Cui laboratory at the Department of Biochemistry at University of Illinois Urbana-Champaign is recruiting undergraduate researchers to study the mechanism and regulation of human ribonucleotide reductase (RNR) *in vitro* and *in vivo*. Undergraduate researchers who decide to join should register for 3 credit hours in MCB 290 (~16 hrs of research efforts per week) and will be assigned a grade for their research which is included in the cumulative GPA. Please contact Chang by email changcui@illinois.edu to discuss your interest and career goals **before Aug 23rd** so you can register for MCB 290 by Sep 1st.

Research interests

RNR catalyzes the reduction of nucleotides to deoxynucleotides in almost all organisms to provide the building blocks for DNA synthesis and repair. The central role of RNR in nucleic acid metabolism makes it a promising target for cancer therapeutics and antimicrobial agents. Human RNR consists of α and β subunits which form dynamic complexes. Our laboratory aims to answer three major questions about human and other RNRs:

- Study Fe_2-Y• cofactor assembly and repair
- Trap and characterize the **active** α/β complex
- Target the **inactive** state for RNR inhibitors
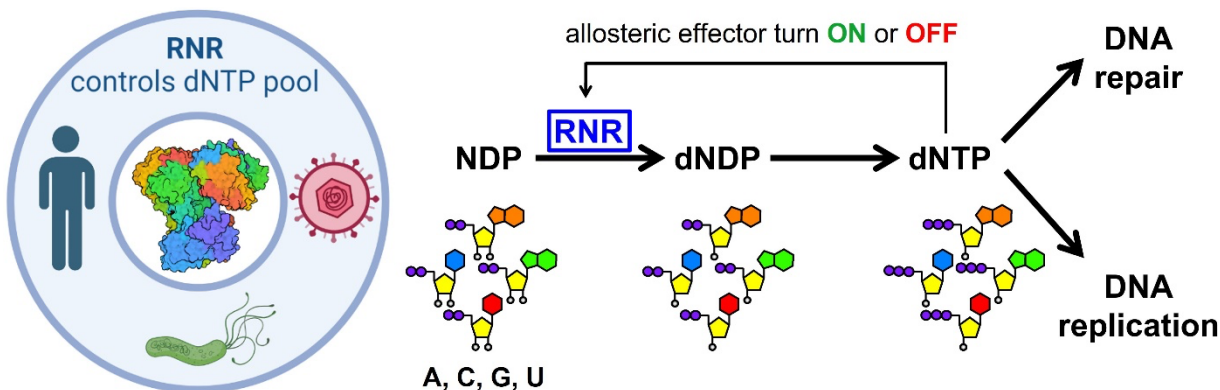
Training that Cui Lab can offer

Over 1/3 of proteins contain metal cofactors, therefore, it is essential to understand the diversity and complexity of metalloenzymes, whether you are a chemist or biologist. We will use a variety of spectroscopic, structural, and kinetic methods to characterize RNR and other regulatory proteins containing metal cofactors.

- Protein expression, purification, and activity assay
- Biophysical methods to characterize metalloenzymes
- Kinetic methods to study enzyme mechanism
- Genetic incorporation of unnatural amino acids

PI

Chang obtained her B.S. from Peking University and Ph.D. at University of Illinois at Urbana-Champaign and will return to her alma mater in November 2023 after postdoctoral training at MIT and Harvard University.

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