T32 Best Practices:

Notes, Tips and Guidance from the PSOM T32 Workshop Series

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Session #9: November 17, 2022

Mentorship

- Expectations are increasing for high-quality mentorship and formal training for mentorship for faculty (CIMER) - may be helpful to offer training sessions
    - BGS, MaC, and MSTP offered two trainings in November and will offer more in the spring
- Training should be looked at as a starting point; the student-mentor relationship is just one aspect of the trainees' career
- Mentorship awards highlight that we value mentorship
- Suggest the creation of boilerplate template mentorship text/language that can be used as a starting point – goal is to support grant applications without being perfunctory: BGS will provide a draft
- Integral in mentorship relationships to align expectations (problems come from mismatched expectations) and communication
    - Students should think about being as explicit as possible about what they're trying to get out of the mentorship relationship
- Some groups, including BGS, are requiring signed a compact between mentors and mentees
    - Meant to make students aware of what good mentorship looks like and how to seek it out
    - Compact is being finalized and will be posted online in the future.
- Also training trainees to be mentors (depends how explicitly it is stated in the training grant)
    - "These are the good aspects of a good mentor-mentee relationship" - helps trainees learn to manage teams
- Mentoring committees for junior faculty can vary across departments; when developing grant, recommendation to describe the general structure, comment on the multi-pronged approach, and show how the approach is tailored to your grant
- Suggestion for small workshops and case studies, face to face – best way to go about mentorship training
- In orientation training, BGS trainees complete case study-based training for mentorship, DEI, and scientific rigor/reproducibility – these are the foundations of a strong training program
- Is there a way to use IDPs to bring in mentoring contracts? Could IDP serve as a mentoring contract?
    - Example of how each training grant can adjust to fit a specific grant/program
    - "Here's something that's part of the institutional structure. We have modified it to fit our needs for our particular trainees and needs."
    - HOWEVER, warning from reviewers to try to not combine IDP and mentorship document (reviewers have made it clear that these documents cannot be merged – they serve different purposes)
- Faculty need to be able to show that they've done mentorship and DEI training; students need to be able to see this information when choosing a mentor/advisor
- The NIH landscape is rapidly evolving (as well as student perspectives) toward mentorship and DEI

Applications and Requirements

- Discussion of challenges when training grants overlap for faculty (a negative for reviewers); BGS will help generate tables to recognize overlap and ensure the right people are on the right grants
- Reminder to review all biosketches, to ensure that the personal statements are tailored for the grant and say something about commitment to mentoring explicitly
- Postdocs looking for potential T32 grant opportunities can refer to existing T32 grants table available on T32 best practices website
    - Important to remember that many postdocs will not qualify for training grants

    - There are general eligibility requirements so any postdocs appointed to a T32 must be U.S. Citizens or permanent residents.
    - T32 eligibility may also depend on the type of post-doc the training grant is focused on (as mentioned below, some T32s are primarily for clinical fellows) and commitment to academic research career.
- Discussion of challenges in the table provided in the T32 best practices website
    - Number of slots is hard to keep current
    - Table doesn't distinguish between PhD postdoc slots and clinical fellows
        - Some are theoretically available to PhDs but are never awarded to PhDs (which is important to know when you're trying to determine overlap)
        - There were fewer postdoc slots than what it looks like at first glance

NIH Update – Gabby Ostapovich, Associate Director for T32 Proposal Development

New T32 Requirements – Click here for slides

Forms H Training Instructions released in October: https://grants.nih.gov/grants/how-to-apply-application-guide/forms-h/training-forms-h.pdf

- For due dates on or after January 25, 2023 per NOT-OD-22-195; clarified instructions for renewal/resubmission applications going from single PI to MPI (provide a rationale for change in Program Plan *AND* MPI Plan component)

Change in NIDDK Interest areas: per NOT-DK-22-012 (02/04/22), applications submitted in response to the parent T32 FOA (PA-20-142) must support trainees performing NIDDK mission-related nutrition research: **Diabetes** (Type 1 and Type 2 Diabetes, Metabolic Disorders, and Endocrine Disorders), **Digestive Diseases** (Gastrointestinal Diseases, Liver and Pancreatic Diseases, Obesity, Nutrition, and related diseases), and **Kidney Diseases** (Kidney Diseases, Urologic Diseases, and Hematologic Diseases).

NIH Policy for Data Management and Sharing, does not apply to Training Grants (or Fellowship [F] applications): https://grants.nih.gov/grants/guide/notice-files/NOT-OD-21-013.html

General Changes in Expectations from Previous T32 FOA:

- **Recruitment plan to enhance diversity** should include outreach strategies specific to the program and how they might coordinate with institutional trainee recruitment efforts. Program faculty are expected to be actively involved in recruitment efforts.
- **Program administration** should be clearly explained and defined. Be sure to indicate PI's percent effort in the program to demonstrate there is sufficient effort for success. Outline administrative structure and plans to oversee and monitor the program.
- **Program faculty**: Should be diverse and at a variety of career stages. Explain how faculty are trained to ensure the use of training and mentoring practices that promote the development of trainees from all backgrounds and how faculty will provide supportive mentoring to trainees.
- **Program evaluation**: Describe how the program evaluation will assess the extent to which trainees find the training program to be inclusive and supportive of their development. Outline procedures for responding to evaluation findings.
- **Renewal applications** should highlight how the program has evolved in response to changes in relevant scientific and technical knowledge.

Parent T32: **PA-20-142**

Institutional Letter of Support: Applications must include a signed letter on institutional letterhead from a President, Provost, Dean or key institutional leader that describes the activities and resources provided by the institution that will ensure the success of the planned training program and its trainees (not to exceed 10 pages).

- The 10-page limit is inclusive of all participating institutions/schools. For example, if you are submitting a proposal with Penn and CHOP, all information must be contained in those 10 pages and co-signed by both institutions. **Gabby can provide template letter that can be customized to application.**

Plan for Instruction in Methods for Enhancing Reproducibility ("SRR Plan", 3 pg limit): Include a description of how the program will provide training in scientific reasoning, rigorous research design, relevant experimental methods, consideration of relevant biological variables such as sex, authentication of key biological and/or chemical resources, quantitative approaches, and data analysis and interpretation, as appropriate to the field of study and the level and prior preparation of the trainees. **Gabby can provide boilerplate text from BGS for this component.**

NIGMS Pre-doc T32: PAR-20-213

- Existing programs need to submit as new: no Progress Report and no Table 7. Table 8A, will only include part III (recent grads).
- In addition to SRR Plan described above- need **Outcomes Data Collection and Storage Plan (2 pg limit):** Track the outcomes for all supported trainees for a minimum of 15 years beyond the trainee's participation in the program. Programs are encouraged to make the aggregate outcome data available on the institution's website. If the applicant intends to make the data available, describe how the aggregate data will be de-identified before public posting. The applicant must include a strategy to ensure the secure storage and preservation of program data and outcomes. Describe how the data will be centralized, safeguarded, and retrievable during leadership changes.
- **Dissemination Plan (1 pg limit)**: provide a specific plan to publish or present nationally any findings or materials developed under the auspices of the program. Examples of dissemination may include data or materials from successful training or mentoring interventions via web postings, presentations at scientific meetings, and/or workshops.
- **New table required for admissions data (Table A instead of Table 6A)**
    - **Gabby can create this table for BGS programs and assist with requesting data/creating the table for programs outside of PSOM (SAS, SEAS, etc) and can also generate initial versions of Tables 1, 2, 3, 4 and 8A, Part III.**
- **Appendix requirements**:
    - RCR syllabi (2 pgs); **BGS RCR materials are available online:** https://www.med.upenn.edu/bgs-rcr-exdes/
    - Required Training Activities (2 pg max per activity)- expected to provide brief description of required courses, workshops and training activities (streamlined syllabi with topics, timelines, etc.);
    - Trainee Selection and Appointment Procedures (3 pgs): outline criteria for trainee selection and process for appointment. May include appointment protocols and/or blank applications.
- **Allowable appendix materials**:
    - Elective Activities (2 pgs)- summary content from elective courses and training activities (mentor training materials, outline of professional development workshops, career exploration opportunities, etc.);
    - Conflict Resolution Protocols (3 pgs): may include detailed protocols for addressing problems with trainee and faculty matches, removal of faculty from the training program with unacceptable training/mentoring skills and for conflict resolutions for multi PD(s)/PI(s) and mentor/mentee relationships.
    - Evaluation and Assessment Instruments: blank surveys, rubrics, forms used to (a) document/monitor trainee progress and (b) determine whether the training and research environment is effective, inclusive, safe and supportive.

For general T32 resources, please visit Training Grants and Fellowships website:
https://www.med.upenn.edu/training-grants-fellowships/

- **T32 Proposal Development Guide** (Pennkey protected, contact Gabby if you cannot access): https://www.med.upenn.edu/training-grants-fellowships/assets/user-content/secure/t32-preparation-guide-11.07.22.pdf
- **T32 Proposal/Data Table FAQ**: https://www.med.upenn.edu/training-grants-fellowships/t32-proposal-faq.html
- Contact Gabby Ostapovich with trainer list for your proposal to generate initial versions of Data Tables 1, 2, 3, 4, and Table 8A, Part II & III.
- Gabby can also provide institutional letter of support template that can be adjusted for your application.

