

THE UNIVERSITY OF ALABAMA
2008 APPLICATION FOR
RESEARCH EXPERIENCE FOR UNDERGRADUATE IN CHEMISTRY
JUNE 1 - AUGUST 9, 2008

- Mr.
1. Full name: Ms. _____ SS# _____ Date: _____
- Preferred name: _____ E-mail Address: _____
2. Address: (present): _____
- (permanent): _____
- Permanent home phone number: _____
- College phone number where you can be reached in March/April/May: _____
3. Date of Birth: _____ 4. Citizenship: _____
5. College(s) and University(ies) attended, with dates:

6. Academic Status: Sophomore _____ Junior _____ Senior _____
7. Expected graduation date _____ Overall GPA _____ Chem. GPA _____
8. List courses taken in college and grades. (Indicate those you are taking at present).
- | Chemistry | Grade | Course | Grade |
|-----------------------|--------------|-----------------------|--------------|
| General Chemistry I | _____ | General Chemistry I | _____ |
| Organic Chemistry I | _____ | Organic Chemistry | _____ |
| Organic Laboratory | _____ | Organic Laboratory | _____ |
| Physical Chemistry I | _____ | Physical Chemistry I | _____ |
| Other Chemistry name: | _____ | Other Chemistry name: | _____ |
| Mathematics I | _____ | Mathematics II | _____ |
| Mathematics III | _____ | Mathematics IV | _____ |
| Physics I | _____ | Physics II | _____ |
| Biology I | _____ | Biology II | _____ |
| Other Science name: | _____ | Language: | _____ |
9. Earliest date you could begin research: _____

10. Do you plan to attend graduate school? _____ Yes _____ No
If "yes" in chemistry (____) or biochemistry (____)? Other _____?
Does medical school figure in your plans? _____ Yes _____ No

11. Names, titles and addresses of two persons whom you have asked to write letters of recommendation. Include at least one person who can comment on your laboratory skills.

Name Address

Name Address

These letters should be sent to: Dr. John Vincent, Dept. of Chemistry, Box 870336
The University of Alabama, Tuscaloosa, AL 35487-0336

12. **Enclose with this application a short, one-page letter in which you summarize your career goals. Indicate how you think that participation in this program will assist you in attaining these goals.**

13. Indicate your top four (or more) choices of research projects or areas in order of preference:
_____ First Choice _____ Second Choice _____ Third Choice
_____ Fourth Choice _____ Other Choice

1. A Magnetically Triggered Multifunctional Nanoplatfrom for Cancer Detection and Therapy
2. Biochemistry of Chromium
3. Biorenewable Raw Materials: Extraction of Cellulose from Biomass
4. Block Co-polymer Templating of Nano-patterned Hard Drive Media
5. Chemical Sensors
6. Chromatographic Separation of Carotenoid Isomers
7. Components for Assembly of Molecular Electronics
8. Computational Approaches to Advanced Energy Systems - Actinide Chemistry
9. Computational Biogeochemistry and Geochemistry
10. Computational Main Group Chemistry
11. Computational Nanoscience - Structures of Doped Metal Oxides
12. Computational Studies for Chemical Hydrogen Storage
13. Computational Studies of Catalytic Reactions
14. Crystal Engineering: Applications of X-Ray Diffraction Techniques
15. Dendrimer-Based Nanocomposites
16. Developing New Types of Electron Donor-Acceptor Bonding as Tools for Crystal Engineering
17. Development of Novel Catalytic Reaction Methodology
18. DNA-binding Molecules
19. Electrochemical Studies of Photo-excited Carotenoids: Nature's Photoprotection System
20. Engineering Three-Component Crystal Lattices
21. Ethics in Chemistry
22. Fluorescence Techniques to Study Protein-Protein Interactions
23. Gas-phase Structures of Peptide Ions
24. Green Chemistry
25. Heavy Metal Inhibition of DNA Repair Proteins
26. How to Dramatically Improve the Graetzel Solar Cell
27. Hydrogen Storage Opportunities with Novel Valence Structures
28. Industrial Fluorine Chemistry

