

Tips for Preparing NCI NRSA Fellowship (F31/F31 Diversity) and Career Development (K99/R00 and Early K99/R00) Award Applications

*Ruth L. Kirschstein National Research Service Award
(NRSA) for Individual Predoctoral Fellows (F31)
The Pathway to Independence Award (K99/R00)*

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***NCI Ruth L. Kirschstein National Research Service
Award NRSA for Individual Predoctoral Fellows
(F31) Award***

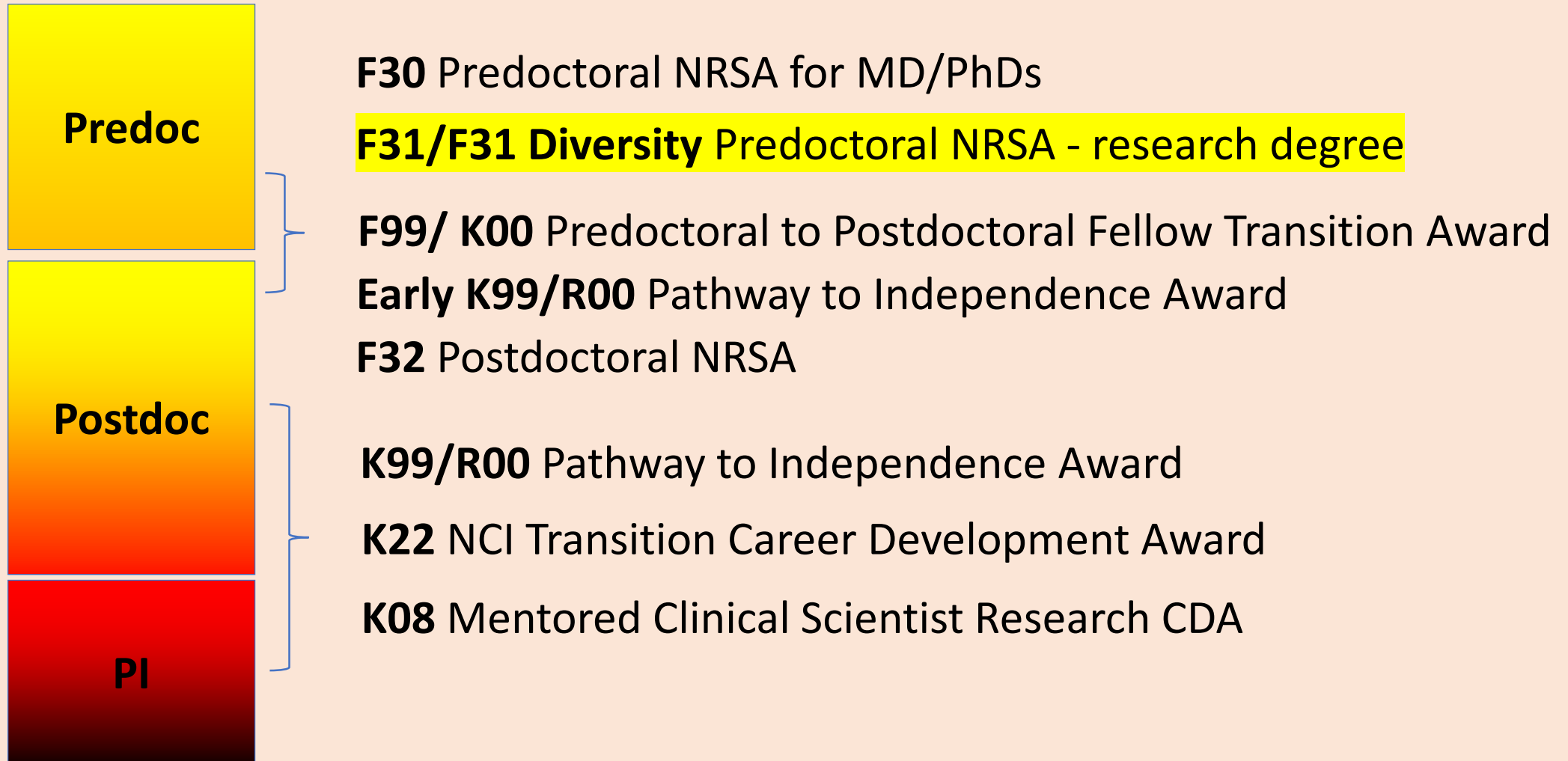
[PA-21-051](#)

