**2013 Goldwater Scholarship**

**Student Profile**

1. Date of birth (mm/dd/yyyy)

3. Gender

* 

Female

* 

Male

4. State (or U.S. territory) of legal residence

MS

5. Select the U.S. Congressional District for your legal residence.

3rd

6. If your legal residence is not the same as your parents, please indicate how it has been established.

7. Citizenship

* 

U.S. Citizen

* 

Permanent Resident (All permanent residents must send in a letter stating intent to become a U.S. citizen and a copy of their Permanent Resident Card.)

8a. Permanent Home Phone

8b. Cell Phone

**Schooling**

1. How many credits does your school require for graduation? 124

2. How many credits will you achieve as of January 1, 2013? 48

3. How many credits do you plan to achieve for graduation? 150

4. When do you expect to receive your baccalaureate degree? (mm/yyyy) 05/2015

5. According to the definition provided above, indicate whether you are a sophomore or junior.

* 

Sophomore

* 

Junior

6. Select your undergraduate major(s)

6a. Major 1

Chemistry

6b. Major 2

6c. Select the area that best represents your major(s).

Science

7. What will be your area/field of specialization?

Biochemistry

8. List your cumulative, unweighted GPA on a 4.00 scale for all undergraduate schools attended.

4.00

9. Institution you plan to transfer to if currently attending a two-year institution

9a. Institution state

9b. Institution city

9c. Institution name

9d. Institution code

9e. Have you applied?

  Yes     No

9f. Have you been admitted?

  Yes     No

10. What is the highest degree you plan to pursue? (You may select more than one.)

* 

M.D.

* 

Ph.D.

10a. If you have selected a combined M.D./Ph.D. degree, why is a medical degree necessary for you to achieve your research goals?

Earning a MD will provide me with a more detailed knowledge of the human body.  This background in medicine will allow me to be a more successful drug researcher in the field of cancer biology.

**Career Goal**

11. In one or two sentences, describe your career goal (see example above). This statement will be used in publications if you are selected as a scholar or honorable mention.

I plan to pursue a MD/PhD in the field of biochemistry or cancer biology in order to conduct research in the field of chemotherapy drug development.

12. You may provide a more detailed description of your career goals.

The program at Vanderbilt University is particularly attractive to me.  I believe that the MD/PhD combination will allow me to understand the human body in order to successfully study the area of oncology, particularly chemotherapy.  In addition, my ultimate ambition is to carry out research as a principal investigator at a research hospital and to synthesize a new chemotherapy drug that would be less harmful to the patient.

Educational Background

Current College or University

13. Provide the following information for your current institution.

13a. Institution state MS 13b. Institution city Hattiesburg 13c. Institution name University of Southern Mississippi 13d.

13e. Indicate institution type.

* 

2-year institution

* 

4-year institution

13f. Dates attended (from...to...)

August 2011 to Present

13g. Unweighted GPA on a 4.00 scale 4.00 13h. Letter grade achieved A

13i. Will a transcript be sent?

  Yes     No

13i1. If no to question 13i, explain.

13j. Were these college courses taken during high school?

  Yes     No

Other Schools Attended

14. College or university name (avoid abbreviations)

14a. Location   14b. Dates attended   14c. Unweighted GPA on a 4.00 scale   14d. Letter grade achieved

14e. Will a transcript be sent?

  Yes     No

14e1. If no to question 14e, explain.

14f. Were these college courses taken during high school?

  Yes     No

15. College or university name (avoid abbreviations)

15a. Location   15b. Dates attended   15c. Unweighted GPA on a 4.00 scale   15d. Letter grade achieved

15e. Will a transcript be sent?

  Yes     No

15e1. If no to question 15e, explain.

15f. Were these college courses taken during high school?

  Yes     No

16. College or university name (avoid abbreviations)

16a. Location   16b. Dates attended   16c. Unweighted GPA on a 4.00 scale   16d. Letter grade achieved

16e. Will a transcript be sent?

  Yes     No

16e1. If no to question 16e, explain.

16f. Were these college courses taken during high school?

  Yes     No

17. College or university name (avoid abbreviations)

17a. Location   17b. Dates attended   17c. Unweighted GPA on a 4.00 scale   17d. Letter grade achieved

17e. Will a transcript be sent?

  Yes     No

17e1. If no to question 17e, explain.

17f. Were these college courses taken during high school?

  Yes     No

18. If more than four months elapsed between high school and entry into college, please specifically state your activities during that time.

