

**The Early K99:
A New Funding Opportunity Designed for the
Career Paths of Data and Cancer Control Scientists
(RFA-CA-19-029 and RFA-CA-19-030)**

**Michele McGuirl
mcguirlma@mail.nih.gov**

Email me your questions with the subject line “Early K99”



NATIONAL CANCER INSTITUTE

Cancer Training Branch, Center for Cancer Training

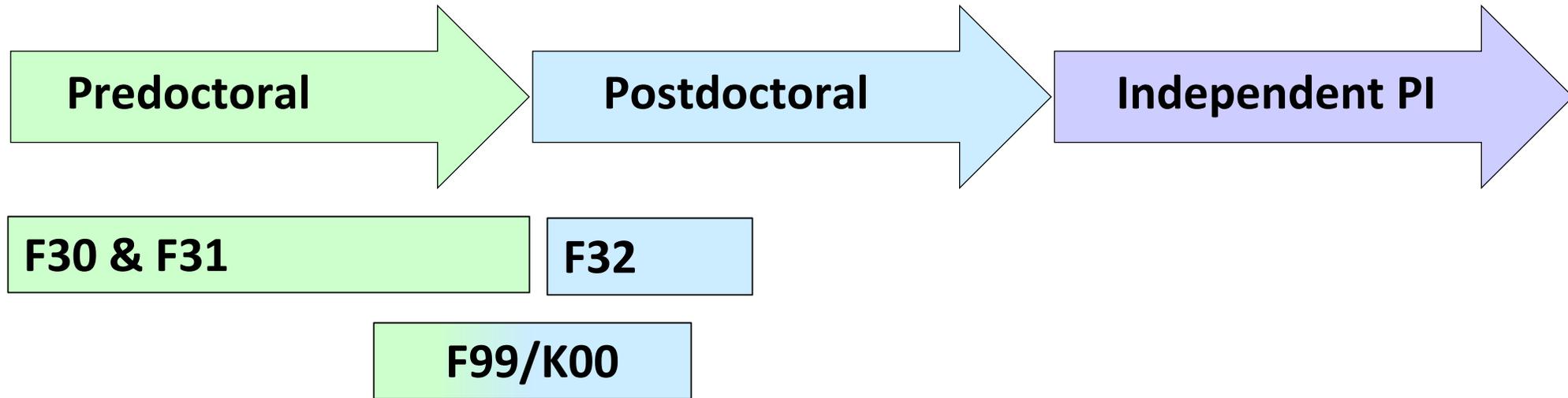
January 2, 2019

Text for Slide 1

- Thank you all for attending this webinar. I will begin by explaining how these new RFAs came about, and will then go into the eligibility requirements. I will end with guidance for preparing the application. Please email me your questions and I will respond to them after the presentation.

January 2, 2019

Cancer Training Branch – Fellowships



F30: Dual-degree students (MD/PhDs)

F31: Graduate students (also F31-Diversity)