BPP Update – click here for slides

Preparation of T32 Training Grants - Maja Bucan, Associate Dean for Postdoctoral Research Training, Director of Biomedical Postdoctoral Programs

- See slides
- NIH expects that PIs participate in training. BPP looking to recruit faculty for RCR training for postdocs
- AAMC compact: https://www.aamc.org/what-we-do/mission-areas/medical-research/grad-compact
- Neuroscience training resource – through the Center for Neuroscience and Society, funded by a pilot grant from the DANA foundation. This resource is a work in process.

Session #8: May 3, 2021

Applicant Pool Management

Biomedical Postdoc Program (BPP) Update

(presented by Dr. Maja Bucan – please click here for slides)

- PennView Postdoctoral Diversity Initiative – Held virtually 6/24-25, 2021
  - Goal is to match trainees with mentors
  - Opportunity to spread the word to Biomedical doctoral candidates
  - Application deadline 5/15/21
  - Planning a mid-June "meet and greet" call
- BPP needs faculty for several RCR sessions (June, July, August, December)

Pre-doc Strategies

- T32s lift all boats in terms of training, but can be challenging - must be unique offerings
- Important to balance applicants based on:
  - Diversity and gender equity
  - Mentees and mentors
    - Mentors with a training history who have been successful in the past are more likely to be assigned students (improves metrics for renewals)
    - Supporting junior faculty to develop training records for educational database
- Different challenges depending on the discipline/grant - some grants have natural, built-in applicant pool (for example, attached to a specific graduate group), while others do not
- Pharmacology T32 has a relatively straightforward applicant process, due to trainee course requirements as part of specific core curriculum
  - There are some selections for general interest, which makes it easier for students to move into detailed T32s as a result of their broad training
- Recruitment strategies:
  - Past and existing students from the program talking to potential applicants about their experience
  - Group bonding/enrichment activities
  - Marketing materials (brochure, stump speech)
  - Undergraduate DEI SB3C McKay Conference Award - 5 awards - pay registration fee for conference + virtual "day in the life" of a student in the program at Penn
  - Volunteer to work admission program and identify potential applicants
  - Expand scope of applicant pool to different schools (for example, Bioengineering)
- BGS released combined call for 3 separate training grants, allowing the group to coordinate who applied for what grant; others might consider similar approaches. More information can be found here.
- During BGS orientation, it may be useful to introduce students to specialty T32 programs (like HIV)
  - Help educate about the advantages and opportunities of being on a T32
  - Groups should considering partnering with BGS to advertise other programs
- Specialty T32s are competing to get students; PIs are encouraged to think creatively (ex. HIV T32 recruiting from SEAS)

Post-doc Strategies

- Many post-docs apply to mentors, rather than to specific training grants. Faculty stress the importance of keeping faculty aware of T32s
  - If a mentor is spending money to recruit a candidate, they could make an excellent addition to a T32, if appropriate

- Recruitment strategies:
    - "Trainee day" - trainees discuss the program, various sessions throughout the day before the main meeting of national conference
        - Good way to engage on an annual basis
    - Residential multi-day course specialty - encourage trainees to attend
    - Webinar series that department developed in partnership with external minority-focused student group
        - Hoping to expose more potential URM applicants to the field and to the program
    - Accelerated application process for URM applicants; bring URM applicants to campus to visit
    - PIs can incentivize recruitment of URMs, use of supplemental slots to support participation from URM applicants
    - "Single application" - format and timing designed to make it easy for students to apply and plan
- PIs can identify potential applicants by joining your program's admissions program (ex. Pediatric GI defines pool as those applying to their fellowship each year)
- Special challenges exist for PhD applicants, as above they apply to mentors, not grants
- For MDs, many T32s are attached to a clinical training program
- MDs are challenging
    - If they haven't done research before, encourage them to get involved in one of the master's program (for example, translational research, clinical epi)
- MD-PhDs are very successful as post-docs
- Challenge that MD-PhD students at Penn are encouraged to train elsewhere (Penn has the largest MD-PhD program in the US) - is this putting students/Penn at a competitive disadvantage?
    - If MD-PhD students were encouraged to stay at Penn, it could be a great opportunity to keep great people and filter them onto different training grants
        - Could bring faculty from different specialties to speak to MD-PhD classes to encourage interaction across research tracks
    - Drawback: Encouraging students to stay at Penn could hurt diversity efforts
- The hardest part of the "post-doc pool" is defining the applicant pool
    - Challenge is in defining the denominator
    - Ex: another institution counted the denominator via an institutionally run website where postdoc applicants for the broader institution were encouraged to upload their CV. "Sorting" was then done by the institution into the different fields relevant to all the T32s.
        - Challenging to ask people to self-select
        - T32 eligible is a huge filter
        - Sorting challenging and labor-intensive
    - PIs can self-report recruitment pools, which allows for flexibility
    - Easier to define fellowship pool when it's tied to residency program
        - More difficult for PhDs to define pool because there is no natural application process (applicants apply to mentors)
    - Group showed interest in formulating a more robust process for collecting post-doc information centrally.

Session #7: January 12, 2021

Program Evaluation

Evaluating Success

- PIs encouraged to revise the way we think about program evaluation, as priorities and practices are changing
    - Demonstrating publications is the standard, as well as time-to-degree metrics
    - The "old" metric of how many students go into academia is no longer as emphasized, it's more important now that students stay in a science field
- Is program succeeding? How is success defined?
    - Success must be specific to your program, to show value in addition to what students normally learn in grad school. Be as specific as is practical.
    - Renewals include student publication
    - Are students succeeding, is program training them appropriately?
    - Ultimately, a program is successful if it trains students in the area it sets out to tackle and the students are "successful" (however that is defined)
    - Resource: BGS Career Development Web Site
- Important to get student feedback, tailor program to meet their needs
    - Suggestion to meet with students at end of year for feedback
    - Suggestion to administer regular student survey (IRB requirements should be considered)
    - Recommendation to increase diversity/social justice/STEM outreach opportunities

Evaluation Investigation

- Dr. Skip Brass was awarded a supplement from NIGMS re: program evaluation for T32 renewals
    - Identifying goals, Defining success, Collecting data, Assessing the impact of interventions and Feeding back the results to improve the program
- Defining success for program and trainees (rubrics)
    - Design student survey in a way that speaks to items on the application; can have students answer questions in a way that easily matches/feeds into relevant tables.
    - Measuring success has to be specific to the program and demonstrate a "value add"
        - Want to be specific as is practical (as specific as you can be and still have success)
- Collecting data
    - NIH wants more granular outcomes data in various work settings (both Table 8 and text)
        - For example: If working in academia, what percentage of the person's time is spent working as a clinician vs. doing science?
    - Long-term outcomes data collection can be challenging - any enhancement of database integration a plus
    - Collecting qualitative as well as quantitative metrics
- Assessing the impact of interventions
    - Not the same as "course reviews"
    - Showing whether a particular activity has or has not met its goals and feeding back results to improve activity
    - Use of Likert scales to talk about activity impact

Assessing Goals

- Recommendations for illustrating T32 program goals
    - Does the program identify/clearly define program goals?
    - Define success for program trainees
    - Emphasis on setting goals, showing how you've assessed your arrival at those goals, and making interventions along the way to adjust based on your assessments
- Collect data – NIH likes to see a lot of data, but has redefined process in terms of tables/Xtract
    - It is advised to start early to allow time for responses and to become comfortable with the new process
    - NIH wants to know specific details: if a former trainee is academia, what are they doing? How much time is spent doing research vs spent in a clinical capacity?
- Assessing the impact of intervention – should run assessments allowing impact of interventions to be cleanly measured
    - This is different than course reviews
    - Must show that a particular activity has (or has not) met its goals
    - Funders want to see adjustments/improvements via interventions

Maximizing Resources

- There can be a difference between what NIH/Program Officers want and what study sections find desirable; we talk to our program officers a lot, but really matters what study section thinks
- Note that T32s must go in as new grants at NIGMS. Most tend to follow what NIGMS does, so this may be more widespread in the future
- Community Recommendations
    - It may be helpful for community members to share process/tables for feedback/guidance
    - Table templates/ideas would be beneficial, the more shared items the better
- Important to talk amongst those who have been reviewers. Idea include:
    - Holding best practices meeting with Penn reviewers
    - Conducting mock study sections
- PSOM Resources
    - Tables must be perfect; Aislinn Wallace (BGS) noted as expert
    - Some tables are generic across campus, we should have access to this
    - Do we have T32 templates available now for things like program evaluation and best practices? Per Aislinn Wallace (BGS), nothing that specific is available, her office has focused more on recruitment and retention of diversity recruitment, RCR, SRR; will explore this as an option
    - BGS makes it easy to extract information about students
    - The School has developed standard language for S10 submissions, and is developing a similar resource or Ps and Us; will discuss resources for T32s.
- See more on program evaluation work by Dr. Skip Brass (Please click here for slides)

Updates to Application

- PIs found new forms painful during renewal process; Aislinn Wallace (BGS) very helpful
- Renewal process has changed, as have the expectations (which are not always clearly explained)
- Recommendation to reach out to others with renewal experience to get a sense of what happens behind the scenes

- There is no formal training in this process; NIH plans to come out with normalized tools, but has not given a time frame
- There is a much greater emphasis on program evaluation, though a clear rubric has not been released
- One significant change for many institutes is an updated letter of support – instead of individual letters of support from different entities, the FOA requires a single letter, co-signed by entities across the university/CHOP. This can present a much more significant burden, and should be started early in the process. Check the FOA for more details.