***Ruth L. Kirschstein National Research Service
Award (NRSA) Individual Predoctoral Fellowship
to Promote Diversity in Health-Related Research
(F31 -Diversity) Award***

[PA-21-052](#)



Fellowship and Career Development Awards



F31/F31 Diversity Award

- **Objective:** Support promising doctoral candidates who will perform dissertation research and training for a PhD degree in a scientific health-related field relevant to the mission of the NCI during the tenure of the award.
- **Eligibility:** Applicant must be candidate for PhD degree at dissertation research stage of training.
 - US citizen, non-citizen national, or have permanent residence status
 - 40 hours of full-time effort per week
 - Sponsor and/or co-sponsor should have active (cancer-related) R01 or like funding (3 years, 150k direct costs/year)
 - Diversity applicants must meet at least one of the requirements as stated in [PA-21-052](#)
- **Research:** Must have clear cancer focus.
 - Project can be within scope of active sponsor's research, however F31 candidate to make significant intellectual contributions to the project and write the Research Training Plan.
 - No text duplication or substantial duplication of the scientific aims
 - candidate's application should propose a scientific research question or approach that is distinct from the specific aims of the sponsor's pending or active research grants.
 - NCI will not support both a fellowship award and an active or pending research grant that propose substantially the same research.



F31/F31 Diversity Budget

- Stipend \$25,836 (2021)
- NCI will pay 60% of combined amount requested for tuition and fees up to \$16,000/year
- NCI will pay up to \$4,200 annually to help defray other research training expenses, such as:
 - Health insurance (self-only or family, as applicable)
 - Research supplies
 - Equipment
 - Travel to scientific meetings

F31/F31 Diversity Review Criteria

- Applicant
- Sponsors, Collaborators, Consultants
- Research Training Plan
- Training Potential
- Institutional Environment and Commitment to Training
- Additional Review Criteria
 - Protections for Human Subjects
 - Inclusion of Women, minorities, and individuals across the Lifespan,
 - Invertebrate animals
 - Biohazards
 - resubmission

F31/F31 Diversity Fellowship Application Content

- Applicant's Background and Goals for Fellowship Training (6 pages)
 - Research Strategy (6 pages)
 - Sponsor(s) and Co-sponsor(s) Statements (6 pages)
 - Letters of Support from Collaborators, Consultants (6 pages)
 - Institutional Environment and Commitment to Training (2 pages)
 - Biosketch (5 pages)
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- Training in the Responsible Conduct of Research (1 page)
 - Authentication Plan (1 page)
 - Letters of Recommendation



F31/F31 Diversity Applicant's Background and Goals for Fellowship Training Section

- Research Experience
 - Summarize past research
 - How does it relate to this application?
- Training Goals and Objectives
 - Describe for this application
 - Identify skills, theories, approaches to be learned or enhanced
 - How will this facilitate your transition to next career stage?
- Activities Planned Under this Award
 - Individually tailored and integrated with research project
 - Research techniques learned
 - Non-research activities related to professional development
 - Timeline proposed



F31/F31 Diversity Research Strategy

- Does not include Specific Aims section (1 page)
- Significance
 - Importance of the problem or barrier to progress addressed
- Approach
 - Strategy, methodology and analyses to accomplish specific aims
 - Potential problems, alternative strategies and benchmarks
- Preliminary Data?



F31/F31 Diversity Sponsor and Co-Sponsor Statements Section

- Table of research support available
- Total previous fellows/trainees
 - How long did they train in the lab? Present position (5 examples)
 - How many present trainees in the lab?
- Training plan, environment and facilities
 - Individualized for applicant
 - Strengths and weaknesses to be addressed
 - Classes, seminars, networking and professional development opportunities
- Applicant's qualifications and potential

F31/F31 Diversity Letters of Support from Collaborators, Contributors and Consultants Section

- Letters should describe anticipated substantive role and contribution to research plan and/or research training
- Make sure everyone is on the same page!

