

# Breakout Group 2

*How to enhance the NCI Cancer Biology  
Training Reviews*

# Major issues and topics discussed

- Primarily discussed required/desirable components of successful T32s
- Ratio of predocs to postdocs (1:3) desired by NCI was seen as a key issue going forward
  - Breakout group members were very concerned by the 1:3 ratio
  - Where will we find all these postdocs if student training is reduced?
  - Clearly we need to draw from other fields to reach these numbers
- Issue was raised about need to track trainees to overcome this ratio
  - How to incorporate information on cancer-relatedness of trainee careers into standard tables?
  - Source of information? Extra burden on Program directors.
- Issues and objectives raised by Translational Research Working Group need to be integrated with goals of T32s
  - Role of industry support in translational research needs to be clarified
- Issues related to support of foreign students and postdocs
  - Viewed as mostly insurmountable absent change of policy from congress and/or NIH leadership.

# Important goals from NCI perspective

- Desired outcome - T32 trainees need to end up in biomedical research careers, preferably cancer-related
  - This is a driving force in the 1:3 ratio since postdocs are considered more likely to continue in cancer biology
  - How can we not only ensure this outcome but track our trainees to convince NCI that a greater number of predocs are advantageous?
- Goal of NCI is to increase the number of biomedical scientists in Cancer Research by supporting training programs
  - Industry and academia are ok
  - Writer, journal editor, school teachers are not considered to be favorable outcomes
- NIH wants to develop mechanisms to retain experienced program directors
  - Possible partial salary compensation for T32 PIs is an issue that is currently being discussed at the NIH level

# Programmatic issues

- Focus on cancer and NEED for the program must be made very clear
  - Unique cancer focus to training program (R25 needs to be distinct from T32 program)
  - Program should be unique from other institutional T32s
  - address overlap with other training programs, also cohesiveness of training program
- What benefits does the program provide beyond those in standard departmental training programs?
  - What is value added?
- MDs - have special consideration for postdoctoral clinical career plans
  - Consider and discuss their career trajectories
- Should not support first year predoctoral trainees - high drop out rates
- 25% predoctoral number, 75% postdoctoral is target determined by NCI in consultation with external advisory board
  - Not hard and fast rule but a goal
  - Deviations need to be well-justified and explained.

# Programmatic issues

- Pre-doctoral and postdoctoral training programs must be distinct and the differences described
- Periodic evaluation by external (to department or institution) advisory committee is a very important strength of successful programs
- Need a strong, independent executive committee
  - What are criteria for selection to executive committee?
    - If program has multiple sites, each site should be represented on executive committee
  - What are the roles of executive committee members?
  - A key role of executive committee is to ensure that:
    - Program faculty are appropriate and monitor this as funding and research interests change
    - Trainees are appropriate for program - monitor faculty in this regard
- How does executive committee report back to and help PI?
- Periodic retreat is a good idea - who will pay?
  - Suggestion for NCI to require institutional cost sharing to defray retreat costs since it is so valuable for training

# Program Director

- Should be a PI in own right with active research programs
- Must have active funding in cancer area - work must be very clearly cancer-related
  - Funding must be “peer-reviewed” as defined by NCI
  - Federal grants and many foundations (but not all) qualify
- Leadership experience is important
- Be careful with 500K cap - requests that exceed this amount must be pre-approved

# Training faculty

- Diverse, well-funded, experienced mentors with research programs in cancer.
  - 50% of faculty should have cancer grants
  - Rest must have reasonably relevant research to cancer (NCI is lenient in this area)
  - % cancer vs non-cancer? let reviewers decide what is enough cancer focus.
    - NCI is somewhat lenient with % but should not go far below 50%
- All faculty in program must have research support
  - Peer-reviewed funding as defined by NCI is most desirable
  - Question raised about role of industry support, particularly for those in clinical pharmacology or trials
    - Type of support is key to determine this
    - Number should be small relative to total training faculty
- Trainees must be distributed - one or two mentors can't have majority of trainees

