

## **Department of Biochemistry, Scholarly Culture and Accountability Plan (SCAP)**

A primary goal of all laboratory members of the Department of Biochemistry at Duke University is to carry out foundational biomedically relevant research that uncovers the molecular components and mechanisms that underlying biochemical, biological, and cellular processes. As important, the Department of Biochemistry has a mission to educate the next generations of molecular scientists. As part of these missions, all members of the Department of Biochemistry are dedicated to ensuring that all studies carried out in the Department of Biochemistry are done ethically, with the highest integrity, in an open-manner, and are able to be reproduced by other scientists both within and external to the Department. Furthermore, the faculty members of the Department are committed to making their reagents available to others after any publication as well as to the appropriate storage of their primary data for others to utilize in their own studies.

As part of the SCAP of the Department of Biochemistry, the head of each laboratory must read this document, which is located on the Departmental website, and bring it to the attention of all of the members of the laboratory. Furthermore, each laboratory principal investigator (PI) must develop and implement a standard operating procedure (SOP) and/or a data management plan (DMP) with respect to its data management, data provenance, and data storage. All of our faculty have such plans in place. These plans should be discussed with every member of the laboratory and revised as necessary throughout the years. This will ensure that all members of the Department of Biochemistry understand what is necessary to carry out innovative science with the highest integrity.

Although each laboratory might have an SOP or DMP that incorporates standards that directly address the issues of scientific integrity, cultural integrity and respect of others, the Department of Biochemistry also has requirements that all members of the Department of Biochemistry, including graduate students, postdoctoral fellows, research associates, and the administrative staff, follow so that we can become a more open, just, equitable, diverse, and inclusive place to carry out our science. Included in these requirements is attendance and participation in the Responsible Conduct of Research training that is provided by Duke University. Accountability is a critical component of our mission, especially during this current time of growing mistrust of science. Hence, we must demonstrate to the general public that our research is sound and the data that we generate are true and are able to be reproduced by others.

### **What does the Department of Biochemistry do to promote a culture of accountability for scholarly data?**

The Department of Biochemistry has several mechanisms to foster a culture of data accountability and transparency. One is the “open-door” policy that the Chair and DGS have that encourages truthful discussion with graduate students, postdoctoral research associates, faculty and office staff about multiple issues that are relevant to our culture of accountability for scholarly data and the extramural funding that supports our research efforts. There is the Annual

Retreat at which data are presented in oral and poster form that allows everyone in the Department to discuss their results openly. This type of data presentation is bolstered by Research Forums, which are attended by the entire Department. Another approach that the Chair and DGS utilize is an annual meeting with the Biochemistry Graduate Students. These meetings occur every May at which the Chair and DGS hold one-on-one sessions with each class to discuss multiple issues and hence provides an opportunity to bring up concerns about the environment of each laboratory. The Chair also meets with the Postdoctoral Research Associates to discuss any concerns, which they might have. These meetings allow the Chair to take appropriate actions as needed and to reach out to others in the most appropriate offices to help address any inappropriate activity that has occurred.

The Department of Biochemistry also has several approaches to help promote a culture of accountability and scientific integrity. At each annual thesis advisory committee meeting, the mentor must leave the room after the meeting and the graduate student is then allowed to discuss with the committee **any** problems or issues, including undue pressure to obtain certain results, i.e., to “prove a hypothesis” that she/he/they are having with the laboratory head. The committee is then charged with working with the student and the head of the laboratory, either directly or indirectly, to address this issue. The Chair of the Department meets with the Non-Academic Staff once a quarter to give them the opportunity to discuss any aberrant issues about their dealings with the faculty, for example that the faculty are using their grant money appropriately. The Business Office Staff is an integral part of our Department and their input into research accountability is critical. Another mechanism that the Department of Biochemistry uses, is the “Suggestion/Issue Box”. Given that not everyone is comfortable with confrontation or meeting face-to-face with persons in authority, the Department of Biochemistry has a box that is located in the Graduate Student lounge to make general suggestions, but also to raise issues that pertain to our scholarly culture and research accountability to the attention of the Chair of the Department.

