



2008 Wesleyan University Summer Experience Grant Application

When completed, save this application as a Word document and submit through MyCRC by Tuesday, March 25, 2008, at 11:59 p.m. See the Quick Start Sheet for submittal instructions. Please be aware that this is a firm deadline: you will not be able to apply after this date and time. Hard-copy applications will not be accepted.

Your Name:	Joan Bosco		
Campus Box:		Campus Phone:	
E-mail Address:		Are you a U.S. Citizen?	Yes <input checked="" type="checkbox"/> / No <input type="checkbox"/>
Major(s):	Biology, English (Pre-Med)		
Home Address:			
Home Phone:			
Organization Name:	SUNY Stony Brook and Good Shepherd Hospice		
Sponsor Name & Title:	Dr. Gary Zieve, Associate Professor of Pathology at SUNY Stony Brook and Ms. Marilyn Lisner, Volunteer Director of Good Shepherd Hospice		
Address:	Dr. Zieve: Ms. Lisner:		
Sponsor Phone:	Dr. Zieve: Ms. Lisner:	Sponsor Fax: Not available	
Sponsor E-mail:	Dr. Zieve Ms. Lisner: Not available		
Dates of Employment:	May 26-August 8, 2008		

1. Provide a brief overview of the organization for which you will intern or program/project you are developing.

This summer, my plan is to engage in two different experiences. Both will be useful in preparing me for my future goal of becoming a doctor, yet each encompasses a different aspect of medicine. The two activities are complementary, interconnected by the common thread of helping patients afflicted with disease. My goal for this summer is to work in a laboratory performing clinical lupus research, thus increasing my knowledge of the disease and improving my basic laboratory research skills, which are both important for a future in medicine. However, biological research is not the only aspect of medicine

that is important. Therefore, I also plan to volunteer at a hospice. Here, I will be able to develop my interpersonal and patient care skills, working directly with terminally ill patients and their families.

My plan is to perform clinical laboratory research on the autoimmune disease Systemic Lupus Erythematosus (SLE). SLE is a devastating yet often overlooked disease, caused by the body's own immune system identifying "self" molecules as "non-self" and subsequently launching an inappropriate reaction. This disease can devastate a patient's tissues, and, as a result, his or her quality of life. Unfortunately, as of now, no definitive cause for SLE is known, although it affects an estimated two million people in the United States alone. SLE, along with other autoimmune diseases associated with this disorder such as rheumatoid arthritis, can be considered systemic diseases, spreading from their point of origin to affect multiple other tissues and organs throughout the whole body. In SLE especially, the effects of autoimmunity can stimulate further autoimmune action, potentially resulting in a cascade of uncontrolled devastation of the body's tissues. Therefore, it is crucial that research be performed in order to better understand the processes behind-and the possible reasons for- the onset of autoimmune disease. This summer, my goal is to work in the pathology lab of Dr. Gary Zieve, associate professor of Pathology at SUNY Stony Brook, developing a project that will allow me to learn more about SLE. My project will involve attempting to identify and isolate the autoantigens, or "self" molecules that are attacked in SLE patients, in the hopes of better understanding the cause of SLE and therefore improving its treatment.

I have also made arrangements to volunteer at Good Shepherd Hospice in Port Jefferson, NY. The nature of this institution is to provide a safe and calm place for patients with a terminal diagnosis. Typically, these patients are diagnosed with six or less months left to live. The hospice medical staff focuses on symptom and pain control so that the patients can be as comfortable as possible. When admitted into the hospice program, patients may live in a room on the unit, or they may live in their own home, where they are cared for by hospice-affiliated home health aides. As a volunteer, I may be working with patients both in their homes and on the hospice unit itself. Good Shepherd Hospice also emphasizes spiritual support for the hospice patients and their families. Hospice chaplains are readily accessible, "walking with" the patients through their inevitable journey. As a volunteer, I will be very much involved in the patient's emotional as well as physical livelihood, caring for his or her body while helping him or her prepare for the end of life.

