NIH Training Opportunities in Psychological Science

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Psychological scientists have a ripe opportunity to train at the leading medical research agency in the United States. The National Institutes of Health (NIH) is leading several high-profile initiatives, including the Cancer Moonshot, the All of Us program, and the BRAIN initiative, as part of its larger mission to promote health and reduce morbidity and mortality related to problems like heart disease, diabetes, and cancer. All of these initiatives require multidisciplinary teams and include researchers trained in psychological science. To help create this workforce, one fundamental aspect of the NIH mission is to cultivate and train the next generation of researchers who are needed to understand the multiple determinants of disease prevention, diagnosis, and treatment. These factors encompass the genetic, biological, policy-related, and behavioral and psychological, including lifestyle and the environment.

NIH trainees are mentored by experts in their area of research; meet and network with other NIH trainees and staff; attend and present at scientific conferences, workshops, and symposia; learn about the grants process; and receive training in their areas of interest. Trainees perform research, engage in quantitative and qualitative analyses, complete literature reviews and portfolio analyses, give presentations and write manuscripts, develop websites and contribute to applied communication and

project management efforts, among other activities. More information about training programs at the NIH can be found at *www.training.nih.gov/programs.*

The specific training opportunities that focus on psychological science are supported by several institutes within NIH, including the National Cancer Institute (NCI) and the National Institute for Mental Health (NIMH), along with the Office of Behavioral and Social Sciences Research (OBSSR). These examples demonstrate the breadth of opportunities, including awards to individuals to train at NIH, awards to attend NIH courses and workshops, and grant awards to institutions that the NIH supports. Many other offices, institutes, and centers at NIH offer training opportunities and can be contacted directly. The training slots typically require you to be a US citizen or permanent resident — but some fellowships are available to foreign nationals. You should check eligibility information carefully when applying.

In addition, there are individual research career development awards that are typically given to those seeking to transition to an independent academic research position after they finish their NIH fellowship. For more information, visit *https://researchtraining.nih.gov/programs/career-development/K01.*

Training Trends

Several trends in training health researchers have emerged in the 21st century. One is the emphasis on training a diverse and culturally competent generation of researchers. The demographic make-up of the United States is changing, and our research workforce needs to reflect those changes to make sure all those who seek training are afforded opportunities for an exceptional experience.

A second trend is a focus on working in multidisciplinary teams. Now more than ever, research groups representing a range of disciplines are needed to study and understand the multiple factors — from cellular to societal — that interact to affect disease prevention, progression, and treatment. Researchers trained in psychological science are needed to provide their unique perspectives, but they also need to converse and understand the language of their colleagues from different disciplines and be able to synthesize information to better understand the problem and provide solutions.

Lastly, the NIH has adopted a strategic plan for data science which highlights the need for advanced analytic methods to glean useful information from Big Data. One of the goals of this plan is to enhance the data science workforce to make sure the next generation of researchers has expertise in advanced quantitative methods and computational skills and can adhere to principles such as FAIR (Findable, Accessible, Interoperable, and Reusable) (FAIR; Wilkinson et al., 2016). This emphasis on data science methods is especially critical for those with backgrounds in psychological science, who need to be trained in the latest, cutting-edge methods and to be able to apply these to answer novel research questions.

Although OBSSR, NCI, and NIMH offer the most abundant training opportunities for psychological scientists, additional institutes and centers will have further opportunities that you should examine if interested. Visit *https://www.nih.gov/institutes-nih/list-nih-institutes-centers-offices* to learn about the various institutes and centers.

OBSSR

Because OBSSR is an office rather than an institute, opportunities for training look different than at other NIH locations. OBSSR supports training through many mechanisms and channels, as the office has the latitude to work with institutes and scientists to identify gaps and needs in the training landscape, and then can assist in developing solutions. OBSSR has worked with various NIH institutes to develop training initiatives that are core to the OBSSR mission. For example, the Office has conducted many preconference workshops and seminars, which are an effective method for disseminating information about innovative new methods or providing grants-writing information to young investigators. OBSSR is also able to cofund training grants from other NIH institutes that fit within the office's interests and mission.

OBSSR has funded an R25 program to fund short courses at academic institutions on innovative methodologies in the behavioral and social sciences (more information on the eight courses can be found at *https://obssr.od.nih.gov/training/training-supported-by-the-obssr/*). This initiative has been recently reissued (RFA-OD-19-012 Short Courses on Innovative Methodologies and Approaches in the Behavioral and Social Sciences) to augment skill development in cross-cutting and state-of-the-art approaches that may not be covered in traditional educational environments.

OBSSR also supports some training opportunities in addition to the courses supported through grant mechanisms. For example, the Office hosts the Training Institute for Dissemination and Implementation Research in Health (TIDIRH). This institute combines an online course with 2 days of in-person training to provide participants with the skills needed to conduct dissemination and implementation research across all areas of health and healthcare.

For many years, OBSSR and the National Heart Lung and Blood Institute have supported a Summer Institute on Randomized Clinical Trials. The program aims to provide a thorough grounding in the conduct of randomized clinical trials to researchers and health professionals interested in developing competence in the planning, design, and execution of randomized clinical trials involving behavioral interventions.