F99/K00: Late-stage predocs → postdocs

1 nominee per institution, open to international students

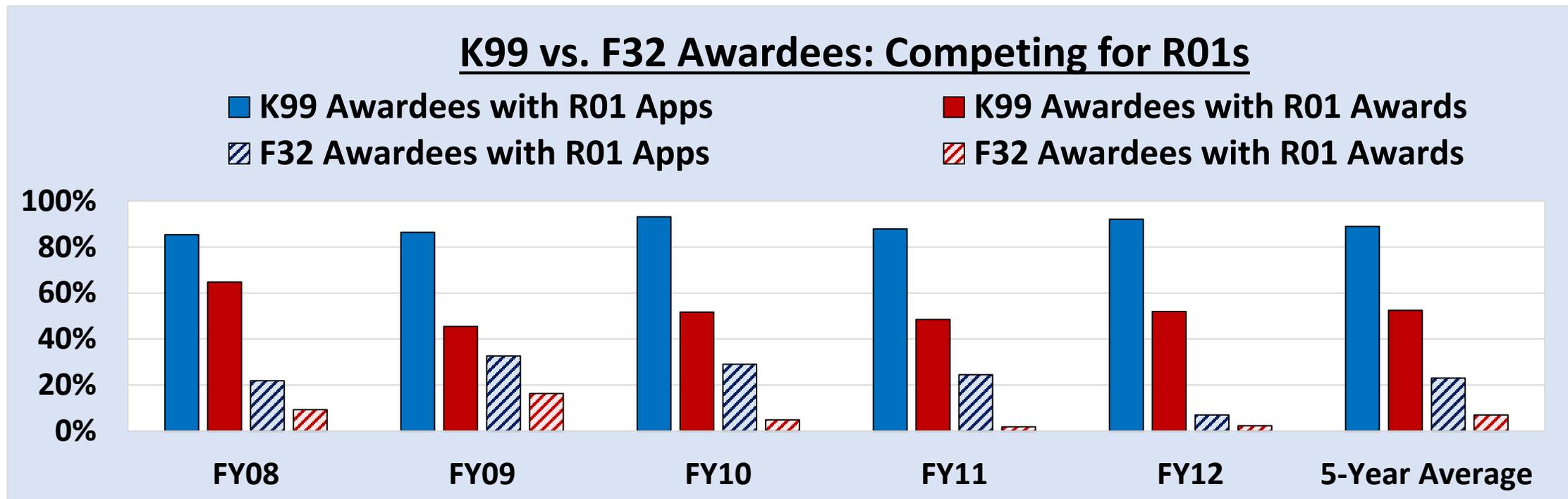
F32: Early stage postdocs, MDs

Text for Slide 3

- First, here is an overview of what we had available to predoctoral students and early stage postdocs, prior to these RFAs. These are all Fellowships, each designed for its own particular niche. There is a set of NRSA (National Research Service Awards, mandated by Congress). F30 is for dual-degree students like MD/PhDs, the F31 is for PhD graduate students, and the F32 is meant for early stage postdocs though there is no formal time limit on the # of years of postdoc experience an applicant may have. Four years ago NCI began the F99/K00 program, which is meant to retain the best graduate students on the path to becoming independent cancer researchers. This is not an NRSA award and is open to international students. It provides up to 2 years to complete the PhD and then up to 4 years of postdoctoral funding in the laboratory of one's choice.
- Fellowships are divided by the type of degree and career stage, not by the scientific research area.

K Awards Are Effective for Transition to Independence

89% of NCI K99/R00 Awardees (2008 – 2012) applied for R01s, 52% succeeded



- Takes ~3 years after independence for K99/R00 awardees to get first R01
- The F32 fellowship, which serves early stage postdocs, is no longer the preferred direct path to an independent research career

Text for slide 5

For later stage postdocs, the Cancer Training Branch has been offering 3 type of K awards. There are also diversity awards like the K01 but these are managed by another division at NCI. In theory early-stage postdocs are eligible for the existing suite of K awards, but this does not occur in reality.

The K awards are relatively new and began in ~2006. These have grown in popularity over the years and are now the preferred awards for those who go on to conduct independent research. By all measures, they are very successful: Most K99 awardees apply for R01s and over half get them. For those who have received their first R01s, our analysis shows that it takes 3 years, on average, after they transition into tenure track positions.

- An unanticipated consequence of introducing Ks is that the F32 fellowship is now much less likely to lead directly to independent positions. In the decades before the K99 was introduced, ~half of F32 awardees applied for R01s and a third succeeded. These days, about 20% of F32 awardees go on to apply for R01s and only ~5% succeed.

