

Post-baccalaureate Program Guide CU Denver Psychology Department Scholars (PDS)

(Developed by Alice Bradley, MA, CU Denver MARC U-STAR Program Coordinator 01/09/15)

Post-baccalaureate (postbac) programs are offered by both private and public educational, service and industry entities. Postbac programs are intended to provide work and additional graduate school or professional degree preparation after graduating with a bachelor's degree and prior to application to graduate school. Many postbac programs are "for profit" programs that may charge students up to \$40,000 and are intended to strengthen a student for application to medical or graduate school in order for them to meet or exceed acceptance requirements. These programs are generally not appropriate for PDS students as most PDS students are already highly competitive for graduate programs.

Although PDS students may wish to avoid "for-profit" postbac programs, other postbac programs are offered that provide "real-world," full-time work experience in the field of biomedical sciences and behavioral research. These postbac programs are offered at no cost to the participant, offer a salary or stipend, health insurance, the opportunity to work full-time in research and perhaps most importantly, allow the participant to further refine a specific area of interest for graduate studies. Many of these programs offer support for taking the GRE, as well as professional development seminars in topics such as, "How to Write a Compelling Personal Statement for Graduate School Applications," and "The Top 5 Things to Say or Not Say in your Graduate School Interview" etc. Additionally, participants will often receive mentorship from some of the top scientists in their field of interest and have the opportunity to earn outstanding letters of recommendation to accompany graduate school applications.

Potential Benefits of a Postbac Program

- Provide a break from rigorous academics between undergrad and grad school
- Offer an opportunity to experience full-time work in research
- Are "graduate-school-application-friendly"- travel and graduate school interview time is part of work and thus paid-time-off is provided for graduate school interviews
- Help decide between graduate or professional school
- Provide a year or two of work in the field while maintaining focus and keeping participants on track for further education
- Help clarify areas of specific interest for graduate school study
- Many programs offer support for taking the GRE and professional development seminars
- Help focus and make the most of graduate school studies and therefore may shorten the time to degree completion in the long run
- Offer the opportunity to work with world-class researchers and to earn compelling letters of recommendation for application to graduate or professional school programs
- Postbac mentors often provide on-going mentorship and advisement as one makes progress toward becoming an independent researcher

PDS students considering a postbac experience prior to attending graduate school are encouraged to apply for a: [National Institutes of Health \(NIH\) Post-baccalaureate Intramural Research Training Award \(POSTBAC IRTA/CRTA\)](#) or an [NIH-funded Extramural Research Training Award through the PREP program](#).

The table below depicts some subtle but important differences between the NIH IRTA and the PREP postbacs that will be helpful to note:

NIH IRTA	NIH-Funded PREP programs
Physically located directly at the NIH	Located at awarded universities across the country
Typically last 1-2 years	Typically last only 1 year with rare exceptions
Are open to all competitive applicants	Are designed specifically to attract students from groups underrepresented in science, i.e., African American, Hispanic, American Indian, Native Hawaiian and Pacific Islanders students from disadvantaged backgrounds.
Program Goal: Provide recent college graduates who are planning to apply to graduate or professional (medical/dental/pharmacy) school an opportunity to spend one or two years performing full-time research at the NIH.	Program Goal: The overall goal of PREP is to encourage individuals from groups underrepresented in the biomedical sciences and who have recently obtained their baccalaureate degrees to earn high quality Ph.D. degrees in biomedically relevant sciences through well-designed academic enhancements and extensive research experiences. In accordance with this goal, applicant institutions should recruit students from targeted groups who have expressed a strong desire to pursue biomedical Ph.D. degrees, particularly those who may have already applied to Ph.D. programs at research-intensive institutions but for reasons such as lack of research skills and experience and/or less competitive academic records, were not admitted into these programs.

The NIH IRTA postbac takes place within the NIH itself, in one of the 27 Institutes and Centers in and around the Washington, D.C. area. (The main NIH campus is in Bethesda, MD). The NIH Extramural Postbac Research Training Program is referred to as PREP (Post-Baccalaureate Research Education Program) and takes place at various universities throughout the country who have applied to the NIH and received grant funding to host a PREP Program.
([Click here for a map with links to each program](#))

The NIH Postbac IRTA program provides recent college graduates who are planning to apply to graduate or professional (medical/dental/pharmacy) school an opportunity to spend one or two years performing full-time research at the NIH. Postbacs work side-by-side with some of the leading scientists in the world, in an environment devoted exclusively to biomedical research.