### **Some General Principles for All Biochemistry Laboratories to Follow**

- 1) Always make at least one copy of your primary data. Know where these data are at all times. It is best practice to not use the original copy of your primary data in subsequent manipulations, but rather make an exact copy and use this.
- 2) All data should be well documented including the date of collection and clearly titled.
- 3) Keep accurate notebooks. These should have sufficient detail so that other members of the laboratory will be able to follow and reproduce any procedures or manipulations on data that you have done.
- 4) Always note the strains, either prokaryotic or eukaryotic that are being used in your experiments. If there is any doubt, it is up to the laboratory to determine their origin and if necessary genetic background.
- 5) Every experiment should be properly controlled, i.e., a positive and a negative control.
- 6) Every experiment should be done at least in triplicate.
- 7) Ensure that where necessary, proper statistical analyses are used.

- 8) Test hypotheses, do not prove them, i.e., do not bias your experiments to give you the data you or your PI wants.
- 9) Discussion of all data should be done in an open, collegial manner, for instance during weekly group meeting, with no fear of retribution from the laboratory head or any member of the laboratory in any case of disagreement.
- 10) The head of the laboratory should meet frequently, both formally and informally, with all laboratory members in order to keep everyone on the same page with regard to the progress of the project and any technical problems that have arisen.
- 11) The heads of all Biochemistry laboratories must do their best to maintain a positive attitude towards all members of the laboratory and not allow any stressors, such as funding, publication, or competition by other extramural laboratories, interfere with their relationships to their trainees. We are all in this together!

### **Professionalism**

Every member of the Department of Biochemistry is required to be professional in every aspect of their work. Consequently, every faculty member of this Department will be read the Statement on Faculty Professionalism every year. The following link should be used to find the most recent version:

<https://medschool.duke.edu/about-us/faculty-resources/office-faculty/faculty-professionalism/statement-faculty-professionalism>

All other members of the Department of Biochemistry are highly encouraged to read the information in this link.

If any member of the Department of Biochemistry feels that there has been a case whereby someone, including primary and secondary faculty members, has acted in a nonprofessional manner, that person should report this to the Chair immediately. If not comfortable with reporting to the Chair, Dr. Mara Becker, the Vice Dean for Faculty for the School of Medicine, can be contacted directly ([mara.becker@duke.edu](mailto:mara.becker@duke.edu)).

### **Departmental and Intramural and Extramural Institutional Resources**

Any concerns or issues about data generated within the Department or compromised data provenance must be reported immediately to the Chair of the Department or the Vice Chair of the Department or to the Director of Graduate Studies. As a critical component of this SCAP, anyone, who raises any issue concerning data integrity, will be able to do so without fear of any recrimination.

Beyond reporting or discussing any concerns about data generated by members of the Department or data provenance with the Chair of the Department there are multiple avenues at Duke University that are available to all members of the Department.

#### **Duke Office of Scientific Integrity**

There is an anonymous Duke Integrity Hot Line: (800) 826-8109  
The Duke University Misconduct Review Officer: (919) 668-5115  
<https://dosi.duke.edu>

**Duke Office of Scientific Integrity Conflict of Interest**

<https://dosi.duke.edu/conflict-interest>

**Office for Institutional Equity (workplace environment)**

<https://oie.duke.edu>

**Occupational and Environmental Safety Office (workplace safety)**

<https://www.safety.duke.edu>

**Ombudspersons:**

University Trainees: Undergraduate, Graduate, and Professional Students  
Dr. Ada Gregory, (919) 660-2444  
E-mail: [ada.gregory@duke.edu](mailto:ada.gregory@duke.edu)

School of Medicine Trainees: Students and Postdoctorates  
Dr. Jean Spaulding, (919) 668-3326  
E-mail: [jean.spaulding@duke.edu](mailto:jean.spaulding@duke.edu)

Campus Faculty Thomas B. Metzloff, JD, (919) 613-7055  
E-mail: [metzloff@law.duke.edu](mailto:metzloff@law.duke.edu)

School of Medicine Faculty: Dr. Laura Svetkey, (919) 681-6386  
E-mail: [svetk001@mc.duke.edu](mailto:svetk001@mc.duke.edu)

**DUHS Institutional Review Board or Campus Institutional Review Board (Human Subjects)**

<https://irb.duhs.duke.edu>

**Duke Animal Care and Use Program (animal protocols)**

<https://myresearchpath.duke.edu/topics/conduct-research-animals>

**NIH Research Integrity**

<http://ori.hhs.gov/>

**Digital Imaging Processing**

<http://jcb.rupress.org/content/166/1/11.full>