CTB's Current Individual K Portfolio

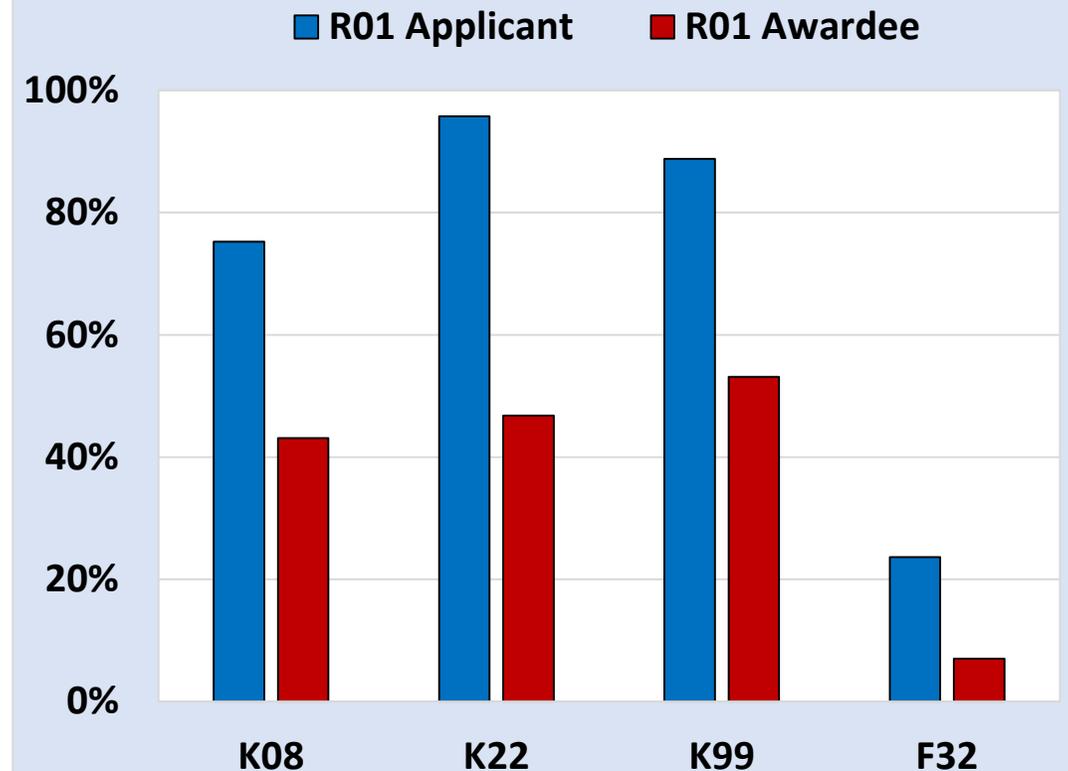
~95% of current K portfolio applicants have 3 or more years of postdoc experience at the time of application

K08: For clinician scientists at all career stages; 95% have 5+ years post-degree experience

K22: 2- 8 years postdoc research experience; 95% have 5+ years post-degree experience

K99/R00: Up to four years postdoc research experience (as of 2014), 95% have 3+ years post-degree experience

R01 Grants by NCI K and F32 Awardees
FY 2008 - 2012



Text for Slide 7

NCI offers 3 types of K awards, which are defined by the degree type and career stage, and not by scientific research area. The K08 is reserved for clinicians, the K22 is meant to catch those “late bloomer” postdocs, and the NIH Parent K99/R00 is meant for the more typical postdoc or MD/PhD. Although these are open to those with less than 3-4 years of experience, in practice almost nobody who is an early stage postdoc applies.

We took a deeper look at the data, comparing K applicant pools vs R applicant pools. This showed us that (1) NCI is not attracting or retaining data scientists, who are not lured by a \$50K F32 stipend and a 3-4 year wait to submit a K99. They just go to industry instead. (2) Those in behavioral/population sciences, which NCI refers to as “cancer control” science, were not being well-served. I’ll go into more detail about this on the next slide.