F31/F31 Diversity Institutional Environment and Commitment to Training Section

- Document a strong, well-established research program related to the applicant's interest
- Describe opportunities for intellectual interactions with others
 - Courses, journal clubs, seminars, presentations
- Facilities and resources made available for career enhancement AND for the proposed research
- Includes Additional Educational Information if required

F31/F31 Diversity Biosketch

Changes for Jan 2022+ Submissions Biosketch Update [NOT-OD-21-073](#)

- Use correct (January 2022) format
 - No figures, tables or graphics other than those in template
 - Personal Statement
 - Why you are well-suited for fellowship
 - Factors affecting productivity?
 - Contributions to Science
 - Up to 5 (best to highlight 2 or 3 most significant)
 - Scholastic Performance
- Section B is now “Positions, Scientific appointments, and honors
 - Section D no longer contains “Research Support”
 - May include details for ongoing and completed researched projects in personal statement (Section A)
 - Format page changed to separate funding projects from in-kind contributions
 - Signature block added for Program Director/PI/Senior Key Personnel to certify accuracy of information submitted
 - Program Director/PI/Senior Key Personnel must electronically sign their respective “Other Support” forms (as PDF) prior to submission

F31/F31 Diversity

Training in the Responsible Conduct of Research Section

- Format
 - Face-to-face lectures, coursework and/or discussion group
 - Online only is not acceptable!!
- Subject Matter
- Faculty Participation
- Duration of Instruction
 - (total contacts; 8 hours minimum in person)
- Frequency of Instruction
 - Must occur at each career stage and once every 4 years

F31/F31 Diversity Letters of Recommendation

- 3-5 letters from individuals not directly involved in the application
 - Can be from any stage in applicant's career
- Sent directly into eRA Commons by the writer
- Well established investigator
- Should know the candidate well
- Should provide meaningful evaluation of the applicant

F31/F31 Diversity Common mistakes/errors

- Project lacks strong overall impact
- Aims overlap with mentor's research
- Not innovative
- Lack of expertise
- Too focused - or too broad/ ambitious
- Grantsmanship errors
- Too few publications as first author

F31/F31 Diversity Application Receipt Dates and Review Schedule

Receipt Cycle	Receipt Date: New, Resubmission	Initial Review Date	Council Review Date	Earliest Possible Start Date*
1	April 8	June/July	September/October	December
2	August 8	October/November	January/February	April
3	December 8	February/March	May/June	July

F31 Contacts

- Michael Schmidt, PhD; mschmidt@mail.nih.gov
- Yansong Bian, PhD, yansong.bian@nih.gov
- Hana Odeh, PhD, Hana.odeh@nih.gov
- Corinne Boulanger-Espeut PhD. boulangc@mail.nih.gov

F31 Diversity

- Anthony DiBello, PhD; Anthony.debello@nih.gov Center to Reduce Cancer Health Disparities (CRCHD)

The Pathway to Independence Award (K99/R00)
[PA-20-187](#)/[PA-20-188](#)/**[PA-20-189](#)******

***Pilot Program: The early K99/R00 - The NCI
Pathway to Independence Award for Outstanding
Early-Stage Postdoctoral Researchers***

[RFA-CA-20-055](#)/[RFA-CA-20-056](#)/**[RFA-CA-20-057](#)******

Fellowship and Career Development Awards

Predoc

F30 Predoctoral NRSA for MD/PhDs

F31 Predoctoral NRSA - research degree

F99/ K00 Predoctoral to Postdoctoral Fellow Transition Award

Early K99/R00 Pathway to Independence Award

F32 Postdoctoral NRSA

Postdoc

K99/R00 Pathway to Independence Award

K22 NCI Transition Career Development Award

K08 Mentored Clinical Scientist Research CDA

PI

K99/R00 and Early K99/R00 Award Transition

- **Mentored Phase (K99) (1 - 2 years):**

Supports postdoctoral research training & career development
Salary: up to \$100,000/year; Research Support: \$30,000/year



Tenure-track Assistant Professor Position (or Equivalent)



- **Independent Scientist Phase (R00) (up to 3 years):**

Supports independent research project. Allowable Costs: Salary, fringe benefits, research support: \$249K/ year (total cost)

(K99/R00) Award

- **Objective:** To help outstanding postdoctoral researchers complete needed, mentored career development and transition in a timely manner to independent, tenure-track or equivalent faculty positions.
- **Eligibility:**
 - U.S. citizens and non-U.S. citizens (@domestic institutions)
 - Less than **4 years** of postdoctoral research training
 - MDs: Time spent in clinical training is not counted towards K99/R00 eligibility
 - Cannot have held an independent faculty or tenure-track position
- **Research:** All areas of cancer research