Three Important Steps before Applying For an NIH Postbac:

- 1.) **Carefully review and use the tips and resources provided at:**
https://www.training.nih.gov/programs/postbac_irta
- 2.) **Watch the new video cast - Applying to the NIH Postbac Program**
<http://videocast.nih.gov/summary.asp?Live=11483&bhcp=1>
- 3.) **Contact your MARC U-STAR program staff who will be glad to help you with the process!**

The video and print information on the NIH postbac site encourages applicants to be proactive in identifying NIH researchers and projects with which they would like to work. After completing your on-line application you are encouraged to reach out to the Principal Investigator of labs in which you would like to work to inform them that you've applied and would very much like to work with them.

Below you will find a step-by-step guide to lead you through the process to help identify NIH projects with which you would like to work.

- 1.) Write out a statement describing the area of research in which you are most interested. The questions below can help you think this through and articulate what sort of research experience you are seeking.
 - a. What **type of research** do you most want to conduct? i.e., basic research, clinical research, translational research, bioinformatics?
 - b. What sort of **research setting** is most appealing to you? Do you want to work in a “wet” lab, work with animal models, work with patients in a clinical setting, bioinformatics (computer-based), and population-based studies, epidemiology (office setting) and behavioral and mental health research (potentially all settings listed above or in a community-based setting)?
 - c. Are there **specific disease areas** that are of interest to you? (i.e., cancer, heart disease, neurological disorders) If so, are you more interested in studying **prevention** methods of this disease or **treatment** of the disease?
 - d. Are you especially interested in the health of **special population groups**? i.e., children, geriatrics, LGBT health, rural health issues, minority health, health disparities, adolescents?

EXAMPLE “I am very interested in conducting translational research in a clinical and/or lab setting that explores mechanisms for the prevention of heart disease in African American women.

- 2.) Become familiar with the [National Institutes of Health \(NIH\)](#).
 - a. What is the NIH? Where is the main campus located?
 - b. What is the mission of the NIH?
 - c. What is the difference between intramural and extramural research?
 - d. How many individual “institutes and centers” operate under the NIH umbrella?
 - e. Who is the current Director of the NIH?
- 3.) Review the [list of individual NIH Institutes and Centers](#). Note that most Institutes and Centers at the NIH use acronyms to identify themselves, i.e. National Cancer Institute (NCI). Using your notes from “Step 1”, create an initial list of the NIH Institutes and Centers that look like they may support research project compatible with your own research interests.

Your initial list should be a broad list and include any institute you think that might host research projects in which you would like to participate.

EXAMPLE: Based my review of the list of National Institutes and Centers and my research interests (see example above) I would like to learn more about and explore the possibility of a conducting a postbac at the following institutes:

National Heart, Lung, and Blood Institute (NHLBI)

National Institute on Aging (NIA)

National Institute on Minority Health and Health Disparities (NIMHD)

4.) After you have drawn up your initial list of potential institutes and centers in which you want to explore a placement, use the [list of individual NIH Institutes and Centers](#) to link to and explore each of the Institutes or Centers you initially selected. Go to the “about” page. Read about the research and mission on that institute or center. Explore their site. Go back to your list and **rate the institute or center** based on how compatible it is with the research interests you identified in step one. You can create your own rating system such as a five star scale.

EXAMPLE:

National Heart, Lung, and Blood Institute (NHLBI) (5 Star Rating. It looks like a real possibility for me!)

National Institute on Aging (NIA) (2 star; still a possibility but other two institutes seem more likely to have a project close to my interests.)

National Institute on Minority Health and Health Disparities (NIMHD) (4 Star; would be supportive of my interest in African American Health but not sure if I can find a project in heart disease. Be sure to check out that NIH Academy though!)

5.) After you are done exploring and rating each of the institutes for potential and compatibility with your interests, **rank them**. In other words, in which institute are you most likely to find a lab that matches your research interests? Rank that as # 1. Your next preference, #2 and so forth.

EXAMPLE:

#1 National Heart, Lung, and Blood Institute (NHLBI)

#2 National Institute on Minority Health and Health Disparities (NIMHD)

#3 National Institute on Aging (NIA)

6.) Now that you’ve stated your research interests and gained some familiarity with the NIH Institutes and Centers it’s time to search a specialized NIH database that contains the annual reports from all the intramural research projects conducted at NIH. This is the best way to hone down and identify potential labs and PI’s to reach out to after you have submitted your postbacc application.

You can identify NIH investigators with projects that interest you by searching the [NIH Intramural Annual Reports](#).