Biomedical Postdoc Program (BPP) Update

(presented by Dr. Maja Bucan – please click here for slides)

- Recommendation to inform BPP office that you plan to submit a T32 as soon as possible
- BPP can provide a variety of contributions to your T32 application
    - BPP program description
    - Numbers, demographics, and funding reports for various postdocs
    - Postdoc outcome information
    - RCR training document
    - Diversity and Inclusion initiative information
    - Letter of support

Session #6: April 16, 2020

T32 management during the COVID period

Regulatory considerations

- NIH issued policy stating that that trainees can continue to be paid on NIH grants (per individual university policies).
    - The group discussed creative strategies to document productivity (specific to each lab's workflow). One example: LabArchives software can be used to clearly document mentorship/individual meetings.
- Office of Regulatory Affairs sent formal notes to NIH to document that trainees are still working/busy.
- In general, T32s are conducting meetings and business as usual as much as possible through BlueJeans.
- Office of Research Services contacted NIH Program Officers to inform them that Penn's training grant policy allows trainees to continue being paid.
- NIH may consider trainees working remotely from abroad to be foreign components.
    - If any trainees are working from home, outside of the US, important to let Marianne Achenbach's ORSS office know.

- Those unable to perform their usual work can use this time to cross-train in other areas (ex. wet lab staff becoming familiar with dry lab work/data management).
    - One idea is to engage post- and pre-docs to share their experiences as clinicians. Some have used these experiences to create COVID-related tools and resources.

Hiring

- Appointment/reappointment of postdocs:
    - External funding - Postdoc appointments can move forward, if they meet established criteria. T32s are considered external funding.
    - Internal funding may need additional approval, but will still be considered if it can be justified.
- PIs are urged to be very careful about funding streams (ex. mentor funding). Completely external funding is the most appropriate approach.
- PIs are encouraged to carefully consider adding lab members, unless limited to specific external grant funded role.

Managing Lab & Trainees Remotely: Focus on Wellness

- Recommendation to keep regular lab meetings, grant writing groups, weekly happy hours, etc.
    - Keep regular programs as much as possible
    - *Compliance note:* Food/drink for remote lab meetings cannot be reimbursed

- PIs should be extremely supportive of trainees during this time. Consider streaming social activities online to bolster spirits and create community/connection (movies, TV shows, yoga class, cooking class/demo, etc.).
    - Keep people socialized/ in touch with each other
    - For people new to the US / language barriers, difficult to navigate the situation
    - Keep trainees engaged and keep morale up
    - Important to not only ask about how trainees are doing, but their families as well

- Ask lab members to provide regular summary of what they're working on and highlight any roadblocks or bottlenecks
    - Meetings on an individual, sub-group, and group level
- Extensive discussion re: coordination of efforts → Solution: Introduced "Basecamp" - good way to have collaborations within a lab, organize lab meetings, etc.
- NIH offers online wellness seminars.

Mentoring

- PIs are encouraged to regularly contact trainees to check in and ensure that work is going smoothly.
- Innovative idea: Provide trainees opportunity to mentor others
    - Trainees need leadership opportunities - helps them appreciate what it is to be a good trainee and elevates how people function.
    - Part of being a good mentor is being a good mentee.
    - One idea is to use co-mentorship teams that pair pre-docs with post-docs.
- Summer programs can be moved online and students given a stipend.
    - Programs such as SUIP can be used to building mentorship pipelines.
    - These types of programs help students learn how to be "good mentees" and take full advantage of mentorship opportunities.
    - The Office of Inclusion and Diversity has provided virtual opportunities to continue to foster engagement and community during the crisis.
- NIGMS driving requirement changes re: trainer/mentorship training
    - No formal requirement but clear trend - expectation that trainers on training grants will have had experiences that would make them better mentors. Opportunity to use existing training programs to introduce trainees to mentorship roles.
    - CTSA offers intensive annual program on mentorship (8 hours).

Advisory boards

- Advisory boards provide integral feedback to training programs. PIs are encouraged to convene these groups remotely during this time.
- In addition to giving integral feedback, advisory board sessions can be a good way to prepare for a site visit.
- COVID period is an opportunity to involve people as remote external advisors who might not have been willing to travel to serve on board before.
- Meetings can be combined to save funds (ex. Center grant meetings can be held the same day as training grant advisory board meetings, with both sessions taking half a day or so).
- For small grants, it can be difficult to establish a cost effective advisory board. Under normal travel circumstances, one suggestion was to ask an invited speaker (for retreat, etc.) to act as an external advisor, then include two remote advisors as well (resulting in feedback from 1 onsite and 2 other external).
- Suggestion to set aside portion of your budget for review of training grant.
- In renewal, recommendation to include feedback from advisory board (+ response); impressive addition to a summary section.
- It can be challenging for external advisors to get real feel for what the program is remotely (personality of the program).

- Recommendation to have external advisors speak to trainees without program faculty in the room, to get better idea of program and allow for interaction.

Suggestions for future session topics

- Collaborations between Penn T32s. ("We are always trying to explain Table 3 and how our grant is different. Experience with collaborative two PI T32 grant (composed of physicians-scientists) was well received. We may want to discuss ways to promote synergies.")
- Potential for retreat for all grants in an institute (ex. All NCI T32s or NIGMS T32s involving diversity may want to have a retreat together).

Final points

- Our main goal is to support trainees in any way we can while continuing productive research efforts.
- PIs are encouraged to start thinking about strategies for when we are able to resume research on campus.

Session #5: November 6, 2019

Tracking Career Outcomes for Postdocs: A pilot program with academic analysis

(presented by Dr. Maja Bucan)

- Effort to track outcomes for grad students and postdocs
- Penn/BPP working to provide additional metrics: PI/mentor mapping, current Penn affiliation, PhD from Penn
    - Currently working to validate the database
    - Reaching out to faculty for data/feedback

Strategies for Candidate Selection

- Identifying candidates
    - Internal applicant pools
        - Recommendation to work with graduate groups
        - Work with other departments on a joint call for multiple T32s
            - Provides the opportunity to apply to one or all grants
            - Consolidate process through an online application system
    - External applicant pools
        - Consider attending meetings of relevant national student societies
        - External recruiting at national conferences and meetings
        - Visit other schools and give recruiting talks
- What to consider when selecting a candidate
    - Academic Excellence (standardized scores, curricular requirements)
    - Appropriate for scope of training grant
    - Dispersion amongst trainers
    - Diversity (sex/gender/URM)
    - Academic future interests
    - MD vs PhD
    - Clinical scholars
    - Standardized scores
    - Interdisciplinary/multiple schools
    - Curricular requirements
    - New challenge of additional skill set

- Selection process
    - Use of an executive committee to rank/chose candidates (ultimately the PI decides)
        - Important to have some structure in place for appointments
        - Could include currently funded trainees, senior colleagues
        - Keep committee diverse to obtain the most perspectives
            - Rotating committee of all trainers
    - In person interviews or luncheons with brief presentations
        - Ex: Bring applicants in to present one slide on research and one slide on personal background to executive committee/trainers/PIs over lunch
        - Penn View Event – 1 day event; invite senior graduate students across the country to interview with 3 faculty
            - Potential to match student with training grant opportunity
- Challenges to recruitment:
    - Interdisciplinary research that has no specifically associated department
    - MDs vs. PhDs

        - Challenge to fit clinician skill set into research
        - "Dry work" may fit best within clinician-scholar program
        - Placing PhDs in MD slots – treatment of this is mixed; depends on institution
    - Open slots
        - Open slots are problematic for reviewers – indicative of insufficient applicant pool
        - Can be especially challenging when grant focus is narrow/niche

Minority Supplements

- It is feasible to appoint URMs on training grant before moving them to a supplement
    - Supplements take time - option to include URM on T32 initially (to get credit toward T32) and then transition to supplement (or other mechanism)
    - An open slot may be acceptable if trainee is moved to an R01 supplement
    - Note that Program Officers may have different views than those reviewing the grants
        - Regarding any disconnect between POs and reviewers, beneficial to be able to strongly justify choices to reviewers. If you make a change, recommendation to highlight it and show data supporting your reasoning for the change.
- PennView Postdoctoral Diversity Initiative – managed by BPP this event exposes graduate doctoral candidates to postdoctoral research at Penn. It provides candidates with first-hand look at PSOM's cutting edge research and allows students to network with faculty.