2. Briefly provide details of the internship or experience, including responsibilities and tasks.

As a research assistant in Dr. Zieve's laboratory, I will be designing and carrying out an independent research project, attempting to identify the autoantigens that are involved in SLE. I will be living on the SUNY Stony Brook campus, going into the lab at least five days a week for a ten-week period, or until my research is completed. During the first few weeks or so, I will be learning research techniques pertinent to my project, as well as getting acquainted with the lab and its components. This will be under the supervision of Dr. Zieve. Aside from my own research project, I will also be responsible for helping with basic laboratory chores, such as maintaining inventory, making certain solutions, cleaning the lab bench, etc. By the end of the summer, my goal is to have written a paper on my acquired results, possibly for publication.

At the hospice, the work I do will supplement my medical research, providing me with hands-on experience with the "human" side of disease. This "human side" will materialize in the form of activities that range from feeding, bathing and turning patients so as to prevent bedsores to reading or playing cards with them. Just visiting with patients in their homes or hospice rooms, talking with them or staying by them so that their primary caregiver can go out can be a significant help. Besides working with the patients directly, I will also be responsible for providing bereavement counseling

to the family of the deceased patient. For a year after the patient's death, bereavement volunteers make routine calls to the patient's family members, allowing them to express their grief while learning about ways to cope with their tragedy. As a volunteer at Good Shepherd, I will also have the opportunity to shadow a physician involved in hospice patient care and pain control. This experience will prove invaluable in preparing me for my future goal of being a doctor. I plan to volunteer at Good Shepherd at least three or four times a week, as it is a short drive from my residence at SUNY Stony Brook.

This summer, as part of my total experience, I am also going to be taking Organic Chemistry (delineated on my Summer Experience budget sheet) at the college in which I will be performing my laboratory research. This course is an important aspect of my summer experience as well, as it is important for both my current research and my future career as a doctor. The knowledge I will gain by taking Organic Chemistry this summer will provide a solid background for my lab research, as the interactions between molecules in the human body (a large component of Organic Chemistry) is precisely what I will be studying in my search to identify the autoantigens involved in SLE. Taking this class will also fulfill my medical school undergraduate curriculum requirements and will provide me with knowledge regarding molecular interactions that is important for a future in medicine.

3. How have you communicated with the employer and determined mutual interest?

I started looking for possible research mentors this past September, and came across Dr. Zieve's homepage. My goal was to perform research in the immunology or pathology field this summer, and so Dr. Zieve's work seemed very interesting and pertinent. I especially liked how his research has direct medical applications. I e-mailed Dr. Zieve to express my interest right after reading about his work. We met in person over winter break, and he indicated that he would like to have me work in his lab this coming summer. Over this past spring break, we met in person again to discuss my potential project and the dates I would be working in his lab this summer, on the provision that I am able to obtain funding from an outside source.

As for volunteering at Good Shepherd Hospice, I telephoned the volunteer director, Ms. Marilyn Lisner, about a month ago. We discussed the possibility of me volunteering at the hospice this coming summer. She responded favorably, mailing me forms that I am to fill out (background check, etc.) prior to starting in May. Since I've already had volunteer training at the Middlesex Hospice in Connecticut, I am able to start volunteering at Good Shepherd Hospice right away.

4. How will this experience enhance or broaden your career goals?

As a volunteer at a nursing home for eight years, I have been able to see firsthand the often devastating and painful effects of autoimmune disease on many patients' physical and emotional conditions. The idea for the experience I wish to undertake this summer was largely inspired by a special friend of mine. Mair caught me by surprise on one of my first days volunteering at St. Catherine of Siena Nursing Home, tugging on my candy-striper apron and proceeding to talk to me. Through her detailed stories, I was able to envision distinct images of her life. We soon became friends, and I'd make a point to stop in her room and listen to her stories every time I went to the nursing home. Every time I'd

visit her, Mair would grasp my hand, pat it, and tell me how much she appreciated my visits, as she had been feeling "blue" and talking to me was just what she needed.

