BACKGROUND

Rising educational debt levels are a deterrent to physicians and scientists who want to develop careers as biomedical and behavioral researchers. To remove this obstacle of entry into research careers, the US Congress has enacted legislation designed to repay educational debt so that medical school graduates can elect to pursue careers in biomedical research and academic medicine unfettered by the burden of educational debt.

The NIH Loan Repayment Program (LRP) seeks to recruit and retain highly qualified physicians, dentists, and other health professionals with doctoral-level degrees in biomedical and behavioral research careers. The idea is to counter the growing economic disincentives to embark on such careers using the repayment of educational loans as an incentive. There are LRPs for health professionals pursuing clinical, pediatric, health disparities, and contraception and infertility research careers in nonprofit organizations (Extramural LRP); there also are LRPs to attract health professionals to research positions and fellowships (clinical and basic science) in the NIH Intramural laboratories (Intramural LRP).

The NIH LRPs can repay up to $35,000 per year of qualified educational loan debt. Applicants must have a doctoral level degree (PhD, MD, MD/PhD, DO, DDS, DVM, DMD, DPM, DC, ND, PharmD, or equivalent degree); must devote 50 percent or more of their time to research funded by either a nonprofit organization or government entity (federal, state, local); and have an educational loan debt equal to or exceeding 20 percent of their institutional base salary. In Fiscal Year (FY) 2002, the program was restricted to researchers with NIH grants. In FY 2003, NIH broadened eligibility to all doctoral-level clinical researchers with nonprofit or US government (federal, state, or local) funding.

OVERVIEW OF NIH LOAN REPAYMENT PROGRAMS

Participants in the NIH LRP must sign a contract agreeing to conduct qualified research activities for a minimum of two years.

The Loan Repayment Program applications contain the following components:

**Summary Report:** This includes the applicant’s home and institutional contact information, degrees earned, PI/PD name, and NIH grant number.

**Personal Statement:** This is a description of the applicant’s plans/goals for a career in clinical or pediatric research, including short-term academic and research objectives as well as long-term career objectives.

**Research Training Plan:** This is a description of the applicant’s research training program or mentoring plan.
**Research Project:** This is a description of the applicant’s current or proposed research assignment, including the applicant’s specific role in conducting the research. If the applicant does not serve as the PI on the grant, the applicant’s PI or Training Program Director (PD) is asked to concur with this statement.

**Applicant Biographical Sketch**

**Research Environment:** This is a description of the current research conducted in the laboratory where the applicant is conducting research.

**PI or PD Biographical sketch:** If the applicant is the PI, this document is not included, as it is the same as the Applicant Biographical sketch.

**Supervisor Biographical sketch:** This is a biographical sketch of the laboratory staff member (if the PI or PD is not directly supervising) who will be involved in the applicant’s mentoring program. The Supervisor Biographical sketch is optional.

**Recommendations:** Applicants can submit the names of up to five recommenders, but only three recommendations are required. Recommendation 1 is usually completed by the applicant’s PI or PD. If the applicant serves as the PI on the grant, Recommendation 1 should have been completed by the applicant’s mentor.

**Funding Information:** This is a list of the applicant’s NIH and/or non-profit research funding sources.

**NIH’s Participation in the Loan Repayment Program**

The NIH accepts LRP applications for the Clinical and Pediatric Programs only. NIH defines clinical research as follows: “patient-oriented clinical research conducted with human subjects, or research on the causes and consequences of disease in human populations involving material of human origin (such as tissue specimens and cognitive phenomena) for which an investigator or colleague directly interacts with human subjects in an outpatient or inpatient setting to clarify a problem in human physiology, pathophysiology or disease, or epidemiologic or behavioral studies, outcomes research or health services research, or developing new technologies, therapeutic interventions, or clinical trials.”

NIH defines qualified pediatric research as follows: “research directly related to diseases, disorders, and other conditions in children.”

**Review Criteria**

In reviewing the application, the peer-review panel will be asked to consider the following criteria in the form of a questionnaire:

- Appropriateness of the applicant’s previous training and experience as preparation for a career in clinical research;
- Suitability of the applicant’s proposed clinical research activities in the two-year period to foster a career in clinical research;
• Assessment of the applicant’s commitment to a research career as reflected by the personal statement of long-term career goals and the plan outlined to achieve those goals;
• Strength of recommendations attesting to the applicant’s potential for a clinical research career;
• Availability of appropriate scientific colleagues to achieve and/or enhance the applicant’s research independence; and
• Quality and appropriateness of institutional resources and facilities.