Year 5 Appointments

- Best to inform candidate that appointment is for 1 year, and is renewable based on funding
- Some departments commit 2 years of funding based on "satisfactory progress," which leaves options open if the candidate does not perform well
- Payback
    - Does not have to be on the training grant
    - Dependent upon what the trainee is doing after first year
    - Can include any qualified activity
- PIs may opt to submit applications early, when permissible
    - Can be risky – some grants specifically state that you can't apply early
    - Usually end up completing another application 1 year out – typically strengthens application and only requires some incremental work to update application

Requiring vs. Not Requiring "F" Submissions

- Benefit: Students on training grant get experience writing grant applications, peer review
    - Depends on the discipline – for some, it is the expectation that grant writing training is in place

Session #4: June 6, 2019

Getting started with T32 grants – click here for slides

- **General Guidelines**
  - Contact Aislinn Wallace with trainer list and set up a meeting to review different parts of the grant and the overall process.
  - Be in touch with PI early and often. Narrative text is reliant on tables so it is helpful to get PI involved in the process.
  - Pay attention to instructions from the NIH, not just FOA. NIH is good at documenting what you need but that information not always straightforward to find (Aislinn can help).
  - Review data tables line by line to get a good sense of what is required.
  - Talk to people who have submitted similar proposals (i.e., to same institute or with similar research areas).
- **Acquiring and tracking predoc and postdocdata**
  - LinkedIn – create a group and invite former trainees to join for tracking purposes.
  - When reaching out for data, make it as easy as possible on the responder's endto encourage a reply (drop down menus, templates,etc.).
  - Radius by Campus Management has been used for some graduate program tracking.
  - The Institute for Research and Analysis is currently working with 3rd party vendor to create data profiles of postdocs from data sets – seems promising so far but still in development.
- **Applicant pool data and Table 6B**
  - Applicant pool data are dependent on faculty reports of their postdoc recruitment information.
  - Past attempts to systemize/centralize received pushback from faculty.
  - May require a cultural shift – instill in trainers that they are the stewards of the grant and help them submit applicant pool data eachyear.
- **Table 6B – challenging, and a minimal portion of the final grant.**
  - Limited guidelines for deciding which interviews to count/include – each T32 grant proposal has to determine parameters for extractingdata.
  - Goal is to show competitive (and representative) applicant pool.
- **Table 1 – required to include 2 parts regardless of whether it is a pre-doc or post-doc submission.**
  - Initial draft of table from Training Grant Database will show any department or graduate group if it is home to a trainer (can be a good starting point, but not all of these need to be included in the finalversion).
  - Pre-docs at Penn are associated with graduate groups (separate from academic departments, even if they have the same name) and will reflect faculty from all over the university.
  - Faculty-to-department relationship is often one to one; faculty-to-graduate group can be one to many.
  - Use faculty's primary appointment to avoid double counting (PIK professors are an exception) – be aware of multiple appointments and how it can impact totals.
- **Biosketch for T32 – new requirement to include personal statement**
  - Personal statement for T32 proposals should reflect training (not research) to justify the trainer's relationship to thegrant.

T32 Tips

- Need to update biosketch to make it specific to each proposal – encourage trainer to send text as word document form (notpdf).

- PI should review personal statement to ensure that it conforms to the requirements of the grant. Leverage historical data when creating tables and or programdescription.
- Some grants go further than the 5 or 10-year lookback to include trainees as far back as 25 years if favorable.
- If you have a history when you go into a grant renewal, data builds with each cycle and can be very impressive.
- PI Involvement - Centralize as much as possible from the start so that the PI can easily oversee the process. PI needs to be involved throughout instead of occasionally/periodically.
- Collect data continuously from the start to create a productive series of data.
- Keep folders for data specific to each item/table. Thiscan be done in the Box folder, in order to keep everything in the same place. Cross-reference tables for accuracy.
- Difficulty getting a response fromtrainer?
  - Give trainers information and request that they review/correct (make it easy for them to respond).
  - Reach out to the trainer's BA to assist obtaininginformation.
  - Have PI reach out to the trainer.
- Use a website in place ofappendixes
  - Because Appendices are no longer allowed, all content to be included in grant proposals needs to fit within the page limit. A potential solution is creating a website.
  - Website can show a lot of things in the grant in a different way – infographics, pictures, flyers, etc. are often more engaging thannarrative.
  - Good at showing outcomes – the bread and butter of what the NIH wants to see.
  - Some institutes have even encouraged the use of websites. However, there are some limitations as to where links can be included, so please refer to instructions/check with Program Officer
  - PMACS is a good starting place for developing website; has a self-service web program.

Available T32 Resources

- Website
  - Current T32s at Penn – list of grant titles, PIs, Grant # and predoc/postdoc support information
  - T32 Proposal Development Guide – includes key contacts, data table information, additional components of proposal development, a recommended timeline, and other helpful resources.
  - Best Practices Series – slides from past T32 sessions available for reference
  - T32 Related Training for Predocs and Postdocs – information regarding NIH- mandated components of T32 training for biomedical trainees organized by BGS and BPP
  - NIH Data Table Overview – sample data tables, instructions, andFAQs
  - **Training Grant Database** – PMACS developed; assembles data from various UPenn and PSOM databases; currently used by BGS staff only (with long-term goal of PI/admin self-serve)
    - Generates versions of most T32 data tables; *however*, often centrally- provided data must be reconciled with and/or supplemented by data obtained from local sources. PIs should review any BGS-provided data table for accuracy.
- **Grant Text and Supporting Data**
  - Boilerplate sample text and supporting data from past funded proposals is made available in working with individual PIs and administrative staffthrough Penn+Box
  - Important note: PIs must customize text with activities of specific trainer/trainees

How will xTRACT affect proposal preparation?

- XTRACt was developed by NIH to collect data to create data tables required for grant proposals; replacing current systems for creating data tables. There are some limitations, so it is recommended to start early.
- Required for RPPRs starting in October 2019. More details can be found here.
- Uses data compiled into Research Training Datasets (RTDs) to populatetables.
- xTRACT is a module within eRA Commons; requires eRA Commons access.

Session #3: April 24, 2019

How can you attract diversity trainees?

- Attend events which focus on minority and under served populations
    - Examples of these events include the Society for Advancement of Chicanos and Native Americans in Science (SACNAS) Conference, the Annual Biomedical Research Conference for Minority Students (ABRCMS), the Emerging Researchers (ERN) Conference in STEM, and the Penn Honors Diversity (PhD) Symposium
    - It is important to bring faculty, students, and staff to theseevents.
        - Faculty can discuss science with potential applicants, staff can discuss administrative logistics, and students can provide valuable information about the campusexperience.
    - Follow up with emails introducing interested students to relevantfaculty
- Use the student's actual name (and not an Americanized version) when conversing
- Emphasize the wide network of on campus resources, including CAPS and relevant student groups/programs (SUIP, BGSA, LTBGS, etc.). Be sure to highlight the community support Penn can provide.

Tracking Outcomes & Successes

- Be aware of that what defines a "success" can vary across the NIH.
- Clearly define "success" within your T32 and show how you achieved it.
- BGS maintains a university-wide database containing departmental, faculty, and investigator information for graduate students. They are currently working to include this information for postdocs, as well as mentoring outcomes.
- LinkedIn can provide valuable information on outcomes. Many PIs require their students to create a profile, though they do not always maintain it. Regularly following up with former students via email can help provide more accurate data.
- All T32s should include career outcomes, which Aislinn Wallace can help create upon request.
- xTract (Extramural Trainee Reporting and Career Tracking) is an eRA Commons module used by applicants, grantees, and assistants to create research training tables for inclusion in progress reports and institutional training grant applications. NIH will require use of the xTRACT model for RPPRs beginning October 2019, and for renewals in January 2020

Adding Innovation to Training Programs

- Consider the career development paths of your trainees
- What skills will trainees need, and how can you help students obtain them? For example, in order to teach students to think on their feet, one department brought in a comedian to help students learn to improvise in front of agroup.
- Provide students with information on relevant campus groups/activities (career affinity groups, networking events). Emphasize a sense of community and inclusion in your program.
- Consider hosting your own events to meet these needs. Examples can include coffee hours with faculty, research paper discussions, etc.
- Explore how you can use existing tools in new and creative ways.
- View slides here.

Session #2: November 5, 2018

How to Leverage Penn Resources

- Penn's single campus with multiple schools in close proximity offers the opportunity for multidisciplinary proposals.
    - Some PIs include a map within the proposal to show that the campus is ideal for interdisciplinary training. Geographic proximity is key; all top schools are a ~10 minute walk.
    - Multitude of training resources on campus, with several top 10 ranked schools all located within a 10-minute walk of each other. Most other institutions do not have the opportunities afforded atPenn.
- Suggestion to document collaboration among trainers, and relay shared grants in T32 proposals.
- In some cases, a group built a center, then used the center to build a training program as a complement. If there are other centers being formed, a training grant could be used to support this.
- When there is a clinical component to training grants, the connections with the hospital provide more opportunities (trainees attending grand rounds, etc.). Single campus and knowing the right people makes this happen.
- NHGRI encourages the PIs of similar training grants to work together. They also have an advisory board for all of them, and a board for diversity recruitment. All provide pre- and post- doc support, and working with SEAS and SAS has been encouraged and very helpful.
- Potential new PIs from Penn should not submit during the same round, and should let other PIs know if they are going to share previous proposals with other people.
- PIs might want to share resources, such as statisticians.
- The wealth of training grants at Penn means you don't have to develop a proposal in a vacuum. Penn is the single institution with the most T32s. The advantage is that there is significant support from other PIs; the challenge is to avoid duplication.

Resources

- It would be advantageous to have groups of faculty advisors/consultants who could serve as mentors for faculty who are putting together proposals for the first time.
- It would also be helpful to develop a mechanism for PIs to communicate directly and share information.

Institute-Specific Notes

- NIGMS is at the vanguard at the pre-doctoral level, and other institutes will likely follow some of the changes that NIGMS makes. NIGMS has gotten rid of all competitive renewals. SRR requirements are also changing.

Diversity

- Diversity training and recruitment is important; it's imperative to highlight the stream of incoming applicants. (Consensus that self-reported diversity is sufficient for NIH purposes)
- How many junior faculty should be included as trainers? Some PIs make sure that ¼ of trainers are junior faculty with minimal training history. Some PIs include a special section in their proposal on

new faculty recruited from different fields, noting specifically that new faculty will be added as trainers. In some cases, it's important to acknowledge that they don't have funding or a training history yet. Reviewers want to see a diversity of faculty ranks. PIs have made the case that junior faculty will be co-mentors, and that no trainee will be mentored without special attention. Expectations seem to vary by institute, but if potential mentors do not have funding, they should at most be co- mentors with mentors who do have funding.

