ASN Response to NIH Request for Information (RFI): Re-envisioning U.S. Postdoctoral Research Training and Career Progression within the Biomedical Research Enterprise

Perspectives on the roles and responsibilities of the academic postdoc (e.g., what the postdoctoral position means to you, how you view it).

- From the perspective of the postdoc, the position is a transition from structured training to independent research. It provides a period to fill knowledge and skill gaps and allows the individual to develop a research portfolio that provides the basis for a future academic research career. The position also provides opportunities to expand professional networks and initiate new collaborations.

- From the perspective of the mentor, an academic postdoc has the potential to bring new knowledge, skills, and ideas to the research team, stimulate the research, yet be sufficiently independent to generate peer-reviewed publications. The academic postdoc also provides an intermediate level of mentoring to undergraduate and graduate students, particularly for day-to-day operations.

- From the perspective of the institution, a research-intensive organization thrives on a healthy and robust postdoc community. It reflects the strength of the research portfolio to attract the intellectual resources provided by this position, which in turn fosters more vibrant and expansive research. An active postdoc community also provides a pool of potential future colleagues for the institution.

Fundamental issues and challenges inhibiting recruitment, retention, and overall quality of life of postdoctoral trainees in academic research.

- The major challenge with both recruitment and retention of postdocs is fundamentally financial. Recently, entire graduate student bodies have gone on strike for higher wages. Even the most senior, highly paid postdocs typically earn significantly less than other PhD graduates who go straight to work in other career options outside of academia. Moreover, recent graduates with a lesser degree than postdocs are capable of earning more than most postdocs in careers outside of academia. Foreign nationals may come to the US as postdocs because this is their only route forward, but many American students generally have more attractive options. A 2017 review[1] of longitudinal survey data found that ex-postdocs continued to earn less on average than non-postdocs ten or more years post-PhD.

- The same 2017 article[1] points out that there appears to be a lack of new tenure track permanent academic positions while the number of graduating PhDs has grown over time, as the likelihood that a postdoc led to a tenured/TT position was only 21-27.4% for the ex-postdocs they sampled. The article also notes that "official bodies have raised

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[1] Kahn, S., Ginther, D. The impact of postdoctoral training on early careers in biomedicine. *Nat Biotechnol* 35, 90–94 (2017). https://doi.org/10.1038/nbt.3766

concerns about the working conditions, long hours, lack of benefits, and forced geographic mobility faced by postdocs, as well as the effects of postdoc jobs on families," which could also be considered potential challenges.

Existing NIH policies, programs, or resources that could be modified, expanded, or improved to enhance the postdoctoral training ecosystem and academic research career pathways.

- NIH postdoc salaries should be increased at all levels, particularly for starting postdocs. There also needs to be a regional cost-of-living adjustment. Some cities are disproportionately more expensive and more competitive than other cities or rural areas. A starting NIH postdoc annual salary is currently $56,484, but likely needs to be at least $10k more to remain competitive. As more students graduate with crippling student loan debt from both undergraduate and graduate studies, salaries need to facilitate payment of student loans while being able to meet a minimum standard of living. Student loan repayment is one of the primary concerns of current postdocs and needs to be addressed before they are able to secure mortgages, etc.

- NIH should continue to implement and support policies and programs that diversify the postdoctoral population by increasing the number of postdocs currently underrepresented in biomedical sciences research, in order to stimulate new and innovative research that advances public health.

Proven or promising external resources or approaches that could inform NIH's efforts to enhance the postdoctoral training ecosystem (e.g., improving postdoctoral recruitment, training, working environment, mentoring, job satisfaction).

- More could be done to coordinate and train existing postdocs on funding opportunities to transition out of postdoc positions and to maximize their time as a postdoc. An excellent example of an NIH initiative that is making a difference is the Institutional Research and Academic Career Development Awards (IRACDA) (K12) program. This program provides funding for salary, outstanding mentoring, and prepares graduates of the program for a variety of career opportunities. The IRACDA program and other similar programs should be expanded in scope and reach.

- ASN recommends that NIH expand the inclusion criteria and/or reach for the student loan repayment program. This is an amazing resource to reduce student loan repayment burden, but it varies across institutions and is not widely promoted. Reducing student loan repayment burden shifts the needs for salary increases for eligible postdocs. Participation in these programs also requires a commitment of the recipient to a minimum of 5 years in non-profit clinical research. This allows a period of time to allow the postdocs to secure a position in academic research, consistent with NIH's priorities.

- Institutions like St. Jude Children's Research Hospital or Princeton University have recently increased postdoc salaries beyond the NIH standards. Some universities have

implemented postdoc "term limits."[1] Academic departments may also consider tenure-track hires for top new graduates.[1]