OBSSR and the National Institute of Drug Abuse (NIDA) sponsor a Training on Optimization of Behavioral and Biobehavioral Interventions. This short course is designed to help participants become adept at using the multiphase optimization strategy (MOST) to optimize behavioral interventions. MOST is rooted in engineering and provides a framework for engineering efficacious and effective behavioral interventions so that they can be developed in a systematic way.

OBSSR also recently issued a T32 RFA (RFA-OD-19-011: Predoctoral Training in Advanced Data Analytics for Behavioral and Social Sciences Research) that focuses on innovative computational and/or data science analytic approaches and their incorporation into training for the future BSSR health research workforce. The intent is to develop a cohort of specialized predoctoral candidates who will possess advanced competencies in data science analytics to apply to an increasingly complex landscape of behavioral and social health-related big data.

OBSSR has a long history of hosting Science and Technology Fellows from the American Academy for the Advancement of Science (AAAS). This fellowship program helps outstanding scientists and engineers gain firsthand experience with policymaking at all levels. AAAS works closely with NIH to place trainees at various institutes and offices at the NIH. OBSSR is an ideal location for trainees

interested in health research and healthcare, given its coordinating function. Trainees have broad latitude in the projects and activities that they are involved in and can experience a broad range of scientific and health-related opportunities.

In addition to the AAAS fellowship program, OBSSR has hosted trainees from other associations, including the Society for Research in Child Development (SRCD); and the Population Association of America (PAA).

National Cancer Institute

Within NCI, the Behavioral Research Program (BRP) is a good fit for those with backgrounds in psychological science. The program's interest areas include health communication; understanding cancer-related behaviors such as tobacco use, physical activity, diet/nutrition, sun safety, and alcohol use; and understanding the role of basic psychological processes, such as affect and cognition, on cancer control. Given that approximately 50% of all cancer cases could be prevented by eliminating risky behavioral factors like smoking, sedentary lifestyles, and poor nutrition, it's more important than ever to train the next generation of cancer researchers to have expertise in behavioral research.

While in the BRP as an intern, you can be involved in research, perform data analysis, write manuscripts, conduct literature reviews, get project management experience, and provide content and update websites, depending on your background, training, and interests. One thing to note: the BRP does not offer lab-based training opportunities; for those, you should consider NIMH.

So, how do you join the BRP? Many BRP trainees are part of the Cancer Research Training Award (CRTA) mechanism. These full-time trainees are usually here for at least 1 year. Postdocs may be able to extend up to 5 years, while bachelor's and master's trainees can extend up to 2 years and 3 years, respectively. CRTA opportunities are open on a rolling basis and can be found, when available, on the BRP Career and Training page.Those interested in summer internships should sign up through the NIH Summer Internship website at *www.training.nih.gov/programs/sip*. Once registered, applicants can reach out to BRP researchers to inquire about placements. The BRP also hires trainees who are accepted into the NCI Communications Fellowship (NCF, formerly known as the Health Communications Internship Program, HCIP), which provides recent graduate students with training in either health communications or science writing.

Lastly, BRP welcomes fellows from the Cancer Prevention Fellowship Program (CPFP), which is open to those who have obtained a doctoral-level degree (e.g., PhD, MD, JD). and provides 3-4 years of mentored research with a focus on cancer prevention. NCF applications open in January, and CPFP applications in May.

National Institute of Mental Health

NIMH provides an intramural (lab-based) Research Training Program that offers research fellowships at all academic stages. Unique to the NIMH is the Office of Fellowship Training (OFT), which promotes and guides career and professional development offerings to the trainee community. This hybrid approach of emphasizing research and career development prepares the next generation of young scientists for a life in biomedical research.

NIMH investigators conduct research in areas ranging from mechanisms of brain function at the behavioral, cellular, and molecular levels to clinical investigations into diagnosis, treatment, and prevention of mental illness. The program is a great match for those interested in research areas such as neurodevelopment, neurobiology of cognition and affective neuroscience, neural circuits, synaptic function, and neuroimaging. Some of the most common psychiatric illnesses studied at NIMH are schizophrenia/psychosis, major depressive disorder, obsessive-compulsive disorder, and bipolar disorder.

Trainees are hired using the NIH Intramural Research Training Award (IRTA) and Visiting Fellows Program (VFP, for foreign nationals) mechanisms. These trainees work a full-time schedule and receive practical hands-on training in a laboratory setting with a Principal Investigator (PI). Above and beyond basic lab skills, trainees are exposed to technologies such as fMRI and MEG, and techniques such as electrophysiology, optogenetics, and cognitive/behavioral testing paradigms. IRTA training can take the form of a summer fellowship for high school to graduate level students, a postbaccalaureate fellowship (of 1-2 years for BS/BA degree recipient), or predoctoral and postdoc fellowships lasting up to 5 years and open to US citizens, permanent residents, and foreign nationals. Candidates interested in any of these programs should contact NIMH PIs of interest directly to find out about position openings. Additionally, candidates will need to make sure an application is submitted for the desired fellowship experience (only summer, postbaccalaureate and predoctoral experiences require a formal application).

NIMH uses the central IRTA application systems administered by the Office of Intramural Training & Education (OITE) for summer, postbaccalaureate and predoctoral fellowships. For postdoctoral fellowships, candidates are encouraged to contact investigators directly and check job openings at OITE Postdoc Positions at NIH or *Neuroscience@NIH*. For help navigating the NIMH program site or understanding the training opportunities, contact OFT at *NIMHfellowships@intra.nimh.nih.gov*.

References

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