- Implement a diversity action plan, paying consultants from other institutions to help recruit undergrads from under represented institutions.
- Arnaldo Diaz's office runs SUIP and PREP programs, and needs help from PIs to go to conferences (ABRCMS, SACNAS). PIs can also give a talk at one of these (contact Arnaldo for details). These conferences are relevant to both pre- and post- doctoral trainees (primarily graduate students there, some people applying to graduate school). These meetings are very different than other meetings, and highlight stories from presenters about what they had to overcome to do the science that they do.

How to Balance Professional Training vs Science Training

- BPP and BGS have a lot of activities you can list for RCR training, careers,etc.
- For postdocs especially, it can be difficult to illustrate a difference between those on T32s versus those with individual F awards. There should be some distinguishingfeature.
- Suggestion to include team-teaching by trainers on the grant; this has worked well because the mentors were incorporated in the education. This could be used for other T32s, even without an official/formal course. If this has already happened, it could retroactively be named as a 'pilot.'
- PIs can frame a grant as a testing ground for activities that are used to train other doctoral students. When this training is successful, it's expanded for other students; the grant gets credit.
- Seminar series can bring back former trainees at different stages (especially recent graduates); this allows current trainees to see people who have been in their shoes.
- Some trainers require or encourage trainees to apply for F or K awards; this is a good way to show results, and good for future career development.
- Some postdoc PhDs are required to work with clinicians for 4 hours/year. They also have to attend a grants club, chalk talks, critical analysis sessions, and stats workshops.
- Training or educational activities can be done as a group of PIs to cut down on overall expenses and efforts of individual PIs.
- Are there any other unique ways to use Training Related Expenses, other than travel for conferences? Some trainees doing clinical work fund patient incentives/reimbursement (please check whether this is allowable at your institute before proposing). Others pay for trainees to get a master's degree, or to pay for classes. Some of it goes to cover health insurance or computers, travel for speakers, or external advisors.

General

- Creativity is important; PIs must revitalize grants and bring new excitement.
- Most PIs have external advisors who complete regular reviews of the training grants. This is fairly standard now.

Outcomes

- Outcomes can include alternate careers, as long as they're in STEM. PIs should define measure of success in the grant, because it can vary. The expectation is that the trainees are publishing, and

are competitive for faculty positions, even if that's not what they end up pursuing.

- It is important to read the review criteria - because it does vary from institute toinstitute
  - check with program officer, because they should be able to clarify what will be looked for.
- You can help yourself by doing your own outcomes analysis for the reviewers. Instructions are pretty clear that you need to discuss the data in your tables inyour text, but not all PIs do.
- Tracking trainees over time is important. Suggestion to create a LinkedIn group as a way to keep track of alums/former trainees.

Click here for notes from this session

Session #1: April 24, 2018

Logistical Support for T32 Proposals

- View slides here

What constitutes a "training program" for postdocs?

• The Muscle Club has a website that allows the program office to see trainees' activities.
• The BPP website provides information about various training opportunities for all postdocs.
• Some T32s have individual websites (along with a seminar series and other activities).
• To collect data on postdoctoral applicant pool, you can use an ad, which generates replies that comprise thepool.
• Some collect post-doc data directly fromPIs.
• Suggestion to arrange externships for trainees in your program
• NIH now supports the idea of extending training developed in association with the T32 to a broader community of trainees.

What do reviewers look for when reviewing a training grant?

• Reviewers want to see a mix of trainee demographics.
• They also want to see interaction among the trainers and trainees, including joint lab meetings and co-publications, as well as unique features of the program.
• The data table information is pretty dense and needs to be emphasized carefully in the grant; he generated a "table of tables" to summarize outcomes and help with evaluation. He stressed the importance of numbers in the various tables lining up and presenting consistently. He also said he's created a LinkedIn group for tracking former trainees and has benefitted from an external review committee. Mike said he's also been on study section and his main recommendation is to present the cool science the trainers and trainees are doing in order to get reviewers excited.
Mike also said it's important for the PI to demonstrate commitment to the training grant, with at least 5-10% effort.
There was some discussion of the value of providing trainees with career development and skills training for a variety of non-academic as well as academic careers; some institutes (particularly NIGMS) seem to value this more than others.
Josh Gold commented on the program officer's ability to prioritize funding of particular grants beyond the study section's recommendations. In addition, there was discussion of the influence of trainees' subsequent grant awards (Fs, Ks, and Rs) and the relative value of encouraging trainees to submit for Fs after being supported on a T32

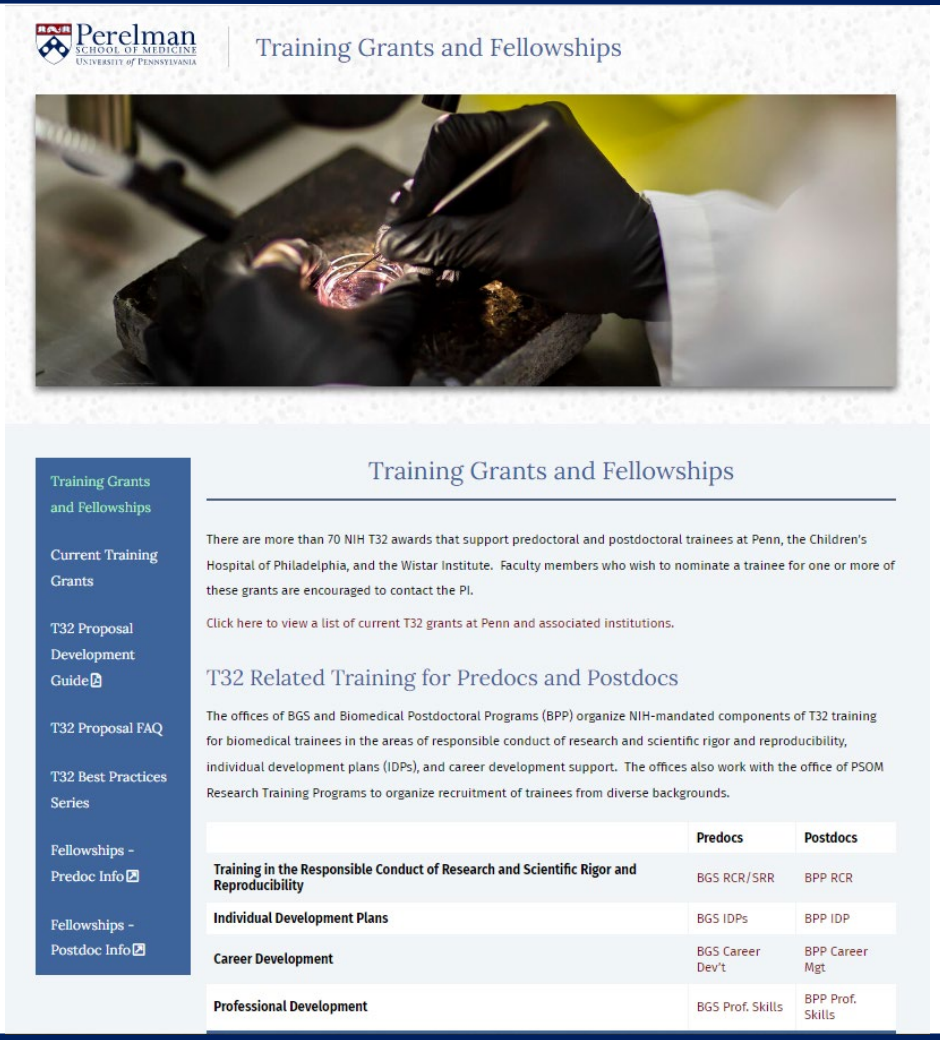
New Application Requirements

Gabrielle Ostapovich
Associate Director, T32 Proposal Development
Biomedical Graduate Studies
gost@pennmedicine.upenn.edu

Penn
University of Pennsylvania

Website

www.med.upenn.edu/training-grants-fellowships/



T32 Proposal Development Guide (Pennkey protected)

T32 Proposal/Data Table FAQ

Contact Gabby for:

- Template for Institutional Letter of Support
- Initial versions of data tables 1, 2, 3, 4, and Table 8A Part II & III.

gost@pennmedicine.upenn.edu

T32 Best Practices Discussion
Thursday, Nov. 17th 2022

Biomedical Postdoctoral Program
Maja Bućan

Preparation of T32 training grants

1) Letters of support (VD CSO and or BPP Director) and/or a list of BPP workshops;

2) T32 Tables – Contact Gabby Ostapovich <gost@pennmedicine.upenn.edu>
Subin Lee (BPP) works with Gabby to provide Postdoc data

3) Write-up on Diversity initiatives
(PennPORT, PennVIEW, Provost Fellowships, P-SPINE, BPC/PPA);

4) Write-up on the Mentorship training workshops (same as the BGS document);

5) AAMC Compact for Postdocs;

6) Responsible Conduct of Research
Scientific Rigor and Reproducibility
RCR/SRR Symposium – Overview and Introduction (April)
BPP Case-based monthly workshops (list of workshops)

FY 2022 Updated Guidance: Requirement for Instruction in the Responsible Conduct of Research

