



GUIDE FOR UNDERSTANDING NINDS INSTITUTIONAL TRAINING GRANT (T32) APPLICATIONS AND THEIR REVIEW

Contact NINDS

Potential applicants for NINDS T32 Training grants are encouraged to contact the [Director of Training, Career Development and Workforce Diversity \(Director, TCDWD\)](#) to discuss potential applications, NINDS mission priorities and any questions related to applying or the review process.

NINDS T32 Awards

NINDS T32 awards can be used to support advanced predoctoral fellows and postdoctoral fellows. Programs can focus on one group or the other, or can be used to support both populations. Applications that are approved for both populations may support any ratio of predocs to postdocs, and can change this ratio with approval of the [Director, TCDWD](#). Programs generally may not be used to support 1st and 2nd year graduate students, as NINDS supports these students via the Jointly Sponsored Predoctoral Training Program in the Neurosciences ([JSPTPN](#)) T32. However, it may be appropriate for some highly specialized programs (for example, a neural engineering program) to support students as early as their second year. Potential applicants should obtain written approval from the [Director, TCDWD](#) before requesting such support.

NINDS intends to limit most training programs to a maximum of 4 slots, but will provide up to 8 slots per program if well-justified and appropriate. The purpose of an NINDS training grant is to help an institution sustain and grow an outstanding program, not to be the sole support of a program. To this end, all T32-supported programs should have strong institutional support. There is no dollar figure attached to the concept of “institutional support,” as each program has different needs. However, a T32 fundamentally provides only direct support for the trainees. Institutional support often comes in the form of support for additional trainees or support for programmatic activities. Simply supplementing the stipend for trainees is **not** considered institutional support for the program.

General issue: There must be a clear “added value” to these programs

NINDS T32 awards are not given simply to provide financial support to outstanding trainees in outstanding laboratories. There must be a defined program associated with the training grant and a unifying feature of the grant. Although financial support from the training grant can only go to fellows appointed to the grant, many training grants benefit others who are not directly supported financially from the grant. If appropriate, it is desirable that the training program has wide-ranging benefits. One way to look at the concept of “added value” is as follows: If trainees are supported by a mentor's R01, their training experience may be limited to activities that benefit the R01 research or research area, and their exposure to mentors, trainers and research issues may be limited to those associated with their specific lab and/or project. In contrast, support from an institutional T32 provides the opportunity, and potentially even requirement, for trainees to obtain



programmatic training and/or research experiences that benefit them but do not necessarily directly benefit the R01-supported research. If a trainee is only working on the research, working under the mentor's supervision and attending standard activities associated with a research career (e.g. lab-related journal clubs, departmental seminar series, etc.), the T32 is providing no added value over supporting the trainee from an R01. In order to obtain an NINDS T32, applicants must be able to convincingly articulate the “added-value” that is provided by the proposed program to the reviewers.

Research Areas

NINDS welcomes applications that address basic, clinical, translational or a combination of approaches in any area of research that falls within the mission of NINDS. All training programs should have a programmatic purpose; programs designed to create a uniquely trained cohort of individuals are particularly encouraged. The [TCDWD website](#) lists [T32 programs currently funded by NINDS](#).

Predoctoral programs

- a. NINDS strongly supports the use of T32 grants to support creative programs for advanced graduate students (those in years 3-5 of their graduate careers). With the burgeoning of scientific information and technical capabilities, there is a danger that trainees will obtain a narrow, highly focused education and skill set designed to master one narrow scientific area. Moreover, the growth of team science also threatens the breadth of trainee experience, as many research projects are now performed by teams of researchers, with each individual having a highly honed skill. One excellent use of a T32 (among many) is to help maintain breadth of knowledge and experience. Revolving around some theme, an organized T32 program can provide outstanding breadth of training, which is perhaps difficult to achieve in a lab-only approach. For example, T32 programs can provide trainees with expertise in both basic and clinical aspects of a research topic, and can foster cross-fertilization among trainees, even though each trainee may work in just one or the other area. Or, a T32 program can organize many laboratories and trainees around a broad topic area (e.g. neurodegeneration), whereas each individual trainee may be doing research on just one very specific disease within that area (or even on the involvement of a single molecule in a single disease). Ideally, a T32 program would provide exposure on multiple facets of a research area, which may include exposure to basic/clinical/translational approaches, multiple mechanisms at different biological levels, a variety of related diseases or basic brain processes, and/or multiple technological approaches. In all cases, the T32 program should have a strong thematic concept (not necessarily highly focused, but something that makes this program a coherent training experience that binds the participants into a single cohort).
- b. **The Jointly Sponsored Predoctoral Training Program in the Neurosciences (JSPTPN).** NINDS supports 1st and 2nd year predoctoral students through the JSPTPN,