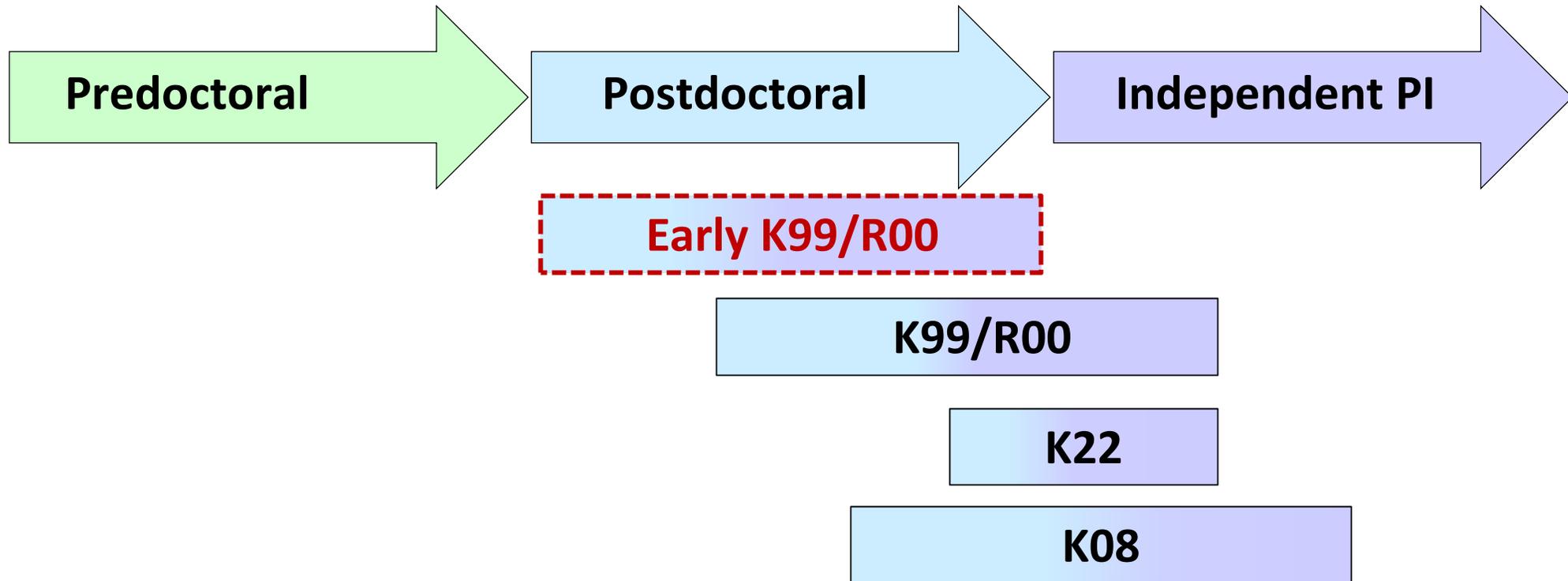
A New Transition Award is Needed for Early-Stage Postdocs

- A significant number of outstanding early-stage postdocs, mostly from data, population and behavioral sciences, get tenure-track positions after 1-2 years of postdoctoral training
- They are not competitive for current K awards, which target those with 4-8 years of research experience and a substantial publication record
- They are therefore disadvantaged compared with peers who had K transition awards
 - No protected time from teaching
 - No assurance of a competitive startup package
 - **Takes longer to get first R01 (~6 yrs) than K99/R00 awardees (~3 yrs)**

Text for Slide 9

- A survey of the 2017 R01 applicant pool from DCCPS (Division of Cancer Control and Population Sciences) shows that half began their faculty positions with less than 2 years of postdoctoral training. These young investigators are not competitive for the current K awards NCI offers, because they have not yet published results from their postdoctoral training. Therefore they do not benefit from NCI transition support to help establish their independent research programs. **This may delay the time to obtaining their first R01 award – it takes these researchers 6 years on average to get their first R01s.** To meet the needs of these outstanding early-stage postdoctoral fellows, we created the Early K99 Program.