Notice Number:

NOT-OD-22-055

Key Dates

Release Date:

February 17, 2022

Related Announcements

NOT-OD-10-019 - Update on the Requirement for Instruction in the Responsible Conduct of Researc

NOT-RR-11-005 - Modification of PAR-10-206: NCRR Science Education Partnership Award (SEPA) (R25)

NOT-OD-21-152 - Extension of COVID Flexibilities for Instruction in the Responsible Conduct of Research

Issued by

NATIONAL INSTITUTES OF HEALTH (NIH)

AGENCY FOR HEALTHCARE RESEARCH AND QUALITY (AHRQ)

HEALTH RESOURCES AND SERVICES ADMINISTRATION (HRSA)

- conflict of interest – personal, professional, and financial –
  and conflict of commitment, in allocating time, effort,
  or other research resources;
- policies regarding human subjects, live vertebrate
  animal subjects in research, and safe laboratory practices;
- mentor/mentee responsibilities and relationships;
- **safe research environments (e.g., those that promote inclusion**
  and are free of sexual, racial, ethnic, disability and other forms of discriminatory harassment)
- collaborative research, including collaborations with
  industry and **investigators and institutions in other countries;**
- peer review, **including the responsibility**
  for maintaining confidentiality and security in peer review;
- data acquisition **and analysis;** laboratory tools
  (e.g., tools for analyzing data and creating or working with digital images);
  recordkeeping practices, including methods such as electronic
  laboratory notebooks, secure and ethical data use; data confidentiality)
  management, sharing, and ownership;
- research misconduct and policies for handling misconduct;
- responsible authorship and publication;
- the scientist as a responsible member of society, contemporary ethical
  issues in biomedical research, and the environmental and societal impacts of scientific research.

Symposium of Responsible Conduct of Research (April, 2022)

- 10:00-10:20 AM Overview and Introduction – Maja Bucan
- 10:20-10:45 AM Responsible authorship and publications - Ronen Marmorstein
- 10:45-11:05 AM Mentor/Mentee responsibilities - Emma Meagher

- 11:10-11:25 AM Break

- 11:25 – 11:50 AM Research misconduct - Glen Gaulton, Andrew Paskevich
- 11:50 – 12:15 PM Scientific rigor and reproducibility – Kurt Engleka
- 12:15 – 12:40 PM Safe research environment – Jennifer Pinto Martin

BGS: EDUCATION AND TRAINING PROGRAMS

KELLY L. JORDAN-SCIUTTO,PHD

ASSOCIATE DEAN FOR GRADUATE EDUCATION, DIRECTOR OF BIOMEDICAL GRADUATE STUDIES, PSOM

PROFESSOR AND CHAIR, PATHOLOGY, PDM

BIOMEDICAL GRADUATE STUDIES

Graduate Groups

- **Biochemistry & Molecular Biophysics (BMB)**
- **Cell & Molecular Biology (CAMB)**
  - Microbiology, Virology, Parasitology (MVP)
  - Genetics and Epigenetics (G&E)
  - Gene Therapy and Vaccines (GTV)
  - Developmental, Stem Cell, Regenerative Biology (DSRB)
  - Cell Biology, Physiology & Metabolism (CPM)
  - Cancer Biology (CB)
- **Epidemiology/Biostatistics (GGEB)**
- **Genomics & Computational Biology (GCB)**
- **Immunology (IGG)**
- **Neuroscience (NGG)**
- **Pharmacology (PGG)**

- **Perelman School of Medicine**
- **Veterinary Medicine**
- **Dental Medicine**
- **Nursing**

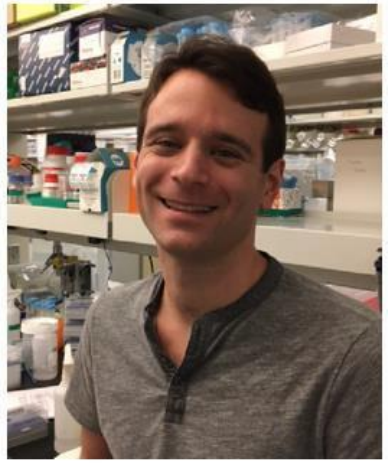
- **Wistar Institute**
- **Children's Hospital of Philadelphia**
- **NIH Intramural**

- **Arts & Sciences**
- **Engineering & Applied Sciences**
- **Wharton**

BGS Students and Faculty

- **842 PhD Students**
  - –675 PhD (80%)
  - –142 MD/PhD (18%)
  - –18 VMD/PhD (2%)

- **707 Faculty**
  - –71% PSOM
  - –29% Schools & Institutes



FINANCES

- Coverage of full stipend, fees and tuition throughout your time in the program
  - Stipend $34,000 for FY20
  - Full Tuition coverage
  - Full Health Insurance
  - All Fees covered

Graduate School Career

Acceptance into BGS

Year 1

Core Courses

Grad Group Specific Courses

Seminars / Retreats

Lab Rotations

Year 2

Grad Group Specific Electives

Preliminary Exam

RCR/SRR

Seminars / Retreats

Lab Research

Years 3 & 4

Thesis Research

RCR/SRR

Seminars / Retreats

Scientific Meetings

Skills and Career Development

Year 5+

Thesis Completion

Talks & Presentations

Scientific Meetings

Postdoc/job Search

CURRICULUM

Core:

BIOM600 – Cell Biology and Biochemistry

BIOM611 – Statistical Methods in Experimental Design and Analysis

BIOM555 – Advanced Gene Expression

Grad Group Specific Courses

Responsible Conduct of Research*

Scientific Rigor and Reproducibility*

CAREER DEVELOPMENT

CAREER DEVELOPMENT: SKILLS

Technical ⟺ Operational ⟺ Professional

- Laboratory skills
- Computational training
- Some training in technology via research core facilities and institutes

- Professional development website
- Professional skills series
- Certificate programxs
- Individual Development Plans (IDPs)

Career Certificates

Career Groups

Career Development Website

Career Externships

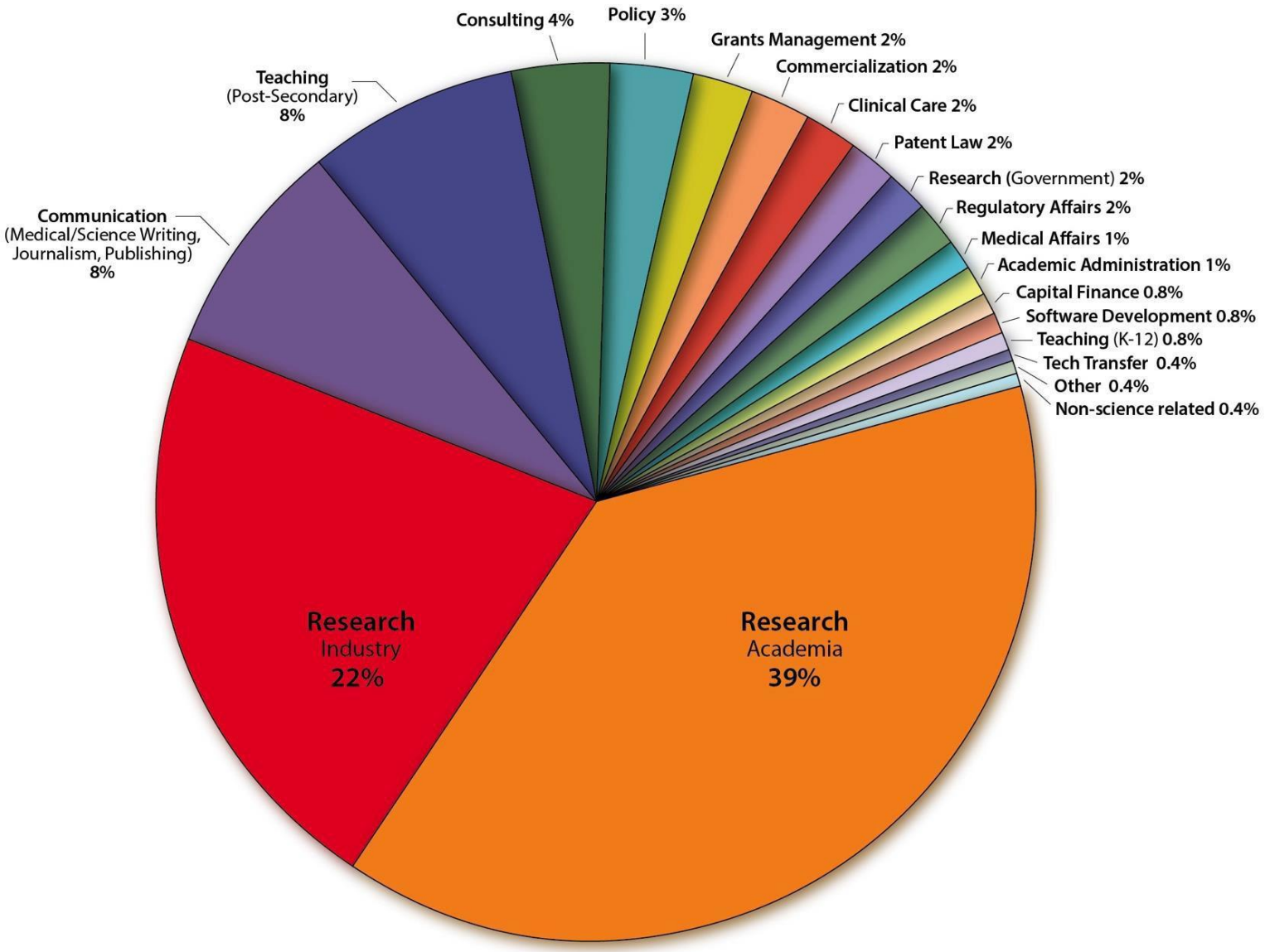
CAREER DEVELOPMENT: EXPLORATION

CERTIFICATE PROGRAMS

- BGS Certificates
  - Public Health
  - Graduate Training in Medical Sciences
  - Environmental Health Sciences
- Others
  - Teaching and Learning
  - Law
  - Biomedical Informatics
  - Language and Communication Sciences
  - Public Health and Aging
  - Social, Cognitive and Affective Neurosciences
  - Translational, Entrepreneurial, or Regulatory Sciences
  - Business Foundations

