same at DSPG by meeting like-minded people and creating a network of researchers to help me in my professional life and to also with engage socially. What excites me about DSPG is that it is impact driven. What excites me is the idea of finding solutions to social issues. With two years' experience working in the research and development sector, I have had the chance to work on issues such as poverty, health, Government accountability and female empowerment. The research I have done with Center for Economic Research in Pakistan centered on using cutting edge research techniques such as randomized control trials to create robust evidence in the development world. That increasingly demanded using technology to come up with solutions for pressing concerns, examples of which I will highlight in my essay below. DSPG's work on bringing about change in health, safety and employment is what really excites me and I am eager to be a part of such research. Eventually I want to pursue a PhD in Bio-statistics, hence an internship at DSPG would add to my application by giving me some insight into the bio statistical research and also a chance to work on public health here in the US.

Statistic	Value
Total Responses	1

10. Essay (up to 500 words): "Please describe any previous research experience and/or work experience you may have."

Text Response

I joined 'Center for Economic Research in Pakistan (CERP)' as a Research Assistant to put my data skills to practical use. I worked on the 'Evidence Based Procurement Reforms Project (EBPR)' for Dr. Michael Best at Stanford University and Dr. Adnan Khan at London School of Economics. My work experience has provided me with the aptitude to work as an economist in the industry, part of which entails, providing technological solutions grounded on statistical analysis. In order to collect data for the project, the Punjab Online Procurement System (POPS) ([www.pops.punjab.gov.pk](http://www.pops.punjab.gov.pk)) was developed in conjunction with the Punjab Information Technology Board (PITB) on the SQL database. Closely working with the programmers was important as it allowed me to think like a problem solver and create the interface keeping in mind the need for user friendly experience and quality data collection. The project was set up as a Randomized Control Trial (RCT). My coding skills improved on Stata as I was required to write regression do-files for impact evaluation of the study and gave me a deeper understanding of how individuals within the sample responded to various treatments purveyed.

Statistic	Value
Total Responses	1

### 11. Essay (up to 500 words): "Please describe your background (courses taken, research projects, etc.) in statistics and mathematics."

Text Response	
I have received rigorous training in courses such as calculus, linear algebra and real analysis providing me with an intuitive understanding of mathematics and the utility of abstract concepts and construction of proofs. My grades, specifically in calculus, suffered during my first semester, after an epidemic in Pakistan leaving me out for a couple of weeks. However, my facility with Mathematics has improved after studying probability theory in graduate school and applying multivariate calculus to probabilistic models. An example would be the application of double integrals to multiple continuous random variables. My calculus would further improve as I take the next sequence of the probability theory course during the spring semester, 2018. On the applied side, I have taken courses on applied stochastic processes, applied microeconomics and statistical methods in grad school. On MATLAB I designed deterministic logistic models, simulated paths for discrete and continuous time markovian chains for birth and death models using Gillespie's algorithm, studied the Kolmogorov equation, Fourier series and computed maximum likelihood estimators. While applied microeconomics gave me a chance to replicate existing economic models on Stata, such as applications of multiple regressions to costs and learning curves, using Oaxaca decomposition to measure wage discrimination, use Zellner's seemingly unrelated regression, compute Hicks-Allen elasticity's and applying panel data methods to labor supply. I will be taking a course on regression during spring semester 2018 building on statistical methods course which would enhance my facility with multiple regressions, weighted least squares regression and model building.	
Statistic	Value
Total Responses	1

### 12. Essay (up to 500 words): "Please describe your background (courses taken, research projects, etc.) in social and behavioral sciences."

Text Response	
One of the projects I worked on during my time at CERP was on malnutrition, early child development and delivery of prenatal and postnatal health services in rural parts of Punjab (Province of Pakistan). The project idea was to implement a randomized control trial with a treatment involving conditional cash transfer for pregnant mothers to incentivize them to come for check-ups once every trimester to Basic Health Units (BHU's) in rural Punjab) rather than discontinuing checkups or going to community midwives. This is involved getting the social protection authority on board, providing transport for mothers to the BHU's and also improving the quality of treatment available at the BHU's. The other treatment arm involved incentivizing and motivating Lady Health Workers to persuade mothers to come to BHU's for treatment. These treatment arms were setup after focus groups were conducted with pregnant mothers and Lady Health Workers. This gave me real insight into reasons behind mother's behavior to not receive treatment at BHU's and their attitudes towards malnourishment of their child. I also recorded behavior on how mothers felt about introducing Lipid based supplements to stop child from stunting after birth and other supplements for cognitive development. Focus groups also gave insight into how Lady Health Workers felt towards their jobs and how they could be motivated to become more efficient and improve provision of health in rural Punjab.	
Statistic	Value
Total Responses	1

### 13. Essay (up to 500 words): "Please describe your background in programming."

Text Response	
With Dr. Imran Rasul at University College London I worked on the Asset Transfer project at CERP. This enabled me to work with longitudinal data and be a part of a thorough study on poverty in rural parts of Punjab. I was involved in data analysis of income, consumption and investment indicators for data being collected from baseline 2013 up to midline 2016. This gave me hands on experience on handling real world datasets and extracting useful insights from it. My statistical programming skills improved vastly as I was required to write STATA code for analysis. This involved intensive data cleaning and regression analysis. For example I used codes for macros, conditional Probit, Tobit and Logit models. The results were synthesized for Principal Investigators and the results were used report to the Government, Donor organizations and make decisions on the future of the project. My programming skills are also being put to the test as I work as a Graduate Assistant currently at the office of Campus Ministry at Villanova. This involves writing STATA code for analysis of student's responses to various Campus Ministry programs. During spring semester 2018 I am taking a course on Statistical Programming which would further improve my coding skills on SAS and R.	
Statistic	Value
Total Responses	1

### 14. Essay (up to 500 words): "Please provide information about other significant courses you have taken within your field of study."

Text Response	
Apart from having taken Economics and Math courses I have also taken courses in Political Science and Political Economy. This was because my aim was the analysis of the economy through construction and estimation of Macro-Econometric models in order to make policy simulations and predictions. My experience in research at the undergraduate level gave an inclination towards policy analysis and forecasting. Political Economy is one area where this research can be useful especially since I want to be able to contribute to my country and its development. This bodes well with my research plans as I plan to return to Pakistan and research into possible Political Economic changes that will improve the current Economic conditions. And also bridge the gap between academia and Federal policy making in order to ensure implementation of well researched, holistic and stable economic policies. I love knowledgeable pursuits. I fell in love with academics when I had a chance to study History. What we have accomplished is nowhere near significant to the intellectual breakthroughs made by individuals in History. To have a glimpse of works of Leibniz, Newton, Cauchy, Euler and so many in the field of mathematics or by Adam Smith, John Keynes, Okun, Philips in the field of Economics. It is mesmerizing what these brilliant minds accomplished and in some cases redefined conventions present from Socratic times. It gives us the motivation to do something important in life and leave our own imprint in History.	
Statistic	Value
Total Responses	1

### 15. Please list the name and contact information for 2 references (teachers, mentors, or employers) that we will contact for a letter of reference/brief survey. Please make sure you list the correct email and they know we will be contacting them soon (within the next week). Only 2 references will be contacted; do not list more than 2.

Text Response	
Dr. Jesse Frey (jesse.frey@villanova.edu) Dr. Michael Best (mbest@stanford.edu)	
Statistic	Value
Total Responses	1