Cancer Training Branch – Career Development Awards



K08: Any stage clinician seeking mentored research experience

K22: Late-stage postdocs (2-8 yrs experience), awarded when independent

K99/R00: Late-stage postdocs (up to 4 yrs experience) open to US visa holders

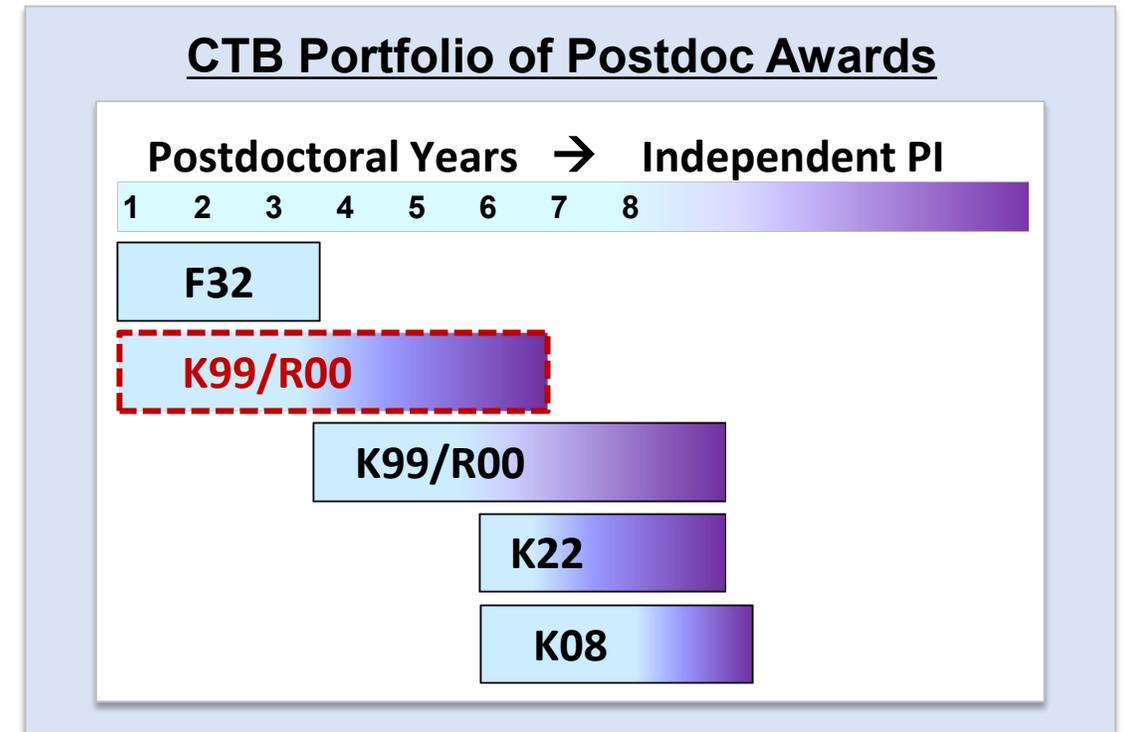
Early K99/R00: 0- 2 yrs experience, open to US visa holders

Text for slide 11

- This Fall, NCI got the green light to offer a new type of K99/R00 for postdocs with zero to two years of research experience. Our target audience is both data scientists and those involved in cancer control.

Goals of the Early K99/R00 Transition Award

- **Support the transition to independence of those who can get tenure track (or equivalent) positions sooner**
 - Bonus: further reduce the time between independence and their first R01
- **Encourage data scientists to stay on the path to independent research**
 - More competitive postdoc salary (\$100K)
 - Protected time and funds for independent phase
 - Ability to negotiate a stronger start-up package



Text for Slide 13

- The target audience for the Early K99 award are data scientists and cancer control scientists. We encourage those who do other types of science to continue to apply to the parent K99/R00 program, which is designed for their career paths and allows the time needed to develop the broader set of scientific skills needed to land a tenure track job. That said, it is possible for superstars in basic science to apply for the Early K99 program – more on this later.

Key Features of the Early K99/R00

- **Review criteria to address recommendations made by Alberts, Hyman, Pickett, Tilghman, and Varmus in *Science*, 2018. 360 (6390):716-718**
 - Applicant's readiness to transition within two years
 - Publications from postdoctoral training are not required
 - Evaluate creativity and potential of research to launch and sustain a career rather than extensive preliminary data
 - Career development plan that prepares the applicant for an independent research career
- **Applications to be reviewed by an “early K99” Special Emphasis Panel**
 - Early-stage postdocs do not compete well with later-stage applicants for K awards, due to their relatively lower postdoc productivity
 - One Receipt Date per year

Text for slide 15

- When designing the Early K99, the Cancer Training Branch considered the recommendations of the National Academies of Science and other leaders in cancer research and workforce training. So preliminary data and postdoctoral publications are not required. Instead, we want applicants to propose original novel research that will launch their careers. Equally as important is the career development plan for the K99 phase, which should prepare the applicant for independence. This should include soft skills like grantsmanship, interviewing techniques, oral and written presentations, lab and personnel management and developing a teaching statement (if appropriate). It also includes scientific skills needed to be independent – be it through hands on experience, mentoring, workshops, short courses, or formal coursework.
- Importantly, the Early K99s will be reviewed by their own Special Emphasis Panel, to avoid head-to-head competition with later stage K99/R00 applicants.