which is administered by 7 NIH institutes. This program supports broad training in neurosciences for students who have not yet started their dissertation research. See [JSPTPN](#) for details.

Postdoctoral programs

- a. **Added Value.** The baseline (no added-value) of any postdoctoral training experience is that postdocs are hired to conduct research in a laboratory. They hone their skills, learn about a specific research area, and publish the results of their research. In the event that multiple laboratories share research interests, the labs may meet together and members of the lab interact. Along with attendance at journal clubs and seminars, this is a normal course of events. There must be more to a postdoctoral program than this to merit a T32. The events that constitute "added value" can take on many different forms. However, for departments or units that have no real programmatic structure for training postdocs, it is difficult to "manufacture" one. One of the "added values" that had previously been accepted by NINDS reviewers is to bring in new postdocs, put them on the T32 for a year and give them the required training and time to obtain independent funding, which they would apply for during the first year. **This is no longer an accepted** as "added-value," as all postdocs should apply for individual support as part of their training.
- b. **Shift from postdoc to predoc support.** In 2009, an [NINDS strategic planning panel](#), composed of extramural investigators, recommended that T32 support for postdocs be reduced and T32 support for advanced predocs be increased. NINDS is implementing this recommendation in a measured way, primarily by increasing the stringency by which real programmatic content of postdoc T32 applications are evaluated. NINDS continues to value postdoctoral training programs with strong programmatic content. Reviewers consider programmatic content ("added-value") to be one of the key justifications for support, so potential applicants are advised to consider this carefully when considering submission of an application.
- c. **Support for clinician-scientists.** Despite a goal to reduce support for postdoctoral fellows on T32s, NINDS still encourages support for the development of clinician-scientists. An explicit goal of these training programs, with a plan to achieve it, should be for the supported clinician-scientist to obtain individual funding (e.g. K award or equivalent) shortly after the end of T32 support.

Combined Predoctoral-Postdoctoral programs

These should be considered when appropriate and desired by the institution. Although predocs and postdocs are at different education and skill levels, combined training programs can be extremely beneficial to both types of trainee. These mixed programs should not simply provide support for some predocs and support for some postdocs, each in their own related but distinct



programs. There should be a single program in which both predocs and postdocs participate and interact. There may be both shared and different activities, but there should be what would be recognized by reviewers as an integrated program for both, where both benefit from the interaction, programmatic activities and collaborative possibilities created. Once a program is approved for support of both predocs and postdocs, it can change the ratio of slots devoted to one group or the other, based on the strength of the applicants. It is the desire of NINDS that programs support their strongest trainees with the greatest likelihood of benefiting from the training, and who are likely to go on to an outstanding independent research career.

T32 Supplements

NINDS strives to maintain a steady level of T32 funding, both with regard to the number of programs and the number of slots supported. Consequently, the first priority for the T32 budget is to maintain stability of the overall NINDS T32 support level. Quite often, however, money is also available for supplemental awards. As in all NINDS programs, the most important factor in providing supplemental funding is quality. Both trainees to be supported and the training opportunity provided (taking into account factors such as mentor training record, past trainee outcome, project quality, etc.) must be outstanding. In addition, supplements are typically provided to programs that have outstanding outcome data (i.e. where did trainees land), outstanding training records (e.g. publications in outstanding journals, 1st author publications, special achievements), and solid records in appointing and training members of diversity groups. Requests from programs that meet the training criteria above **and** have an excellent prior record of supporting diverse trainees are given highest priority.

