THE UNIVERSITY OF ALABAMA
2018 APPLICATION FOR
RESEARCH EXPERIENCE FOR UNDERGRADUATE (REU) IN CHEMISTRY
MAY 29 – AUGUST 3, 2018
APPLICATIONS DUE FEBRUARY 28, 2018

1. Full name: Ms./Mr. ______________________________ 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).

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade</th>
<th>Course</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Chemistry I</td>
<td></td>
<td>General Chemistry II</td>
<td></td>
</tr>
<tr>
<td>Organic Chemistry I</td>
<td></td>
<td>Organic Chemistry II</td>
<td></td>
</tr>
<tr>
<td>Organic Laboratory I</td>
<td></td>
<td>Organic Laboratory II</td>
<td></td>
</tr>
<tr>
<td>Physical Chemistry I</td>
<td></td>
<td>Physical Chemistry II</td>
<td></td>
</tr>
<tr>
<td>Other Chemistry name:</td>
<td></td>
<td>Other Chemistry name:</td>
<td></td>
</tr>
<tr>
<td>Mathematics I</td>
<td></td>
<td>Mathematics II</td>
<td></td>
</tr>
<tr>
<td>Mathematics III</td>
<td></td>
<td>Mathematics IV</td>
<td></td>
</tr>
<tr>
<td>Physics I</td>
<td></td>
<td>Physics II</td>
<td></td>
</tr>
<tr>
<td>Biology I</td>
<td></td>
<td>Biology II</td>
<td></td>
</tr>
<tr>
<td>Other Science:</td>
<td></td>
<td>Language:</td>
<td></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
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</table>

These letters should be sent to: Ms. Monika Swanger, 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. Amine-Quinone Polymers and the Protection of Aluminum Aircraft Alloys against Corrosion
2. Antibiotic Resistance of Gram-Positive Pathogens
3. Asymmetric Reaction Methodology
4. Beyond Raney Nickel: Next Generation Hydrogenation Catalysts
5. Binding of Potential Drugs to Cytochrome P450
6. Biochemistry of Chromium
7. Biochemistry of RNA methyltransferases regulating meiosis
8. Building a Targeted, Magnetically Triggered Drug Delivery System for Cancer Chemotherapy
9. Carbon Dioxide Capture, Reactivity and Sequestration
10. Catalysts for Activation of C-H Bonds
11. Chemical Bonds for Storing Energy via Catalysis
12. Chemical Ordering in Binary Alloy Nanoparticles
13. Chemical Sensing of Biologically Relevant Carboxylates using Fingerprinting Techniques
14. Cocrystals - Designing Molecular Pairs to Assemble together in a Cocrystal and X-ray Crystallography of Cocrystals
15. Computational Approaches to Advanced Energy Systems - Actinide and Lanthanide Chemistry
16. Computational Biochemistry: Acid/Base Properties and Thermochemistry of Peptides
17. Computational Modeling of Complex Scattering Data
18. Computational Studies of Homogeneous and Heterogeneous Catalytic Reactions
19. Concentration, Solubilization, and Detection of Polycyclic Aromatic Hydrocarbons (PAHs)
20. Designer Alloys Built by the Self-Assembly of Metal Alloy Nanoparticles
21. Designing Metal Based Drugs that Target Cancerous and Bacterial Cells
22. Development of Catalytic Diversity in an Enzyme Scaffold
23. Development of Chemical Sensors for Airborne Pollutants
24. Development of Novel Catalytic Reaction Methodology
25. DNA Origami without the DNA
27. Electrochemical and Optical Sensors
28. Electron Transfer in DNA Processing Enzymes
29. Environmentally Friendly Methods for Converting Carbon Dioxide to Useful Products
30. Ethics in Chemistry
31. Fluorescent Nucleosides for DNA and RNA
32. Investigation of Protein Dynamics using Mass Spectrometry
33. Mass Spectrometry Ionization of Biomolecules
34. Mass Spectrometry Studies of Peptides
35. Measurements of Potential Single-Molecule Rectifiers
36. Medium Ring Carbocycles and Cytotoxic Xenia Diterpenoids
Metal and Metal Oxide Nanoparticle Catalysis
Metallotherapeutics
Metals and Free Radicals in Proteins
Nanoelectrochemistry for Ultrasensitive Detection
Nanomaterials for Batteries
Nanoparticle Synthesis for Solar Cell Applications
New Catalysts for Environmentally Benign Synthesis
New Reagents for Organic Synthesis
Novel Antiinflammatory and Anticancer Agents
One-Pot Heterogeneous Catalysts for Green Chemistry
Organic Solar Cells
Organometallic Catalysts in Organic Synthesis
Polymer-based Phosphate and Nitrate Sensors for Environmental Applications
Porous Carbon-Based Catalysts for Fuel Cells
Searching for Better Perovskite Solid Solar Cells
Separating Carbon Nanotubes by Derivatized End-Groups Followed by Ion-Exchange Chromatography
Structure and mechanism of antibiotic resistance rRNA methyltransferases
Synthesis of Agents for the Treatment of Diabetes
Synthesis of Inorganic Materials Using Biological Templates
Synthesis of Nanostructured Thermoelectrics: Materials that Convert Heat into Electrical Power
Synthesis of Novel Separation Geometries
Synthesis of Novel, Geologically-Inspired Oxides for Magnetic Applications
Synthesizing New Organic Molecules Capable of Reversible Photo-Electro-Stimulated Flexing
Synthesizing Organic Molecules that Reversibly Change Shape and Color upon Redox Change
The Design and Synthesis of Conjugated Polymers for Solar-cell Applications
The Synthesis of Charged, Ultra-high-performance Polymers
The Synthesis of Polyimines: Polymers for CO2 Capture and Drug Delivery
Thin Film Synthesis of Novel Oxide Materials Using Pulsed Laser Deposition
Total Synthesis of Natural Products
EVALUATION REPORT
SUMMER RESEARCH EXPERIENCES FOR UNDERGRADUATES (REU) PROGRAM
IN CHEMISTRY

ATTN.: Ms. Monika Swanger
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.

<table>
<thead>
<tr>
<th>Evaluation of Student</th>
<th>Excellent</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work habits</td>
<td>1 2 3 4 5</td>
<td>No basis to judge</td>
</tr>
<tr>
<td>Ability to follow directions</td>
<td>1 2 3 4 5</td>
<td>No basis to judge</td>
</tr>
<tr>
<td>Scientific curiosity</td>
<td>1 2 3 4 5</td>
<td>No basis to judge</td>
</tr>
<tr>
<td>Maturity</td>
<td>1 2 3 4 5</td>
<td>No basis to judge</td>
</tr>
<tr>
<td>Chemical knowledge for college level</td>
<td>1 2 3 4 5</td>
<td>No basis to judge</td>
</tr>
</tbody>
</table>

Name: ___________________________________________ Date: _______________________

Position or Title: ___________________________________________________________