Early (K99/R00) Award

- **Rationale:** To help outstanding postdoctoral researchers often from **data, population** and **behavioral** sciences who get tenure-track positions after 1-2 years of postdoctoral training.
- They are, therefore, disadvantaged compared with peers who had K transition award
 - No protected time from teaching
 - No assurance of a competitive startup package
 - Takes longer on average to get first R01 (~6 yrs) than “regular K99/R00” awardees (~3 yrs)
- **Eligibility:**
 - U.S. citizens and non-U.S. citizens (@domestic institutions)
 - Less than **2 years** of postdoctoral research training
 - MDs: Time spent in clinical training is not counted towards K99/R00 eligibility
 - Candidate must be nominated by an institution. An Institution may nominate up to 3 candidates, one each in data science, cancer control science, and other sciences.
 - No resubmission but may apply the next year.
- **Research:** All areas of cancer research

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:** all scientific fields supported by the NCI that are not included in (A) or (B). Applicants proposing research in (C) "Other Sciences" 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.

Early K99/R00 – Distinct Features affecting review of the applications

- Publications from postdoctoral training are not required
- Preliminary data are not required. Reviewers evaluate creativity and potential of research to launch and sustain a career rather than extensive preliminary data
- Applications reviewed by an “early K99” **Special Emphasis Panel** – they don’t compete with “regular K99” applications
- **One receipt per year**, no resubmissions allowed
- ***This is a pilot program – up to 16 awards/year***

The Early K99 Special Instructions - Nomination Letter

- **Institutional nomination letter is required.** Applications without nomination letters will be withdrawn
- Must be written and signed by the head of the candidate's department or program
- Submitted under "Other Attachments"
- The letter is limited to 2 pages
- The letter must include the following information:
 - Must identify one of the three scientific areas: (A) Data Science, (B) Cancer Control Science or (C) Other Sciences
 - Must affirm that the candidate is the institution's sole nominee in the specified scientific area for the specified application due date
 - Should describe the institutional commitment to supporting the candidate's search for a tenure-track or equivalent position
 - Should describe the main factors that identify the nominee as likely to obtain a tenure-track or equivalent research position at an early career stage

K Application sections and page limits

- Candidate's Background
 - Career Goals and Objectives
 - Plan for Career Development
 - Research Strategy
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- (12 pages)
- Specific Aims
- (1page)
- Training in Responsible Conduct of Research
- (1 page)
- Plans and Statements of Mentor and Co-mentor(s)
- (6 pages)
- Letters of Support
- (6 pages)
- Environment & Institutional Commitment
- (1 page each)
- Biosketch
- (5 pages)

K Application Candidate's Background/ Biosketch

Changes for Jan 2022+ Submissions Biosketch Update [NOT-OD-21-073](#)

- Convince reviewers that you have:
 - appropriate research qualifications (training/ experience)
 - potential for independence (collaborations, teaching, mentoring)
 - potential to make important contributions to the field
 - Tell your story without “overselling”. Make sure all claims are supported in application
- Section B is now “Positions, Scientific appointments, and honors
- Section D has been removed.
- May include details for ongoing and completed researched projects in personal statement (Section A)
- Format page changed to separate funding projects from in-kind contributions
- Signature block added for Program Director/PI/Senior Key Personnel to certify accuracy of information submitted
- Program Director/PI/Senior Key Personnel must electronically sign their respective “Other Support” forms (as PDF) prior to submission

K Application Career Goals and Objectives

- long-term research and career objectives
- logical progression from the prior research and training experiences to the K-award
- justify the need for additional training
- plan how to differentiate research program from that of your mentor and advance to research independence
- Overall relevance of project to cancer research
- Strong letters of support that reinforce your goals

K Application Career Development Plan

- Research training (skills)
- Professional development (lab management, ...)
- Impact of proposed training (independence)
- Be specific: Include workshops, conferences, ...
- Evaluation plan (timeline, milestones)
- Recommendation: identify advisory committee (benchmarks)

K Application Research Strategy

- **Innovative**

- Hypothesis driven
- Mechanistic

- **Significance**

- Strong rationale for importance of project to field of cancer research

- **Research Plan**

- Rationale and preliminary data
- Robust, reproducible, and unbiased approach (data analysis, statistical procedures)
- Address biological variables (sex, age)
- Ensure aims are not interdependent
- Ensure project not overly ambitious
- Address potential pitfalls and alternative approaches

K Application Plans and Statements of Mentor and Co-mentor(s)

- Mentor had the necessary expertise
- Mentor(s): Strong mentoring and funding track record, highly qualified
- Mentoring/ training plan that addresses the candidate's needs
- K99/R00: transitioning plan
- **Clear statement that the project belongs to the candidate and they are able to take it with them when they transition to R00.**

What Makes a Good K Application?