Eligibility for the Early K99/R00

- **No more than 2 years' research experience**
 - As of Application Due Date (February 26, 2019)
 - Clock begins when all requirements for the degree were met, not when degree was officially awarded
 - Postgraduate clinical training not counted against the 2-year cap
 - No resubmissions allowed but may apply again next year if still eligible and re-nominated
- **Non-US citizens may apply**

Text for slide 17

- The eligibility rules will be strictly enforced. Applicants must have had no more than 2 years of post-degree research experience as of February 26, 2019, which is the application due date. For typical PhDs, this means the applicant will have completed all the degree requirements after February 26, 2017. For those with clinical degrees, rest assured that postgraduate clinical training like residency does not count toward the 2 year cap – only actual research does. Like the parent K99, the Early K00 is open to those holding US Visas as well as US citizens, not-citizen nationals, and green card holders.
- Exceptions: documented leave of absences, part-time work, etc will be considered on a case-by-case basis

Applying for the Early K99/R00

- **Two companion RFAs issued to accommodate Clinical Trial options**
 - CT-not allowed (RFA-CA-19-029)
 - CT-required (PI proposes to lead a CT in either phase, RFA-CA-19-030)
- **NCI expects R00 phase to be at a different institution**
 - Apply if you are open to relocation and are committed to an independent research career
- **Up to 3 applications allowed per institution**
 - This is a *pilot program* – can only make 16 awards

Text for slide 19

- Applicants should choose the correct RFA to apply – this is determined by the involvement of clinical trials in either the K99 or the R00 phases. NCI expects great things of K99/R00 awardees – before applying, please examine your motivation and desire to pursue a life as an independent cancer researcher. Finally, this is a pilot program with funds for 16 awards, so only 3 applications per institution are allowed - regardless of the RFA chosen – a total of 3, not 6, applications is permitted. For the Early K99, an institution is defined as having a unique DUNS number.

Institutions limited to Three Applications per Due Date

EACH application MUST be in a different scientific area, as defined here:

- (A) Data Science:** an interdisciplinary field of inquiry in which quantitative and analytical approaches, processes, and systems are both developed and used to extract knowledge and insights from increasingly large and/or complex sets of data. This includes cancer-focused data integration and visualization, systems biology, artificial intelligence, machine learning, informatics, genomics, precision oncology, and developing analytics for epidemiological or biostatistical studies.
- (B) Cancer Control Science:** basic and applied research in the behavioral, social, and population sciences to create or enhance interventions that, independently or in combination with biomedical approaches, reduce cancer risk, incidence, morbidity, and mortality, and improve quality of life. This includes research in epidemiology, behavioral sciences, health services, surveillance, cancer survivorship, and healthcare policy.
- (C) Other Sciences:** Includes all scientific fields supported by NCI that are not included in (A) or (B). ***Applicants proposing research in (C) "Other Sciences" are strongly encouraged to apply to the parent K99/R00 program instead of the Early K99 program but may apply if it is reasonable to expect them to transition to independence with an abbreviated period of mentored research training beyond their original doctoral degrees.***

Text for slide 21

- Here's some more detail on the 3 applications. As mentioned previously, the target audience are those in (A) Data science and (B) Cancer Control science, as we have defined here.

Why include (C) Other Sciences? The Cancer Training branch is committed to offering programs by degree and career stage, not by research area. A pilot program like this will provide needed information on the needs of the scientific community, which will contribute to future program development.

Budget and Period of Support

- **RFAs to be issued annually for 5 years, but future due dates will shift to December/January**
 - Anticipated # of applications: ~80 per year total for all RFAs
 - Anticipated # of awards: 16 per year
- **This year's RFAs set the earliest start date to Dec 2019 but we expect to make awards for September 2019 start date**
- Provide Salary, Fringe Benefits, and Research Support

Cost per Awardee by Year					
	K99-Year 1	K99-Year 2	R00-Year 1	R00-Year 2	R00-Year 3
Salary	Up to \$100 K	Up to \$100 K			
~F&A @28%	~ \$28 K	~ \$28 K			
Research Support	Up to \$30 K	Up to \$30 K			
8% Indirect Costs	~ \$13 K	~ \$13 K			
Total Cost By Year	\$171 K	\$171 K	\$249 K	\$249 K	\$249 K