# Training faculty

- Consistent and well-defined evaluative process for selection and replacement of mentors is very important
  - Director must be willing to prune if mentors lose funding or move away from cancer-related research
- Experienced mentors are required, but not all senior
  - Training can be multi-tiered
  - State how junior faculty will be helped and mentored
  - Junior faculty can be adjunct and act as co-mentors with more experienced mentor
- Faculty number should be right size for number of trainees
  - 4:1 for predocs is reasonable (~20 faculty for a 6 slot grant is ok)
  - Trainees must have sufficient choice of mentor
- If program has distinct tracks, then it may be useful to have track leaders, or eventually co-investigators

# Trainees

- Need a large and well-qualified applicant pool
  - Applicant pool should be much larger than number of slots
  - Pool size is key for justifying additional slots
  - Some discussion on how to describe and document applicant pool, particularly for postdocs
    - Since it is good to include a large pool, it may be more effective to have the program advertise for postdocs and direct applicants to program faculty they select
    - This makes it easier to keep track of pool size and quality.
  - Diversity may broaden to include socio-economic diversity
- Well articulated criteria for selection and retention in program
  - Measurables are important (GPA, GRE, publications, potential)
  - Document retention of students in cancer biology
- Demonstrate good recruitment strategies including diversity
  - Program specific plan is best
- Keep for two years

# Trainees

- Well-described and conceived didactic program for pre-docs and also for postdocs
  - Classes, seminars, workshops
- Must justify number of training positions requested
  - Size of pool is very important to justify number
  - Number of training faculty too
- Trainees should be productive and moving up along their career trajectories
  - Academia, industry, etc.
  - Present a specific plan to evaluate trainee progress
- It probably makes a lot of sense to focus on documenting outcomes and composition of applicant pool
  - Postdocs are a particular challenge considering how they are recruited to individual labs

# Training resources and Environment

- Fully document shared facilities, equipment and departmental interactions available to trainees
- Discuss access to scientific educational and clinical resources
- Discuss physical access to far flung resources
  - Particularly important for multi-campus centers
  - Document plans to share resources
- Discuss how it will be assured that students have access to all resources

# Diversity recruitment Plan

- It is important to document minority recruitment and retention success
- NCI wants to see a detailed recruitment plan - can't piggy back on existing program
  - discussed this further and it appears that:
  - Recruitment must be done by the program at the postdoctoral level
  - can be through institutional program in the case of umbrella programs for predocs
- although there is no requirement to recruit minorities, we must show progress in recruiting minorities
  - There is a program (Center to Reduce Cancer Health Disparities) that may allow recruiting additional trainees into program without losing any slots
  - Contact is H. Nelson Aguila Aguilah@mail.nih.gov Separate from score, sample issues on NIGMS web site

# Plans for Training in the Responsible Conduct of Research

- Grant must include plans for this training - it is mandatory
- Can be periodic as needed

# Application preparation - pitfalls

- Poor response to prior critique is often problematic
- Must update all tables, biosketches, etc
- Tables should be clear and easy to read
  - Provide requested information
  - Reviewers make heavy use of tables in evaluating grants, clear, provide requested information
  - NIGMS website has sample tables for T32s
- Electronic submission will be in the near future.

# Key review criteria in addition to above

- New grants
  - Program should show strong promise
    - excitement factor is important
  - Must have a capable director
  - Need excellent faculty with only a few junior faculty
    - Junior faculty should be mentored to enhance training experience
  - Absolutely require a quality applicant pool of sufficient size
    - Size of pool determines number of justifiable training slots
    - strong measurables (GPA, GREs, publications, etc)

# Key review criteria in addition to above

- Renewals of existing grants
  - Show successful outcomes!
    - What are the results of the training?
    - Where are students?
    - Strong promise for program – excitement factor is important
  - Show review committee that future will be as successful as past
    - Tables are important source of information for reviewers – very important to do them correctly
  - Note and explain any faculty turnover
    - Can make this into a positive if those who have lost funding or changed focus are removed promptly
    - But number should not be too high – need stability
  - If translational research was proposed, outcomes need to be documented
    - Claiming translational research obligates you to complete the clinical part as well
  - Must show progress in diversity recruitment
  - Demonstrate size and quality of applicant pool

Other points for discussion?