There are two different Review Criteria questionnaires: one for NEW applications and one for RENEWAL applications. The latter contains two additional questions under Section A pertaining to the accomplishments of the candidate during the previous award period. These questionnaires and the tentative score for each application must be uploaded into the Internet Assisted Review (IAR) web site by the deadline established by the Scientific Review Officer (SRO).

ADDITIONAL GUIDANCE

The LRP applications should be reviewed and rated according to the criteria on the critique template. The information below is not “review criteria,” but is provided to assist in interpreting those criteria. The definition of research for the LRP should be kept in mind as the reviews are conducted.

1. **Research Potential:** Reviewers should primarily assess LRP applicants on the basis of their research potential. Understandably, this is not a straightforward task, but in the end, reviewers should evaluate the potential of each applicant in terms of his/her chances of becoming an independent biomedical and bio-behavioral research scientist.

2. **Science:** While it is impossible not to take into account the science proposed by an LRP applicant, reviewers should place more emphasis on the individual’s potential to develop into an independent investigator. In many cases, LRP applicants already have been awarded fellowships and K grants, making the re-review of the science in these applications even less necessary. The source of the applicant’s funding is not a review criterion. When an LRP applicant has an F or a K grant, it is understandable that there is a certain amount of merit associated with these awards, but again, the source of the funding is not in itself a review criterion. Research potential is what needs to be assessed.

3. **Commitment to Research:** Reviewers often have difficulty with this item because many LRP applicants are very junior in terms of their research experience. Their CVs can be fairly short. It is much easier to feel comfortable with the accomplishments of a more senior applicant who may already be an assistant professor and have a number of peer-reviewed publications. However, the LRPs are intended to attract and retain junior scientists in order to help them develop into independent investigators. Thus, reviewers are urged to remember this goal and adjust expectations accordingly (see Personal
4. **Letters of Recommendation**: These are extremely important because they attest to an individual's research capabilities, as well as to their work ethic, enthusiasm, insight, and other important qualitative attributes (a minimum of three letters of recommendation are required).

5. **Senior Applicants**: Some LRP applicants are fairly well established; some have R01 grants and/or a distinguished publication record. Reviewers should keep in mind that these applicants are eligible because of their high level of debt. Reviewers often feel uneasy deciding between these individuals and much more junior LRP applicants. LRP applications from senior individuals should be considered according their merits. Reviewers should avoid comparing applicants, particularly “junior” versus “senior” LRP applicants.

6. **Mentor**: While LRPs are not mentored awards, many LRP applicants are very junior and are often in “mentored” research situations. Clearly those who are funded by an NIH training grant, fellowship, or career (K) award, are certainly mentored. In cases where the applicant lists a mentor, reviewers should discern whether the mentor is well qualified to function as such and whether the mentoring plan described in the application is adequate. However, LRP reviewers should evaluate the F or K mentor judiciously, since these mentors have already been peer reviewed and awarded a grant. Further information may be in a letter of reference (Career Development Plan/Training and Mentoring, Mentor’s Biographical Sketch, or Other Lab Member Biographical Sketch).

7. **Research Environment**: It is important to assess the lab and institutional setting where the research will take place. Will the applicants have the proper tools and resources needed to conduct their research, including access to other qualified individuals (see Research Environment and Other Lab Member Biographical Sketch)?

**Renewal applicants** are evaluated on the above criteria as well as their research accomplishments during their LRP contracts.

8. **Accomplishments**: What has the applicant accomplished over the past contract period? Reviewers should consider whether the applicant’s career track has progressed and is leading to independence and whether they are the PI on any grants (see Funding Sources, Research Accomplishments, Assessment of Research Accomplishments, Biographical Sketch, and Personal Statement).

**Development as an independent investigator**: Reviewers should consider the progress the applicant has made over the past few years (see Research Accomplishments, Assessment of Research Accomplishments, Biographical Sketch, and Personal Statement sections).

For more information about the NIH LRP, please go to the LRP website: [http://www.lrp.nih.gov](http://www.lrp.nih.gov).