As my visits went on, I noticed a gradual change. Mair would sometimes seem to get lost in the middle of her stories. Each time she'd seem more and more bitter, like her pain was becoming unbearable and she was slowly losing interest in life. Her face became more drawn out, her hands more twisted and misshapen. Every time I'd visit she would be in increasing pain, struggling more and more with her already limited mobility. One day, I came in to visit Mair, and was surprised to find her missing from her room. After inquiring as to where she was, I found her in the communal dining room, stretched out in a reclining wheelchair, fast asleep. She wouldn't wake up, even when I nudged her and called her name. The next visit I found her in the same exact state: encapsulated in a deep, trance-like, heavily-medicated sleep. Only her blue booties, poking out from under a heavy quilt, served as a remnant of the Mair I had spent many hours with.

A few weeks later, over winter break, I wrote out a holiday card for Mair, hoping she would be alert enough to read it. At the end of Hallway 3B, I was stopped by the glare of an unfamiliar name etched onto the gold plaque hanging outside of Mair's door. A passing nurse confirmed the sinking feeling in my stomach: Mair had passed away. I later learned that Mair had been afflicted with the autoimmune disease rheumatoid arthritis, which was the source of her burgeoning and relentless pain. Since rheumatoid arthritis is a systemic disorder, the disease had come to spread to other tissues and subsequently affect her whole body.

My experience with Mair and with other patients in the nursing home has sparked my interest in the field of geriatric rheumatology, inspiring me to pursue a medical career so that I can directly help patients suffering from autoimmune diseases such as SLE and arthritis. My interest in this field was confirmed when I took an Immunology course at Wesleyan last semester, increasing my knowledge of the fascinating yet unsettling concept of the body actually causing devastation to its own tissues via autoimmune disease. This coming September I will be entering my senior year at Wesleyan, and therefore will soon be applying to medical schools. Receiving the Summer Experience Grant today would provide me with the opportunity to perform research in the field of autoimmune disease, thus enhancing my candidacy for medical school. The research experience I will gain in Dr. Zieve's lab this summer will enable me to learn more about autoimmune disease, in the process allowing me to garner skills and knowledge that will be important in my future career as a medical doctor. These skills can be applied to developing a future medical career that combines clinical work with translational research. The research I hope to undertake this summer will also be a way for me to start helping patients, such as Mair, that are affected by autoimmune disease, which is my ultimate career goal.

While the work I plan to do in Dr. Zieve's lab will focus on the biological background of disease, I will be confronting disease from a different angle in the hospice. Here, I will be directly caring for patients affected by diseases like the one I will be researching, as well as by other medical conditions. While the work I do in the lab will help me to better understand the background behind patients' conditions, volunteering in the hospice will reveal the human side of my research. Along with my lab work, volunteering will also enhance my candidacy and preparedness for medical school, as I will be gaining experience in direct patient care. I will be helping patients not only physically by bathing and feeding them, but also emotionally, by talking with them and helping them to recollect their favorite memories as they work through the various emotions they are inevitably experiencing. My experience with Mair has shown me the importance of human contact, of spending time with patients who may be "feeling blue." In particular, volunteering at a hospice will provide me with experience in geriatric care, the branch of medicine I plan to pursue, as a high percentage of hospice patients are elderly. I will also be gaining experience in interacting not only with patients, but also with their families, which is an important skill for any doctor to learn. The bereavement counseling that I will be performing with the



patients' families will enable me to enhance my interpersonal skills while helping family members work through a difficult time. Lastly, the career shadowing opportunities available in the hospice will enable me to experience firsthand the job of geriatric care specialists, allowing me to gain invaluable insight into the career I plan to pursue in the future.