

## Doctor of Philosophy in Clinical-Bioanalytical Chemistry

### INTRODUCTION

The PhD program in Clinical-Bioanalytical Chemistry is a program at the forefront in the education of doctoral students at the chemical and biological science interface, with a focus on biotechnology and biomedical advances. The joint doctoral degree program between a chemistry department and a medical research institute (The Cleveland Clinic) is unique in the nation, as chemistry doctoral students are given unprecedented opportunities to do research in basic biomedical research laboratories. The incredible growth in the related industries and federal funding underscores the critical relevance of our graduate program in meeting the needs of future workforce.

### PROGRAM DESCRIPTION

The PhD degree requires a minimum of 90 credit hours of courses which include 28 credit hours of lecture courses, 2 credit hours of “Chemistry Seminar;” 1 credit hour of “PhD Candidacy Exam;” and an appropriate number of credit hours of “Advanced Chemistry Lab”, “Annual Research Report” and “PhD Dissertation”. Students in the Clinical Chemistry program that are certified by the Commission on Accreditation in Clinical Chemistry are also required to take 6 credit hours of “Internship in Clinical Chemistry”. Most lecture courses in the program are offered in the late afternoon or evening to meet the needs of working students.

### RESEARCH

The Ph.D. program has outstanding scientists with whom students conduct their coursework and dissertation research. This includes over 50 faculty members from CSU, CC, and other medical centers. These scientists represent a broad range of research interests in disease mechanism and diagnosis, clinical chemistry, bioanalytical chemistry, biomedicine, molecular biology, pharmaceutical science and computational chemistry. Numbered among this faculty are members of the National Academies of Sciences, Fulbright Scholars, and winners of the Howard Hughes Science and Research Initiative Outstanding Mentor Award. Over 18 patents are held among this group of scholars. They have published over 3,000 peer-reviewed articles, and there are over 110 active research grants representing over \$19,000,000 in annual awards. In addition, many of them have worked closely with graduate students, and co-published articles with students from the program.

### DEGREE REQUIREMENTS

A major milestone of Ph.D. study is the Ph.D. Candidacy Exam, which consists of a written proposal and an oral defense of the proposal based on the candidate’s on-going research and future research plan. Students who do not pass the candidacy exam will be given the opportunity to complete a master

degree in chemistry. The primary objective of a Ph.D. degree is the completion of a major research project under the direction of the student’s doctoral advisor(s). Once the project is completed, the student must write a dissertation describing the project and publicly defend the research and the written dissertation. A Ph.D. Dissertation Committee should consist of at least four faculty members with Graduate Faculty status within the Chemistry Ph.D. program and one member outside the Chemistry Ph.D. program.



#### For admission information contact:

Cleveland State University  
Graduate Admissions Office  
2121 Euclid Ave.

Cleveland, OH 44115  
(216) 687-5599

[www.csuohio.edu/gradcollege/](http://www.csuohio.edu/gradcollege/)

#### For program contact information:

Department of Chemistry  
Science and Research Bldg.  
Room 397, (216) 687-2451

Dr. Yan Xu, Program Director  
<http://sciences.csuohio.edu/departments/chemistry/>