29. Ionic Liquids: Advanced New Materials or Enabling Technologies
30. Mass Spectrometry Studies of Peptides
31. Membranes for Polymer Electrolyte Membrane Fuel Cells
32. Metal-Catalyzed Modification of Biomolecules
33. Metallotherapeutics
34. Micro-Nanostructured Electrodes for Advanced Batteries, Electrochromatography and Fuel Cells
35. Monolayers of Organic Unimolecular Rectifiers
36. Nanoparticles and Block Copolymers for Self-Assembled Magnetic Media
37. Nanoparticles for Fuel Cell Electrocatalysis
38. New Catalysts for Environmentally Benign Synthesis
39. New Directions in Fluorous Media: Separation and Catalysis
40. New Energetic Materials Based on the Pentafluorosulfanyl (SF₅) Group
41. New Reagents for Organic Synthesis
42. Optical Properties Self-Assembled Monolayers
43. Organofluorine Chemistry
44. Organometallic Catalysts in Organic Synthesis
45. Protein Over-expression in Genetically Engineered Bacteria
46. Protein Structure by NMR
47. Quinone Free Radicals in Biological Enzymes
48. Radical Reactions inside the MCM-41 Molecular Sieve: EPR Studies
49. Scanning Tunneling and Atomic Force Microscopic Studies on Organic Molecules
50. Self-assembled FePt Nanoparticles for High Density Magnetic Recording
51. Separation Science
52. Structure and Reactions of Defects in Metal Oxides
53. Synthesis of Agents for the Treatment of Diabetes
54. Synthesis of Asymmetrically Substituted Single-Walled Carbon Nanotubes
55. Synthesis of Inorganic Materials Using Biological Templates
56. Synthesis of Modified DNAs and RNAs.
57. Synthesis of Unusual Valence Structures
58. The Synthesis of Multi-Functional Electron Donors for Formation of Complex Molecular Networks
59. Thin film Synthesis of Novel Oxide Materials Using Pulsed Laser Deposition
60. Total Synthesis of Natural Products
61. UHV Surface Science and Spectroscopy

Please note that information you provide in this application may be used for statistical analysis that may help ensure the continue growth and vitality of summer research programs for undergraduate students. All information provided will remain confidential. If you do not wish to share your information, please indicate below.

- Yes, you may use information on this form for statistical purposes.
- No, you may not use information on this form for statistical purposes.

I affirm that the information contained herein is truthful and accurate to the best of my knowledge.

Signature

Date

APPLICATION SHOULD BE MAILED TO THE ABOVE ADDRESS BY FEBRUARY 28, 2008.

**EVALUATION REPORT
SUMMER UNDERGRADUATE RESEARCH
PARTICIPATION PROGRAM IN CHEMISTRY**

ATTN.: Dr. John Vincent
Summer Undergraduate Research Program
Department of Chemistry, Box 870336
The University of Alabama
Tuscaloosa, AL 35487

Student Name _____

Instructions to Reference: Please comment on the applicant's background and achievement in chemistry, his or her laboratory skills, and his or her potential for independent study. Please mail this form to Dr. John Vincent at the above address. Thank you for your help.

<i>Evaluation of Student</i>	<i>Excellent</i>					<i>Poor</i>
<i>Work Habits</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>
<i>Ability to Follow Directions</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>
<i>Scientific Curiosity</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>
<i>Maturity</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>
<i>Chemical Knowledge for College Level</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>

Name: _____ Date: _____

Position or Title: _____

**EVALUATION REPORT
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Department of Chemistry, Box 870336
The University of Alabama
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<i>Evaluation of Student</i>	<i>Excellent</i>					<i>Poor</i>
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<i>Ability to Follow Directions</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>
<i>Scientific Curiosity</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>
<i>Maturity</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>
<i>Chemical Knowledge for College Level</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>No basis to judge</i>

Name: _____ Date: _____

Position or Title: _____