Coursework

Currently Enrolled

19. Courses in your major in which you are currently enrolled

19a. Course 1 Organic Chemistry I

19b. Course 2 Intro to Chemistry Research

19c. Course 3

19d. Course 4

19e. Course 5

19f. Course 6

19g. Course 7

Will Enroll

20. Courses in your major for which you will enroll

20a. Course 1 Organic Chemistry II with lab

20b. Course 2 Microbiology with lab

20c. Course 3 Genetics

20d. Course 4 Biochemistry I with lab, II, and III

20e. Course 5 Descriptive Inorganic Chemistry

20f. Course 6 Physical Chemistry I with lab

20g. Course 7 Analytical Chemistry with lab

20h. Course 8 Chemical Literature

20i. Course 9 Undergraduate Research in Chemistry

20j. Course 10 Medicinal Chemistry

20k. Course 11

20l. Course 12

20m. Course 13

20n. Course 14

Outside of Major

21. Math, science, or engineering courses outside of major for which you are enrolled or plan to enroll

21a. Course 1 Statistics

21b. Course 2 Physics II with lab

21c. Course 3 Computer Science

21d. Course 4

21e. Course 5

21f. Course 6

21g. Course 7

Awards, Honors, Scholarships

22. List any awards, honors, and/or scholarships you have received.

University of Southern Mississippi: Presidential Scholar  
Outstanding Female Freshman of the Year Finalist  
University of Southern Mississippi: President's List  
Honors College Scholar  
Mississippi Eminent Scholar Grant  
Intel International Science Fair Finalist  
Top University Score of ACS General Chemistry Exam  
Miss University of Southern Mississippi  
Distinguished Young Woman of Mississippi  
Spirit in Action Young Role Model of the Year  
Sumrall High School: Valedictorian  
Sumrall High School: Star Student

**Programs and Activities**

Research Activities

1. Research activities

In September 2012, I started to carry out research in the Wallace group.  Their research interests lie in the area of sensor design, specifically they synthesize compounds that change color (colorimetric) or change their fluorescent signal (fluorescent sensors).  A class of compounds that the Wallace group is working on detecting is entactogens, which are street drugs that mimic the effect of MDMA (Ecstasy).  My specific task in this research is to synthesize a colorimetric molecular receptor that will undergo a color change upon the binding of an entactogen.  I have recently begun the synthesis of the target molecule which will be prepared in a multi-step synthetic procedure.  It is anticipated that the target sensor will change color upon the binding of said analyte.  Although my career aspiration is to synthesize and develop new chemotherapy drugs, this research in the synthesis of sensors will be the foundation of my future career goals.  For example it will give me the perfect opportunity to get experience in carrying out organic transformations and investigate the characteristics of the molecules' binding interactions.  The binding between a molecular sensor and a targeted drug can be compared to the interactions between the types of receptors that exist on many cancer cells and oncological drugs.  These new synthetic skills I am gaining will help to prepare me for synthesizing drugs and studying their interactions in the realms of oncology.

Other Activities

2. College activities

Alpha Lambda Delta; 2011-Present  
American Chemical Society; 2011-Present  
Campus Crusade; 2011-Present  
Eagle Connection; 2012-Present  
Freshman Associates; 2011; Community Service Committee  
Golden Eagle Welcome Week Crew (GEWW Crew); 2012  
Honors College; 2011-Present; Presidential Scholar  
Kappa Delta Sorority; 2011-Present; Recruitment Assistant, SET Leader  
Parkway Heights Youth Worship Intern; 2012-Present  
Relay for Life; 2011-Present; Ceremonies Chairman  
Student Eagle Club; 2011-Present  
The Legacy; 2011-Present  
Women in Science and Engineering; 2011-Present

Professional Aspirations

3. What are your professional aspirations? Indicate which area(s) of mathematics, science, or engineering you are considering making your career and specify how your current academic program and your overall educational plans will assist you in achieving this goal.

My goal is to attend Vanderbilt University and participate in their Medical Scientist Training Program.  This academic program provides students with both a MD and a PhD upon graduation.  Once selected to the program, I will earn a PhD in either the area of cancer biology or biochemistry.  Because I will have earned a MD in addition to a PhD at the time of graduation, I will be a more successful researcher. Therefore, this will help my career as a scientist at a research hospital in an oncological drug development research laboratory.  My current academic program consists of a major in chemistry with an emphasis in biochemistry; by taking all honors chemistry courses, I am gaining a foundation that will prepare me for graduate school courses in the future.  Additionally, my research and experience gained through working in the Wallace Research Group will give me the platform and basic foundation I need on the path towards the science of drug research.

Motivation for Math, Science, or Engineering Career

4. Describe an activity or experience that has been important in clarifying or strengthening your motivation for a career in science, mathematics, or engineering.

When I entered my freshman year, I decided to major in chemistry because I had always enjoyed science in general and knew that I wanted to pursue a career in the field of science. However, I had never taken a chemistry course in high school and knew little more than a few elements of the periodic table. Despite this fact, I enrolled in honors general chemistry which proved to be a decision that has determined the direction of my career. Initially, I struggled to understand the subject, but worked diligently throughout the semester to become successful. Over the course of the year, I developed an appreciation of the subject of chemistry and realized that this was the area of science that I wanted to work in. I earned the highest grade in my chemistry course, which was coupled with the top ACS standardized general chemistry exam score for that year. This class is undoubtedly the hardest I have had during my time in college and is also the reason why I have chosen chemistry as a career.

Personal Information

5. Goldwater Scholars will be representative of the diverse economic, ethnic, and occupational backgrounds of families in the United States. Describe any characteristics or other personal information about yourself or your family that you wish to share with the selection committee.

Both of my parents are public school educators in the state of Mississippi; I come from a family of modest means, and have always known that it would be my responsibility to pay for my college education.  Therefore, as a high school student, I made it my goal to earn merit-based scholarships in order to fund my own education.  I have succeeded in this goal thus far by receiving presidential scholarship which allowed me to attend my university with all of my expenses paid for.  Being able to fund my own education has made me appreciate the value of education and has encouraged and driven me to be a better student, and in the future, a better researcher and scientist.