Text for slide 23

The Cancer Training Branch hopes to get ~80 applications and make ~16 awards. The first year of doing something new at the NIH always takes time to get approvals, and so we were unable to issue these RFAs earlier this year. As a result, the RFAs state the council date as October 2019 and an earliest start date of December 2019, which correspond to the Fiscal Year of 2020. But NCI has money to fund awards in Fiscal Year 2019, and so despite what the RFA says, we plan to make awards with start dates of September 2019.

The support is the same as the parent K99 program; The K99 phase includes up to 100K for salary, full fringe benefits including healthcare, up to 30K in research support, and 8% indirect costs to the K99 institution. In the R00 phase, the funding is \$249K/year including all costs.

NCI Website for FOAs (Funding Opportunity Announcements)

www.cancer.gov/cct

Home > Grants & Training > Training > Funding for Cancer Training



TRAINING

Cancer Training at NCI +

Resources for Trainees +

Funding for Cancer Training

NCI F30 Award

NCI F31 Award

NCI F32 Award

NCI F33 Award

NCI F99 Award

NCI K07 Award

NCI K08 Award

NCI K12 Award

NCI K22 Award

NCI K99 Award

New Early K99/R00 Award

NCI R25 Award

The Pathway to Independence Award for Outstanding Early Stage Postdoctoral Researchers (K99/R00)

The NCI Pathway to Independence Award (K99/R00) supports outstanding postdoctoral researchers who do not require extended periods of mentored research training beyond their doctoral degrees before transitioning to research independence. This "Early K99" award will help these researchers to complete needed mentored training and transition in a timely manner to independent, tenure-track or equivalent faculty positions. The "Early K99" program is designed to suit the career paths of postdoctoral fellows pursuing careers in Data Science and Cancer Control Science, who typically require only a short period of mentored research training beyond their doctoral degrees before obtaining independent faculty positions. Postdoctoral fellows in other areas of NCI-supported research are encouraged to apply to the NIH Parent K99/R00 program (PA-18-397 and PA-18-398).

Each eligible institution may submit a combined total of three applications: one for each of the three scientific areas (Data Science, Cancer Control Science, Other Sciences) that may be submitted to either RFA-CA-19-029 (K99/R00 - Clinical Trial Not Allowed) or RFA-CA-19-030 (K99/R00 - Independent Clinical Trial Required).

ON THIS PAGE

- [Applicant Eligibility](#)
- [Budget](#)

**Early K99/R00
Informational Webinar**

Wednesday, January 2, 2019

Text for Slide 25

- You may read more about the Early K99 and the parent K99 on our website, www.cancer.gov/cct. Look under the Funding for Cancer Training Tab.

Three Types of Letters Needed

BY 5 PM ON DUE DATE: 3 – 5 LETTERS OF REFERENCE

- See instructions in the application

BEFORE APPLYING: LETTER OF INTENT requested by January 26, 2019

- Email to me from institutional grants official

IN THE APPLICATION: **INSTITUTIONAL NOMINATION LETTER** – 2 page limit

- Written and signed by the head of the department or program
- Identify one of the three scientific areas and affirm applicant as the sole nominee
- Affirm the candidate's near-readiness to transition to independence
- Describe the main factors that identify the nominee as likely to obtain a tenure-track or equivalent research position at an early career stage
 - Distinctive attributes of the candidate's career to date, Successful transition to independence of other early stage postdocs from candidate's scientific area, affiliated department or program; and/or laboratory of the primary mentor

Text for slide 27

- In addition to the 3-5 reference letters that are required for all K99s, the early K99 asks for 2 additional types of letters. The first is a Letter of Intent. This is not strictly required, but it does help NCI with planning and structuring the review panel. It also helps in case more than one person thinks he/she is the official nominee in a given scientific area. So please, if possible, let me know if you will be submitting.
- The Institutional Nomination Letter is a required element of the application. It has very specific requirements, and if it is not included, the application will not go to review. It should be written by the department or program head. It must identify which of the 3 scientific areas the applicant is applying to, and it should offer a rationale for why the applicant is expected to succeed at transitioning to independence after an abbreviated postdoc phase. This is especially true if the scientific research area is not either Data Science or Cancer Control Science.

