General:

Dear <so and so> December 18, 2016

Paragraph 1:

I am interested in learning more about <SXXXXXXXXXX>. I have eight years’ experience as research staff at the Institute of Defense Analyses, where I have supported a broad variety data analyst functions—from operational test and evaluation to chemical hazard transport and dispersion. I began my career as a research staff member after completing my PhD at the Pennsylvania State University, where I focused on colloidal- and nano- functionalization to achieve the bottom-up assembly of asymmetric particle formations.

After reviewing <XXXXXXXXXXXX>, I am very interested in <Job>

My broad background—as both a data analyst and chemical engineer—equips me with a unique skill set that

Paragraph 2 Why I’m qualified

My career has demanded creative solutions to complex problems: from adapting theoretical experimental design strategies to the complexities of real-world evaluations to harnessing transport and dispersion tools to determine reasonable methods of protecting US forces from weapons of mass destruction.

How my e search the skills and capabilities the organization may favor in any candidate xperience meets the requirements of the job description

End Paragraph

I appreciate any opportunity to further discuss to learn more about the position. Attached is my CV. Thank you for your time and consideration.

Sincerely,

Charles Snyder

Teaching Cover letter

Stuff for teaching application:

After some introspection, I came to realize that one of my favorite parts of my current job is sharing information—to peers, to sponsors, or to students. As a flat organization with an academic work environment, I am often able to assist co-workers with projects, helping them hash through complex problems and sharing my expertise and experience. One of the challenges of my work is distilling complex analysis into high-level sponsor briefings; a highlight of any project is when I am able to convey information so that the sponsor “gets it.” And I am always most satisfied with my day on those days that I tutor nearby high-school students in math and sciences. Though I have broadened my experience over the last eight years as an analyst, I am never more motivated than when helping someone learn.

My recent experience in the workplace has shaped my approach to teaching in that I am now more cognizant of and adaptable to different learning styles. In my work, I have worked with many new undergraduate hires and summer interns. While I have a mentoring role, I have found it best to teach core techniques while leaving analysis approaches open for the individual to explore—recognizing that there are many acceptable approaches to solve a problem. This active learning approach can mean a little more work on my part, but often, these bright new hires come up with interesting approaches to problems solving. Whether it be as a workplace mentor or as a tutor, I recognize that students or new hires are individuals with different strengths, learning styles, and problem solving approaches. By valuing the student of co-worker as a collaborator opposed to viewing my relationship to them as dictatorial, we both grow.

General Stuff for cover letter

~~With analysis support from incredibly bright undergraduates, my teaching philosophy has evolved somewhat since I was last considering teaching straight out of graduate school: there are often many paths to approach a particular problem. While we must have a good grasp of fundamental academic knowledge, I have found success in treating any teaching opportunity as a collaboration with students. Students brings unique approaches that challenges my way of thinking. In a lecture setting, it can be difficult to engage in “collaboration,” but this mindset can help me to remember that there are a variety of ideas and learning styles that I must be attuned to.~~

An active learning setting seems ideal for this type of collaboration.

http://www.vpul.upenn.edu/careerservices/writtenmaterials/researchstatements.php

VT

Dear Prof. Mehdi Ahmadian and Destination Areas hiring committee:

With my background as a Chemical Engineer and experience as an analyst at the Institute of Defense Analyses, I can provide some diversity

My experience is broad, but I have demonstrated the ability to dive into new subject areas and collaboratively

Love of and need of learning. Want to immerse myself in the university setting,

Research

I contributed data analysis product to influence decisions and seen the results first hand; sometimes analysis informs decision makers while other times is obfuscates the obvious.

I have provided operational test analysis to provide quantitative assessments of system effectiveness and suitability. Without quantification, decision makers would have little leverage to demand system improvements from program managers.

I have provided chemical, biological, and nuclear warfare modeling results to help wargamers scope the effects of weapons of mass destruction. This information equips decision makers with information necessary to catalyze conversation—focusing on potential mitigation measures and other courses of action. I have seen that, without this information, teams of decision makers or working groups are paralyzed in the face of the unknown—often reduced to debating conjecture instead of moving onto solutions.

At the same time, I have seen how analysis can be misused: rather than supporting subject-matter-expertise, extensive analysis can sometimes obfuscate what once was a simple message—leaving a decision maker confused.

decision makers who no longer have the historical knowledge of weapons-of-mass-destruction can focus on potential solutions and effects mitigation, rather than argue over varying opinions on the degree of

ces destination area is to advance the transduction of data into decisions, while also appreciating the social and ethical contexts underlying data-driven reasoning.

In the face of the unknown and conjecture-based decision

computational solid mechanics, multi-scale modeling of materials, design methodology, design optimization, materials design, computer-aided design, and modeling and simulation of advanced manufacturing processes

 Destination Areas represent difficult problems of present and future national and global importance for which VT is investing resources to build and support world-class groups of faculty that transcend our disciplinary strengths

These positions will serve the Destination Area in “Data Analytics and Decision Sciences.”

 Infrastructure Analytics: Data as it relates to and revolutionizes the way we interact with the natural and the built environment.

Research statement:

What got you interested in this research

What was the burning question that you set out to answer

What challenges did you encounter along the way, and how did you overcome these challenges

How can your research be applied

Why is your research important within your field

What direction will your research take you in next and what new questions do you have—what are some of the possible destinations along the way. Show that research is moving forward.

Part 1 Focus on the past

While my first exposure to research was in a strictly experimental tissue engineering lab as an undergraduate. After graduating with a BS in Chemical Engineering, I had a lot of unanswered questions which drove me to pursue a graduate degree. It was in graduate school that I discovered the joy of research: those moments where I with my research group pushed the boundary of knowledge.

I would characterize my graduate school research as guided by analytic modeling and driven by experiment. Analytic modeling the interaction of colloidal particles provided a starting point for experiment. Essentially untethered by my research advisor, I took advantage of the many university resources made available to me: from the equipment in my advisor’s lab (e.g., optical microscopy, particle potential analyzer), to confocal microscopy made available by the Department of Chemistry, to the full suite of equipment made available by the Materials Research Institute’s nanofabrication laboratory and materials characterization lab. This period of research exploration culminated with my functionalization of colloidal particles to achieve asymmetric bottom-up assembly.

Out of graduate school, the Institute of Defense Analysis (IDA) hired me into its Operation Evaluation Division. Having demonstrated the ability to tackle complex problems in graduate school, IDA tasked me to provide independent evaluation of operational test of Unmanned Aerial Systems. During this period of my career, I focused on test design and assessment (e.g., design of experiments, reliability growth analysis). And analysis required me to develop as a programmer—first with Java.

I immediately took interest in any project that required some programming. In hindsight, this was to fill the void of creation that I lost when leaving the laboratory. At least when programming, I was creating tools that not only were useful to me, but might also be useful to other research staff. I crossed paths with the Strategy, Forces, and Resources division at IDA while reviewing an operational test report for a chemical agent detection system and eventually migrated to the Chemical, Biological, Radiological, and Nuclear (CBRN) Analysis group within IDA.

-Phd, OED, SFRD

Part 2, where I am today? The questions I’m trying to ask and some fo the findings—not abstract, but actual. And why they are significant

Part 3: build on the last two parts. Convincing future research statement is unique for each. Identify 4-5 specific aims with short and longterm goals.