



# BC601 – Responsible Conduct in Biochemistry

Spring 2021

## **Important information on COVID-19:**

All students are required to follow public health guidelines in any university space and are encouraged to continue these practices when off-campus(es). Students also are required to report any COVID-19 symptoms to the university immediately, as well as if they have potentially been exposed or have tested positive at a non-CSU testing location. If you suspect you have symptoms, please fill out the COVID Reporter (<https://covid.colostate.edu/reporter/>). If you have COVID symptoms or know or believe you have been exposed, it is important for the health of yourself and others that you complete the online COVID Reporter. Do not ask your instructor to report for you; if you report to your instructor that you will not attend class due to symptoms or a potential exposure, you are required to also submit those concerns through the COVID Reporter. If you do not have access to the internet to fill out the online COVID-19 Reporter, please call (970)491-4600.

If you report symptoms or a positive test, your report is submitted to CSU's Public Health Office. You will receive immediate, initial instructions on what to do and will also be contacted by phone by a public health official. Based on your specific circumstances, the public health official may:

- choose to recommend that you be tested and help arrange for a test
- conduct contact tracing
- initiate any necessary public health requirements or recommendations and notify you if you need to take any steps

If you report a potential exposure, the public health official will help you determine if you are at risk of contracting COVID.

For the latest information about the University's COVID resources and information, please visit the **CSU COVID-19 site** (<https://covidrecovery.colostate.edu/>).

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**Instructor:** Chaoping Chen, MRB 233, 491-0726 (office), [Chaoping.Chen@colostate.edu](mailto:Chaoping.Chen@colostate.edu)

### **Teaching/learning style/venue:**

- Class meets virtually and synchronously on Fridays, 10-11:40 am, via MS Teams, March 29<sup>th</sup> through May 14<sup>th</sup> (8 weeks).
- This course will encompass a mixture of lectures, in-class and Canvas discussions, case studies, and online RCR training.

### **Audience:**

All M.S. and second year Ph.D. students in Biochemistry. All postdocs, research scientists, research associates, etc. who are interested and/or required to fulfill the University (and Federal) requirements for face-to-face RCR training.

### **Student learning outcome and goals:**

- Students will obtain a framework for principled decision making applicable to their scientific endeavors as they specifically relate to research in the biomedical sciences. This training is critical for students who

are beginning their research careers in the biological sciences, and to all researchers in the field who have not received RCR training or require an updated RCR course.

- Participants will develop an understanding of the many facets of responsible conduct in research, specifically as they relate to research in the field of Biochemistry and the Biomedical Sciences. These topics, in part, will provide exposure to biases that arise in the execution of research and in the ethical activities related to research:
  - 1) Ethical reasoning in issues related to the collection of biochemical data, publishing, reviewing, and grant writing
  - 2) Proper treatment of experimental data, including data recording, analysis, bias, and reproducibility
  - 3) Data management, including use of image altering software (Adobe Photoshop, etc.), cropping of gels, and maintenance of accurate and traceable research notebooks
  - 4) Publication practices and authorship; awareness of research misconduct: Falsification, Fabrication, and Plagiarism
  - 5) Ethical and humane treatment of research animals: 3 R's (replacement, reduction, refinement).
  - 6) Values in science.

#### **Resources/Background reading:**

- *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/12192>.
- *Responsible Conduct of Biomedical Research: A Handbook for Biomedical Graduate Studies Students*.  
<https://oir.nih.gov/sourcebook/ethical-conduct/responsible-conduct-research-training>
- <https://poynter.indiana.edu/>
- Responsible Conduct of Research; Adil E. Shamoo and David B Resnik.
- Research Ethics: A Reader; Deni Elliott and Judy E. Stern, Editors.
- "Truth and Consequences" (Science report on the Goodwin case)
- *The Moral Instinct*, NY Times article by Steven Pinker
- *The Double Blind Gaze* by Steven Bratmann
- *The collaborative Institutional Training Initiative (CITI program)*

#### **Assessment/Grading:**

Satisfactory/Unsatisfactory as the course material is not amenable to standard exams. However, class participation is required, and will be used as a measure to assess whether a student earns a satisfactory grade. Regular attendance is mandatory and therefore is recorded. Any planned absences must be cleared in advance. Students are allowed no more than TWO absences.

All homework assignments must be completed in time to obtain a satisfactory grade.

Online RCR Training: Students must complete the required online RCR training via [CITI Program](#) by the end of the course:

#### **Academic Integrity**

This course adheres to the Academic Integrity Policy of Colorado State University as outlined at <http://tilt.colostate.edu/integrity/resourcesStudents/>. This includes agreeing to the Student Honor Pledge "I have not given, received, or used any unauthorized assistance." Academic dishonesty will not be tolerated and may result in disciplinary action and the grade of U. This includes cheating, falsification of information, plagiarism, abuse of academic material, and complicity in academic dishonesty.

## COURSE SCHEDULE

<b>Date</b>	<b>Instructor</b>	<b>Topic</b>
March 19	Chaoping Chen	Course Overview
March 26	Moti Gorin, PhD – CSU Bioethicist	Moral theories, Ethical frameworks
April 2	Kimberly Cox-York, PhD – CSU RCR Coordinator	Publication Practices, Responsible Authorship, and Peer Review; case studies
April 9	Chaoping Chen	Research misconducts – case studies and discussions
April 16	No class spring break	
April 23	Karen Dobos, PhD – Director, Research Integrity and Compliance Review	Use of Animals; Human Subjects; Infectious Agents, rDNA; Lab Safety; ethical case studies
April 30	Chaoping Chen	Data acquisition and analyses, record keeping, conflicts of interest
May 7	Mara Sdelins, PhD – Data Management Specialist, Morgan Library	Data management
May 14	Finals week; no class	Online RCR training due