- a. After clicking on the link above, scroll down to the second area which is labeled, “All Annual Reports by Institute or Center by Year.”
- b. Click on the blue “Request” button on the right.
- c. Select 2014 or the latest year that appears in the box.
- d. Move to the drop-down box to the right and find the Institute or Center you listed as #1 in your ranking above.
- e. Click on the blue request button.
- f. A list will be generated that containing all the research projects, PIs and a link to a full abstract describing the project and progress of their research for that year.
- g. Skim through the list of reports.
- h. Into a separate document, cut and paste any project that looks like it might be of interest. Don’t read the full abstract at this point; just make a rough list of projects you want to look at later. This will help to quickly eliminate the many projects that will be irrelevant to your search.
- i. Follow the same process for each of the other NIH Institutes and Centers in the order in which you have ranked them.

In the case of the example above, the NHLBI was the first ranked Institute. A search for NHLBI for the year 2014 yielded 203 reports. The potential postbac skimmed through the list and found four research reports describing projects that looked interesting. She cut and pasted the brief description (including the link to the full report) into another document. She next searched the NIMHD and found 4 reports for 2014 of which there were no matches to her interest. Lastly, she searched the NIA and found 202 reports for 2014 of which one report seemed to be a great match to her interests. Below is the list of 4 NHLBI and one NIA reports generated:

HL002065 (2014) Mechanisms involved in male-female differences in cardioprotection; **Elizabeth Murphy, PhD**; Although gender disparities in cardiac disease are recognized, the mechanisms through which pre-menopausal females are protected have not been fully elucidated. Cardiac disease incidence in females increases post-menopause, suggesting a role for estrogen in pre-menopausal cardioprotection.

HL005077-07 (2014) [Worksite Wellness Interventions on Vascular Function, Insulin Sensitivity, HDL](#) **Richard O Cannon, MD**; Obesity in the United States is highly prevalent, approaching 60% for black women. Our hypothesis was that nutrition education at the work place added to internet-based wellness information and exercise resources would facilitate weight and fat mass loss.

HL006012 (2014) Prevalence and Prognosis of Pulmonary Hypertension in Adults with Sickle Cell **James G Taylor, MD**; Sickle cell disease is the most common autosomal recessive disorder in the United States. Mortality in sickle cell disease is higher in those with elevated pulmonary pressures or other markers of disease severity including frequent pain, iron overload and renal insufficiency.

HL006168 (2014) Cardiovascular Health and Needs Assessment in Washington D.C. **Tiffany Michele Powell, MPH, MD**; Tiffany Michele Powell, MPH, MD; Tiffany Michele Powell, MPH, MD Evaluation of epidemiologic data can provide insight into areas of focus for promoting dietary changes as a part of a community-based weight loss intervention. The Dietary Approaches to Stop Hypertension (DASH) dietary pattern has been shown to promote weight maintenance and...

AG007390 (2014) Health, Aging and Body Composition Study **Tamara Harris, MD, MS**; The Health, Aging, and Body Composition Study (Health ABC) is a longitudinal cohort of 3,075 men and women, aged 70-79 at baseline in 1997-98, and includes 552 African American men and 729 African American women. At baseline, all cohort members reported no difficulty walking 1/4 mile or up ten step...

- 7.) The next step is to click on the links and carefully read the one-page description of research provided in each of the annual reports you selected. Determine if you the project is of interest to you and if any of your prior research experiences have prepared you to participate in the research described in the report. Identify the projects from the list above that seem to be the best matches to your interests and skills. This will become the list of PIs to whom you will reach out after you have submitted your postbac application.
- 8.) You can find contact information for the investigators in the [NIH Enterprise Directory](#). Please note that proper protocol is to EMAIL NIH investigators. It is not appropriate to call them by phone unless they have contacted you first and instructed you to call them.
- 9.) The NIH is globally considered the premier health research organization in the world. Communication with anyone at the NIH should be undertaken in a "formal" manner, including email communication. Please address any communication with personnel at NIH, i.e., Dear Dr. Milgram; Dear Ms. Price; Sincerely, Jane M. Doe. Use your full name when introducing yourself and in closing communication. You may want to ask MARC

staff, your mentor or another professor to review your communication draft prior to sending.

- 10.) The main NIH IRTA website has excellent tools and tips on reaching out to the Principal Investigators with whom you would like to work. Be sure to review these and be sure your application has been completed prior to reaching out to any specific researcher.

Finally, many other highly credible organizations offer postbac experiences other than NIH. You might want to find additional programs of interest by searching the websites of other major government-funded organizations such as the Centers for Disease Prevention and Control or the National Science Foundation or professional organizations such as the American Public Health Association or the American Psychology Association.

Students wishing additional information or support in applying for postbac experiences may contact Alice Bradley, MARC U-STAR Program Coordinator, alice.bradley@ucdenver.edu.