- Innovative ideas and solid, well-considered rationale
- Strong significance to advancing field of cancer research
- Proposing to test hypotheses (rather than to prove them)
- Demonstration of feasibility, no interdependent aims
- Publications (K99/R00), awards, prior training
- Strong Mentors and Collaborators
- Meaningful Mentoring Plan and clear indication of project ownership
- Strong institutional support and minimum 75% effort.

K Application Common Mistakes/ Issues

- Aims underdeveloped - not thought through
- Aims interdependent - one fails the project fails
- Lack of feasibility - lack of preliminary data
- Outdated approach - not innovative
- Lack of expertise
- Too focused - or too broad/ ambitious
- Grantsmanship errors
- Too few publications as first author (K99/R00)
- Publications not related to the application (K99/R00)

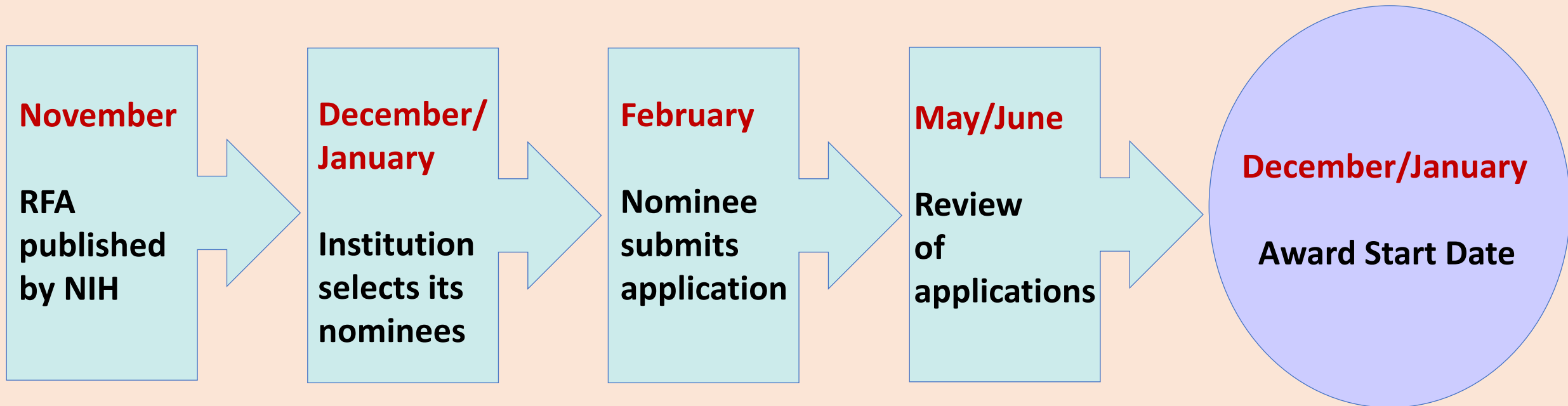
K Application Take Home Messages

- Don't lose sight of the big picture
(Illustrate why you love the science you do and your goal to become an independent scientist)
- Build your team wisely - mentor(s) and collaborator(s)
- Plan ahead
- Don't be afraid to ask questions or ask for help
- Publish

K99/R00 Application Dates and Review Cycle

Receipt Cycle	Receipt Date: New Application	Receipt Date: Resubmission	Initial Review	Council Review	Earliest Possible Start Date*
1	February 12	March 12	June/July	September/Oc tober	December
2	June 12	July 12	October/Nove mber	January/Febru ary	April
3	October 12	November 12	February/Mar ch	May/June	July

The Early K99/R00 Timeline



K99/R00 Contacts

- Michael Schmidt, PhD; mschmidt@mail.nih.gov
- Sonia Jakowlew, PhD; jakowlews@bprb.nci.nih.gov
- Corinne Boulanger-Espeut, PhD; boulangc@mail.nih.gov

Early K99/R00 Contact

- Dr. Sergey Radaev, PhD; sradaev@mail.nih.gov



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