Outcome

Certainly, the most important aspect of a training program is the outcome. Trainees should obtain outstanding training and research experience that will allow them to proceed to the next step in an independent research career. This should also occur in a reasonable amount of time. That said, it is clear that not all trainees will choose to pursue independent research careers, and it is understandable that some trainees will exit programs to move on to non-research, or non-independent, endeavors. However, all predoctoral students who receive a degree and all postdoctoral fellows who continue in the program for more than a short time should leave a training program with the credentials to pursue an independent research career. These credentials should include first author publications in top-tier journals and presentations at national meetings, and may also include individual grants and awards, and other benchmarks of research productivity.

The Review Process

NINDS reviews T32s in a dedicated NINDS T32 study section. Reviewers are selected based on many characteristics, including basic, clinical and translational subject matter expertise, experience with training different populations and most importantly, their dedication to training.



The final score depends upon the relative strength and the nature of the weakness(es) identified by the reviewers (weaknesses can be **negligible, minor, moderate, major** – **reviewers are asked to adhere to the [precise definitions of these words as defined for NIH scoring purposes](#)**). The scoring system works well when the score conforms to an accurate, descriptive evaluation of the strengths and weaknesses. The NINDS review group calibration stands on its own and does not reflect calibrations used by other review groups. There is no percentiling and no payline. NINDS relies on the study section to provide a score that conforms to the scoring instructions and matches the critiques. Thus, NINDS stresses to the study section that a score of 3 is a very, very good score. This score indicates that the application is “very strong with only some minor weaknesses.” Importantly, “minor weaknesses” do not substantially affect the impact of the program. Scores of 1 and 2 should rarely be given, as these scores imply exceptional strength and virtually no weaknesses at all. It is rare for a program to be devoid of even a “minor weakness,” which, by definition, has little or no effect on the impact of the program. Reviewers are instructed that, if an application reflects a weakness that negatively affects the impact of the program, this merits a score of 5 or worse.

NINDS support for a T32 program relies on both scientific merit and programmatic considerations. Consequently, we strongly recommend that potential applicants speak with the [Director, TCDWD](#) before preparing an application. NINDS will not support a T32, regardless of the results of peer review, if it does not fulfill current programmatic priorities at NINDS.

Expectations of T32 progress reports

Progress reports don't have to be long, but they must be complete in order for us to approve them and, by doing so, authorize the subsequent award year. A complete list of requirements is provided in the [PHS 2590 instructions](#). As part of the report, we must have a record of progress for each trainee supported during the previous year. Many T32 PIs have each trainee write a brief description of their project, who they are working with, their research accomplishments and their training activities. Of course, the PI may choose to provide this information him/herself. The PI should also provide highlights of the overall program in terms of any special activities associated with the program, describe any changes or enhancements to the program, indicate the outcome (where are they now, what did they accomplish?) for the reporting year's trainees that are no longer supported, and indicate whether there are any changes in mentors or other personnel. PIs must also describe their updated plans for recruitment and retention of diverse trainees, as described in a companion [document](#). Diversity recruitment and retention progress and updates must be included in all progress reports.

Help with creation of T32 tables

Perhaps the most daunting aspect of a T32 application is creation of the tables. They require an enormous amount of information and precise formatting and organization. Three common problems for applications in review are: 1) incomplete table data, 2) an inability of reviewers to extract information from the tables, due to issues related to organization or formatting and 3) a



mismatch between the text and the data in the tables. NINDS has developed and made available a program, the Trainee Tracking System (TTS), which combines a user-friendly interface, tracking database and functionality to output uniform and perfectly formatted T32 tables. This program helps applicants create T32 tables and provides a central location to store tracking information on all trainees. Moreover, using this program can be beneficial to applicants in review, as all tables are formatted perfectly and identically, which makes it easy for reviewers to find what they're looking for. Potential applicants should contact the [Director, TCDWD](#), for information about TTS.