Good Statement of Purpose in the Social Sciences:

I have completed the required two years of course work in Economics at University of Ex and have passed my field exams. My research interests are focused on the effect of NAFTA on Mexico specifically and Latin American financial markets in general. To date my research has produced 4 papers (these are preliminary and need to be developed), and it is my hope that these papers will relate to my final thesis. The preliminary titles of the papers are: "Stock Prices from a Microeconomic Perspective" (June 1999), "Long-Term Effects of Oil Costs on Stock Prices: A Comparative Analysis of Mexico, Argentina, and Brazil" (December 1999), "Declining Stock Market Integration in the Zedillo Era (February 2000), and "Disintegration of Stock Market and post-Keynsian Influences (June 2000). During the remainder of the term at University of Ex, I plan to redraft the 4 papers and prepare the first draft of a paper on the effects of the dot com collapse on growth industry in Mexico.

I have presented my research on several occasions: First Year Forum at University of Ex and the Latin American Development Bank 2000 Summer Sessions.

Proposed Work Plan:

Analyzing the effect of NAFTA on Latin American financial markets raises many questions related to international finance and macroeconomic theory. Berkeley's Economics Departments offers many courses that specifically related to the latest developments in macroeconomic and econometric theory and it's application to international financial markets. In addition, Berkeley is well known for its international focus on Latin America. Berkeley Economics Professor Charles Smith's work on Latin American financial systems is groundbreaking. Economics Professor Laura Brown is a leader in applied econometrics theory. Participating in their classes and interacting with their students would expose me to the most current economic thought in those areas. I would be able to apply their theories to the questions I plan to explore as I develop my thesis:

Can the effects of NAFTA be analyzed by studying post-Keynsian econometric modeling?

What data sets are most relevant to predicting the economic impact of the Fox administration on Mexican Gross National Product?

Can we investigate the effects of NAFTA on Mexico separately or should we compare the experience of Brazil and Argentina as well?

Lastly, by studying at Berkeley, I will be able to share the latest developments in the field of econometric application with my colleagues at the University of Ex upon my return.

Good Statement of Purpose in the Sciences:

Research Background:

My research concerns application and development of theoretical tools in nanocrystal and liquid theory. The phenomena that occur in nanocrystals and liquids (surges, swells, gushes, etc.) are described by equations that show a high degree of nonlinearity, which can be a source of both numerical and analytical difficulties. In order to investigate such phenomena, researchers apply various theoretical tools in the analysis of the describing equations. Because these equations show such a high degree of complexity, approximate methods need to be invoked. One often-used approach is to consider small perturbations to a known solution, so call perturbation theory, which simplifies the equations and thus the solving process. But even if the perturbation theory makes it easier to find approximate solutions, it still involves calculations that can be hard to carry out.

However, it has been shown that the most nanocrystal and liquid systems being studied have a common internal structure, they can be described in general terms by a Washingtonian Theory. This theory could, for example, be used to develop the above mentioned perturbation method in a way making it easier to analyze the more realistic situations too complicated for the methods existing today. The application and development of Washingtonian methods is the main goal of my research.

My personal research concentrates on the effects of strong magnetic fields on nanocrystal movements through various mediums. In observing the resulting flux fields, I hope to show that zero gravity increases the force of magnetic fields by applying the Washingtonian Theory to my findings, thus adding support to my theory that nanocrystals lack stability in a zero gravity situation.

Purpose of the scholarship:

The main purpose of the visit at Berkeley is to participate in classes taught by Professor Jane Smith, who is the world's leading expert on Washingtonian Theory and to present my own research to Professor Smith and the students working with her. Professor Smith's work on chemical concentrations and macromolecules using Washingtonian methodology directly relates to topics I hope to develop in my research. Studying at Berkeley would also be a great opportunity for me to visit some of the large number of seminars and courses in Berkeley that are not available at my home university.. However, the research and interaction with the researchers in Berkeley is to me the most important objective with the visit.

The large overlap of research areas between the group in Berkeley and the Department of Chemistry in at my home university should make a research cooperation very beneficial. For me it would be really interesting to learn about one of the specialties of Professor Smith's group and I think that by applying their knowledge and ideas my own research would certainly be improved. Furthermore, in return, I hope to contribute with some ideas concerning Washingtonian Theory in nanocrystal and liquid systems to Professor Smith's group. (Nanocrystal modification is a way of transferring energy between waves, which has a wide range of applications. It could, for example, describe energy transport in so totally different systems and global weather systems like El Nino and fusion energy devices. It would also be highly interesting for the Department of Chemistry at my home university to gain, through me, frontier knowledge of Professor Smith's work, since this is an important subject in the field of nanocrystal and liquid dynamics.