

THE UNIVERSITY OF ALABAMA
2012 APPLICATION FOR
RESEARCH EXPERIENCE FOR UNDERGRADUATE IN CHEMISTRY
MAY 27 - AUGUST 3, 2012

- 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 Football Field in a Teaspoon: Making Really High Surface Area Electrodes
- 2 Advanced Composite Fibers and Materials from Ionic Liquid Solutions
- 3 Asymmetric Reaction Methodology
- 4 Atomic Force Microscopy of DNA - Doing Chemistry on Single DNA Strands
- 5 Beyond Raney Nickel: Next Generation Hydrogenation Catalysts
- 6 Binding of Potential Drugs to Cytochrome P450
- 7 Biochemistry of Chromium
- 8 Bioorganic Reaction Mechanisms of Enzymes
- 9 Biophysical Studies of Protein Dynamics
- 10 Biorefineries: Recovery of Chemicals from Biomass using Ionic Liquids
- 11 Components for Assembly of Molecular Electronics
- 12 Computational Geochemistry for Carbon Dioxide Sequestration
- 13 Computational Approaches to Advanced Energy Systems - Actinide and Lanthanide Chemistry
- 14 Computational Biochemistry: Acid/Base Properties and Thermochemistry of Peptides
- 15 Computational Main Group Chemistry
- 16 Computational Studies of Homogeneous and Heterogeneous Catalytic Reactions
- 17 Crystal Engineering: Applications of X-Ray Diffraction Techniques
- 18 Development of Novel Catalytic Reaction Methodology
- 19 DNA as a Tool for Molecular Recognition
- 20 DNA-binding Molecules
- 21 Electrochemical sensors
- 22 Ethics in Chemistry
- 23 Fluorescent Liposomes as Functional Nanoreactors
- 24 Gas-phase Structures of Peptide Ions
- 25 Green Chemistry: Fundamentals to Applications

	Growing Organic Crystals and Determining Their Crystal Structure - Exploring New Ways to Control
26	Molecular Packing
27	How to Dramatically Improve the Graetzel Solar Cell
28	Hydrogen Storage Opportunities with Novel Valence Structures
29	Inhibition of DNA Repair Proteins by Heavy Metal and Their Relationship to Cancer
30	Inorganic Complexes as Models for Solar Energy Conversion
31	Inorganic-Organic Composite Solar Cells
32	Ionic Liquids as New Pharmaceuticals
33	Mass Spectrometry of Explosives
34	Mass Spectrometry Studies of Peptides
35	Mass spectrometry Studies to Characterize Protein-Protein Interactions
36	Medium Ring Carbocycles and Cytotoxic Xenia Diterpenoids
37	Metallotherapeutics
38	Metals and Free Radicals in Proteins
39	Monolayers of Organic Unimolecular Rectifiers
40	Nanoparticle Synthesis for Solar Cell Applications
41	Nanoparticles for Fuel Cell Electrocatalysis
42	Nanoparticles from Complexed Precursors
43	Nanostructured Metal Oxide Fuel Cell Electrodes
44	New Catalysts for Environmentally Benign Synthesis
45	New Dyes for Non-Linear Optical Applications – Advanced Materials
46	New Organic Molecules as Catalysts with "Turn-On/Off" Activity
47	New Reagents for Organic Synthesis
48	Novel Antiinflammatory and Anticancer Agents
49	Novel Energetic Materials for next Generation Propulsion
50	Organic hybrid solar cells
51	Organofluorine Chemistry
52	Organometallic Catalysts in Organic Synthesis
53	Photocatalysis using Nanoparticles for Solar Energy Conversion and Pollutant Degradation
54	Photoreactive Crosslinking to Identify New Protein-Protein Interactions in Biological Samples
55	Polymer Micelles for a Magnetically Triggered, Targeted Drug Delivery System
56	Polymer Waveguides for Explosives Detection
57	Raman Analysis of Fingerprints
58	Self-assembled FePt Nanoparticles for High Density Magnetic Recording
59	Solar Cell Interfaces
60	Spin-dependent Electron Tunneling through Organized Monolayers
61	Stable Phosphorus-derived Biradicals and their Chemistry
62	Supramolecular Chemistry: Interactions beyond the Covalent Bond
63	Synthesis of Agents for the Treatment of Diabetes
64	Synthesis of Asymmetrically Substituted Single-Walled Carbon Nanotubes
65	Synthesis of Inorganic Materials Using Biological Templates
66	Synthesis of Modified DNAs and RNAs.
67	Synthesis of New Semiconducting Materials
68	Synthesis of Organic Electron Transport Relays to Improve Efficiency of Solar Cells
69	Synthesis of Unusual Valence Structures
70	The Future of Unimolecular Electronics
71	Thermodynamics of Combustion
72	Thin Film Synthesis of Novel Oxide Materials Using Pulsed Laser Deposition
73	Total Synthesis of Natural Products
74	Ultrasensitive detection of small molecules using spectroelectrochemistry

**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: _____