

THE UNIVERSITY OF ALABAMA
2017 APPLICATION FOR
RESEARCH EXPERIENCE FOR UNDERGRADUATE (REU) IN CHEMISTRY
MAY 30 - July 31, 2017
APPLICATIONS DUE, FEBRUARY 28, 2017

- Mr.
1. Full name: Ms. _____ 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 II | _____ |
| Organic Chemistry I | _____ | Organic Chemistry II | _____ |
| Organic Laboratory I | _____ | Organic Laboratory II | _____ |
| Physical Chemistry I | _____ | Physical Chemistry II | _____ |
| 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: Ms. Amy Ryan, 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 Asymmetric Reaction Methodology
- 2 Beyond Raney Nickel: Next Generation Hydrogenation Catalysts
- 3 Binding of Potential Drugs to Cytochrome P450
- 4 Biochemistry of Chromium
- 5 Biochemistry of RNA methyltransferases regulating meiosis
- 6 Carbon Dioxide Capture, Reactivity and Sequestration
- 7 Catalysis in microfluidic devices
- 8 Chemical Bonds for Storing Energy via Catalysis
- 9 Chemical Ordering in Binary Alloy Nanoparticles
- 10 Chemical Sensing of Biologically Relevant Carboxylates using Fingerprinting Techniques
- 11 Cocrystals - Designing Molecular Pairs to Assemble together in a Cocrystal and X-ray Crystallography of Cocrystals
- 12 Computational Approaches to Advanced Energy Systems - Actinide and Lanthanide Chemistry
- 13 Computational Biochemistry: Acid/Base Properties and Thermochemistry of Peptides
- 14 Computational Studies of Homogeneous and Heterogeneous Catalytic Reactions
- 15 Concentration, Solubilization, and Detection of Polycyclic Aromatic Hydrocarbons (PAHs)
- 16 Conducting Polymers for Surface Coatings
- 17 Designing Metal Based Drugs that Target Cancerous and Bacterial Cells
- 18 Development of Catalytic Diversity in an Enzyme Scaffold
- 19 Development of Chemical Sensors for Airborne Pollutants
- 20 Development of Novel Catalytic Reaction Methodology
- 21 Diffuse Scattering Studies on Single Crystals of Doped Vanadium Oxides
- 22 Electrochemical and Optical Sensors
- 23 Environmentally Friendly Methods for Converting Carbon Dioxide to Useful Products
- 24 Ethics in Chemistry
- 25 Gas-phase Structures of Peptide Ions
- 26 Hydrogen Storage Opportunities with Novel Valence Structures
- 27 Improving the Synthesis of Peptide Nucleic Acids
- 28 Inorganic Coordination Compounds for Dye-Sensitized Solar Cells

29	Mass Spectrometry Studies of Peptides
30	Measurements of Potential Single-Molecule Rectifiers
31	Mechanisms of Carbohydrate Chemistry in Glycosyltransferase Enzymes
32	Medium Ring Carbocycles and Cytotoxic Xenia Diterpenoids
33	Metal and Metal Oxide Nanoparticle Catalysis
34	Metallotherapeutics
35	Metals and Free Radicals in Proteins
36	MnBi Nanoparticles for High Energy Permanent Magnets
37	Modified DNAs and RNAs
38	Nanoelectrochemistry for Ultrasensitive Detection
39	Nanomaterials for Batteries
40	Nanoparticle Synthesis for Solar Cell Applications
41	New Catalysts for Environmentally Benign Synthesis
42	New Dyes for Non-Linear Optical Applications – Advanced Materials
43	New Reagents for Organic Synthesis
44	Novel Antiinflammatory and Anticancer Agents
45	One-Pot Heterogeneous Catalysts for Fixed Bed Reactors
46	Organic Solar Cells
47	Organic Synthesis of New Hydrogen Bonding Molecules
48	Organometallic Catalysts in Organic Synthesis
49	Polymer Micelles for a Magnetically Triggered, Targeted Drug Delivery System
50	Polymer Templating of Inorganic Nano-structures
51	Polymer Waveguides for Explosives Detection
52	Polymer-based Phosphate and Nitrate Sensors for Environmental Applications
53	Polymerization of Transition Metal Complexes for Non-Platinum Group Metal Fuel Cell Catalysts
54	Searching for Better Perovskite Solid Solar Cells
55	Separating Carbon Nanotubes by Derivatized End-Groups Followed by Ion-Exchange Chromatography
56	Stable Phosphorus-derived Biradicals and Their Chemistry
57	Structure and mechanism of antibiotic resistance rRNA methyltransferases
58	Synthesis of Agents for the Treatment of Diabetes
59	Synthesis of Inorganic Materials Using Biological Templates
60	Synthesis of Nanostructured Thermoelectrics: Materials that Convert Heat into Electrical Power
61	Synthesis of Novel, Geologically-Inspired Oxides for Magnetic Applications
62	Synthesis of Unusual Valence Structures
63	Synthesizing New Organic Molecules Capable of Reversible Photo-Electro-Stimulated Flexing
64	Synthesizing Organic Molecules that Reversibly Change Shape and Color upon Redox Change
65	The Design and Synthesis of Conjugated Polymers for Solar-cell Applications
66	Thin Film Synthesis of Novel Oxide Materials Using Pulsed Laser Deposition
67	Total Synthesis of Natural Products

EVALUATION REPORT
SUMMER RESEARCH EXPERIENCES FOR UNDERGRADUATES (REU) PROGRAM
IN CHEMISTRY

ATTN.: Ms. Amy Ryan
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: _____