Major Components in An Application: R01 vs. K(F)

R01 Section of Application	Page Limits	K (F) Section of Application	Page Limits
Specific Aims	1	Specific Aims	1
Research Strategy (Significance; Innovation; Approach)	12	Candidate Information and Goals for Career Development and Research Strategy (F: Applicant section 6 p, Research Strategy 6 p)	12
		Training in the Responsible Conduct of Research	1
		Plans and Statements of Mentor and Co-mentor(s)	6
		Letters of Support from Collaborators, Contributors, and Consultants	6
		Description of Institutional Environment	1
		Institutional Commitment to Candidate's Research Career Development (not for F)	1
Biographical Sketch	5	Biographical Sketch	5

Text for slide 29

- Advice about writing the K99: Your mentor is used to writing R01 like grants. But training grants are different – half of the “meat” is about career development! A common mistake is for K and F applicants to focus on the science and not the career development professional development aspects of the application. Identify your existing strengths and the gaps in your training that need to be filled, and make sure the Candidate Information and the Mentor statement propose activities to fill in those gaps.

Tips for the Mentor and Candidate Sections

- **The primary sponsor/mentor:** strong track record of funding and successfully mentoring similar young investigators
- **The mentoring team:** encompass all the areas of expertise needed for you to achieve your research aims and career development goals—no gaps!
- **Communication is key:** your plans and your mentor's plans for you should be in sync, with the goal to identify and fill gaps in your training
 - Each should write a personalized career development plan (this is a K, not an R!)
 - Coursework, seminars, workshops, conferences, meetings with mentors & advisors
 - State whose ideas are in the application
 - Add future plans for publications and grant applications (types and timing)
- **Timeline:** show the relationship between the specific aims and other activities

Text for slide 31

- Here are some tips for writing the “soft skills” sections:
 1. Reviewers want you to state clear career goals and to propose a pathway to get there, which begins with the K99 award activities and research. They will look at your mentor very carefully for scientific success and evidence they are good at building the careers of their mentees.
 2. The Candidate Section and the Mentor Statement must be in sync – speak with your K99 mentor before he/she writes their section. Don’t be afraid to ask for changes.
 3. Your mentor should unequivocally state that the ideas are yours and the project is yours to take with you when you move on.
 4. Present the big picture for your career, what you need to get there, and how the K99 will help that journey.

Tips for Writing the Early K99 Research Strategy

- **Develop a research plan feasible for one person to carry out in 3-5 years**
 - Preliminary Data are not required - may be based on literature to show feasibility
 - Address Significance, Innovation, and Approach, including Rigor & Reproducibility of prior research that supports your hypotheses
- **Research should reflect your own ideas, not your mentor's**
 - Use “I” instead of “We” whenever appropriate
- **Allocate time for mentor to provide real feedback, not just grammatical edits**

Text for slide 33

For the early K99, preliminary data are not required. We wanted to encourage creativity and the development of research plans that can launch and sustain a career. Be sure you have aims that span both phases of the award, not just the K99 phase.

The proposed research needs to be yours to take with you. If not, your independent career may stall because your mentor can definitely out-compete you. Discuss this NOW – TODAY - with your mentor, before you begin writing. Also, NCI does not fund K99s if they have too much overlap with a mentor's R01, so you need to communicate clearly with your mentor about what can go with you and what needs to stay with the mentor.

General Tips: Change is the Only Constant

- **Read the Funding Opportunity Announcements**
 - See especially Section V. Application Review Information
- **Follow the instructions in the Application Guide**
 - Include everything that is requested and nothing that isn't
- **Use the correct forms**
 - NIH updates/modifies them regularly
- **Apply before the due date and take advantage of the 2-day application viewing window**
- **Don't rely solely on a past awardee's experience**

Tips for slide 35

- These are good tips for all NIH applicants, no matter the career stage.

Michele.McGuirl@nih.gov



**NATIONAL
CANCER
INSTITUTE**

www.cancer.gov

www.cancer.gov/espanol

January 2, 2019