CAREER RELATED STUDENT GROUPS

- Center for Innovation Fellowships
- Penn Science Policy and Diplomacy
- Penn Graduate Consulting Group



CAREER OUTCOMES:

DATA FOR 2002-2011 BGS PHD GRADUATES

STUDENT LIFE

Student Groups

BGSA

EEJust Society

SACNAS Chapter

LTBGS

University Resources

https://www.vpul.upenn.edu

Student Health and Wellness

Campus and Community

Academic and Career


SACNAS
MEDICAL RESEARCH
Together for
More Progress
More Hope
More Life

STUDENT PRESENTATION

- Michelle Klima, Betley lab, 3rd year NGG
- Julianne Davis, Brady lab, 4th Year, CB-CAMB
- Sangya Agarwal, June lab, 3rd year, GTV-CAMB
- Valerie Sydnor, Student life, 1st year NGG

THANK YOU

KELLY JORDAN-SCIUTTO, PHD – JORDANK@UPENN.EDU

Status and Strategic Support for T32s

David R. Manning, PhD

Director of Training Support and Career Development, Biomedical Graduate Studies

Professor, Systems Pharmacology and Translational Therapeutics

Number of T32s and Supported Pre- and Postdoctoral Trainee Slots*

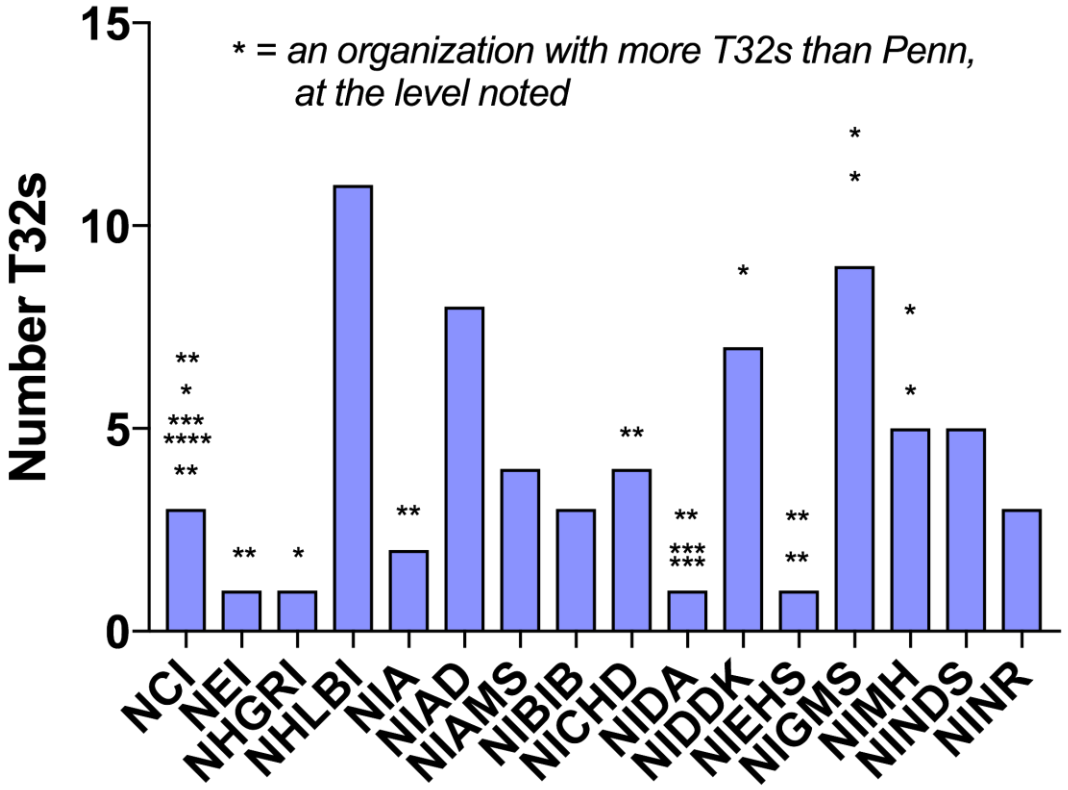
		Slots	
	T32s	*Pre*	*Post*
Penn	68	241	203
CHOP	9	0	38
Wistar	1	4	8
TOTAL	*78*	*245*	*249*

**NIH FY 2016*

Challenges

- The renewal of any T32 is always hard-fought.
- Expectations of different institutes continue to evolve.
- A ‘glass ceiling’ with respect to the number of T32s for any organization?

Penn T32s by Institute



*NIH FY 2016

NIGMS (Predoctoral T32s)

- ☐Behavioral-Biomedical Sciences Interface
- ☐Bioinformatics and Computational Biology
- ☐Biostatistics
- ☐Biotechnology
- ☑Cellular, Biochemical, and Molecular Sciences
- ☑Chemistry-Biology Interface
- ☑Genetics
- ☑Medical Science Training Program
- ☑Molecular Biophysics
- ☐Molecular Medicine
- ☑Pharmacological Sciences
- ☑Systems and Integrative Biology

Evolving NIH Requirements for T32s

- Training in ‘rigorous experimental design and transparency to enhance reproducibility’
- Skills training
- Diversity
- Mentorship
- Curriculum

Rigorous Experimental Design and Transparency

- *Currently in place:*
  - Required coursework in statistics
  - Workshop in authentication and transparency
  - Requirement for SRR-focused lab meetings
  - RCR/SRR website as a resource
- *Still to go:*
  - Formal introduction to concepts of premise (foundational research) and experimental design
  - Mechanisms for expanding statistical expertise
  - Reinforcement of concepts in classroom and committee settings

Penn

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Biomedical Graduate Studies

Responsible Conduct of Research (RCR) and Scientific Rigor and Reproducibility (SRR)

Overview

BGSrequires all of its predoctoral students to be trained in i} Responsible Conduct of Research (RCR}, and ii) Scientific Rigor and Reproducibility (SRR).

Training in RCR is achieved through lecture, web based programs, small group workshops, and RCR-focused lab meetings. Training places an emphasis on the involvement of faculty and satisfies requirements set by the NIH for individual fellowships and training grants.

Training in SRR is achieved through lecture and SRR-focused lab meetings. Training similarly places an emphasis on the involvement of faculty and satisfies requirements set by the NIH for individual fellowships and training grants.

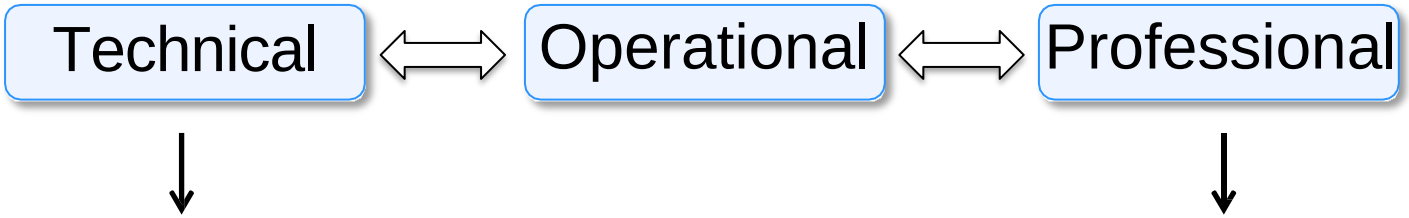
Students and faculty share responsibility in complying with required training. It is imperative to understand that failure to comply with training puts funding for training, and consequently research in general, at serious risk at Penn. BGS requires and actively monitors compliance.

https://www.med.upenn.edu/bgs-rcr-exdes/

Rigorous Experimental Design and Transparency

- *Currently in place (BGS):*
  - Required coursework in statistics
  - Workshop in authentication and transparency
  - Requirement for SRR-focused lab meetings
  - RCR/SRR website as a resource
- *Still to go:*
  - *Formal* introduction to concepts of premise (foundational research) and experimental design
  - Mechanisms for training in evolving statistical needs
  - Reinforcement of concepts in classroom and committee settings

Skills Training



Currently in place:

- Computational training
- Some training in technology via research core facilities and institutes

Still to go:

- An educational interface – managed and cohesive – for training in technology via research core facilities and institutes

Currently in place:

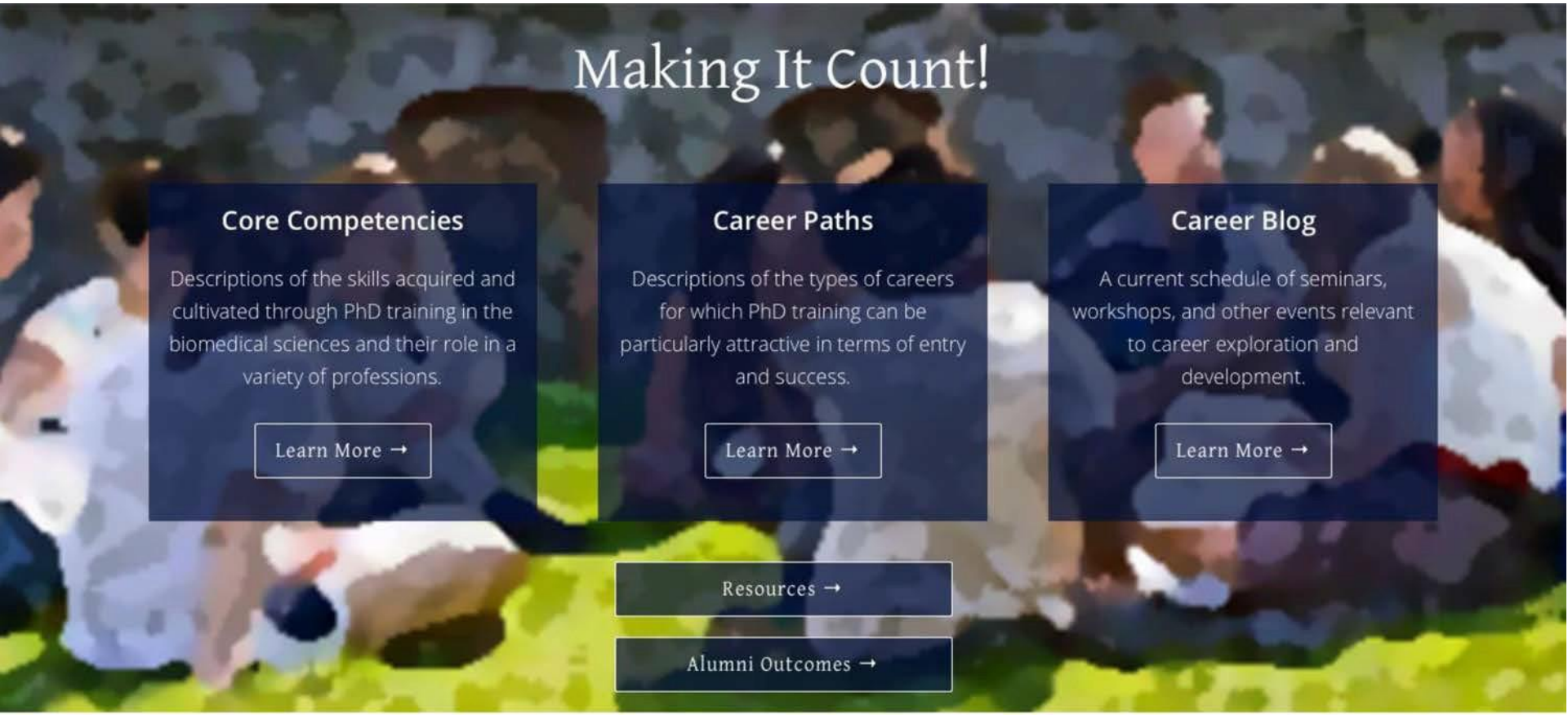
- Professional development website
- Professional skills series
- Certificate programs
- Individual Development Plans (IDPs)

Still to go:

- Career Resource Groups (CRGs)
- Experiential learning opportunities

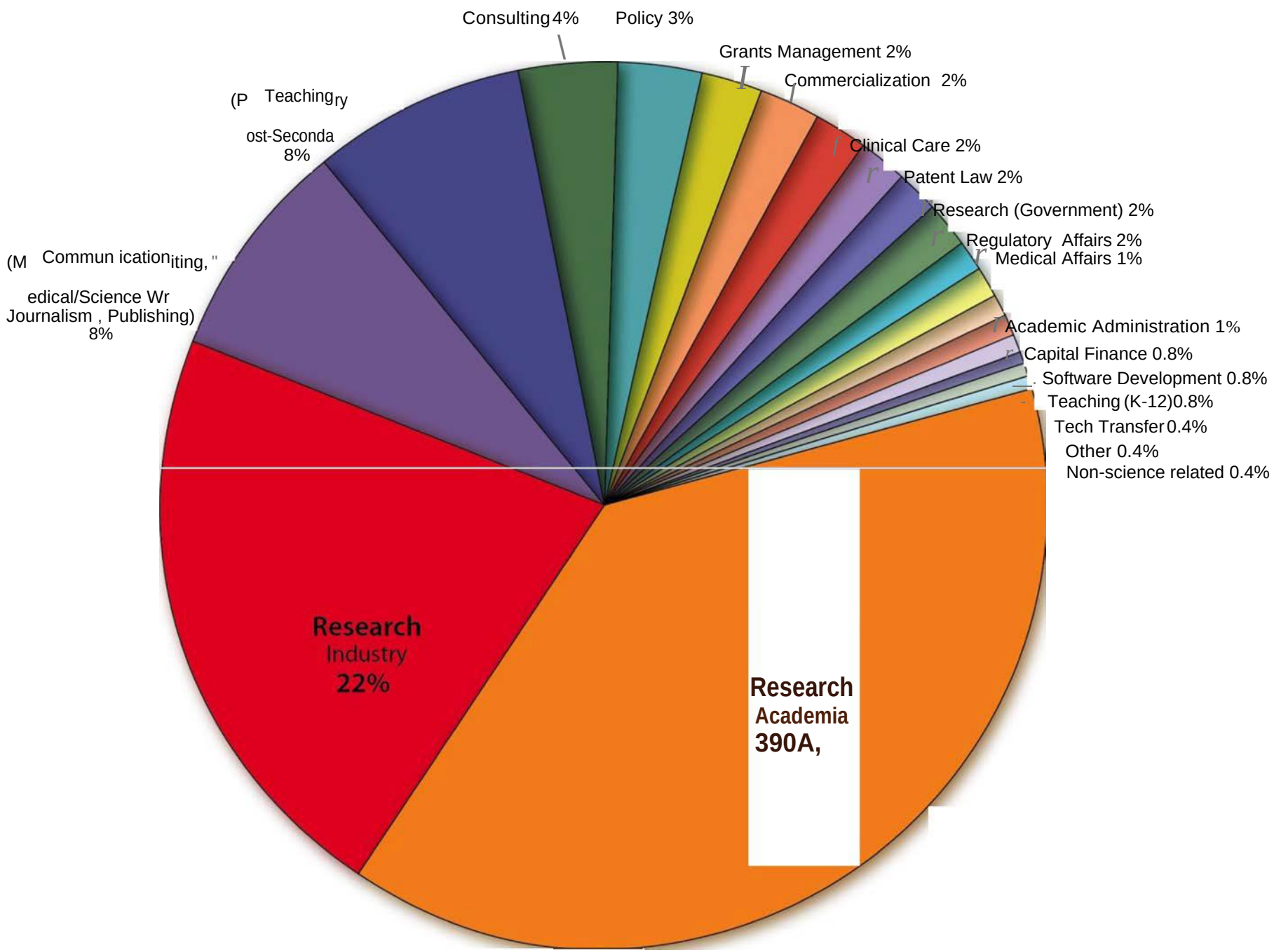
BGS Career Development

Core Competencies | Career Paths | Career Blog | Alumni Outcomes



About Us

Recent Blog Posts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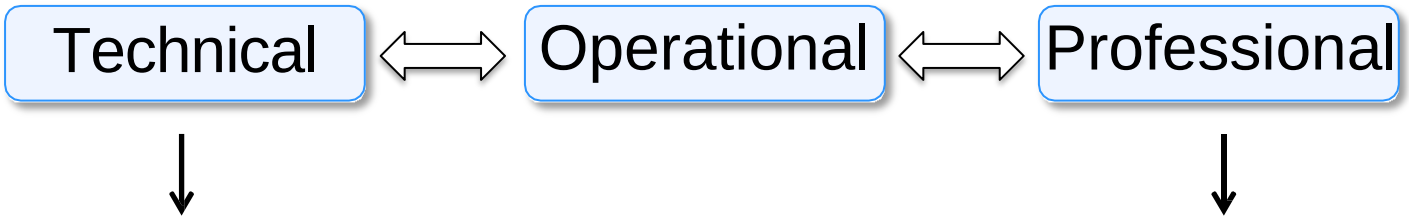
Data for 2002-11 BGS

PhD Graduates

Skills Training



Currently in place:

- Computational training
- Technical training via research core facilities and institutes (uneven)

Still to go:

- Technical training via research core facilities, institutes, and T32 faculty (managed and cohesive)

Currently in place:

- Professional development website
- Professional skills series
- Certificate programs
- Individual Development Plans (IDPs)

Still to go:

- Career Resource Groups (CRGs)
- Experiential learning opportunities

Enhancing Diversity

- *Currently in place:*
  - Arnaldo Diaz, PhD, Assistant Dean for Research Training Programs and Director of Recruitment and Retention of Diversity Scholars
  - Support structures: University's Weingarten Center SDS
  - Programs: SUIP, PennPREP, PennPORT
  - Groups: EEJust, SACNAS, Fontaine Fellows
  - Outreach efforts
- *Still to go:*
  - Pipelines at the level of disability

Boilerplate (BGS): Diversity Recruitment and Retention Plan

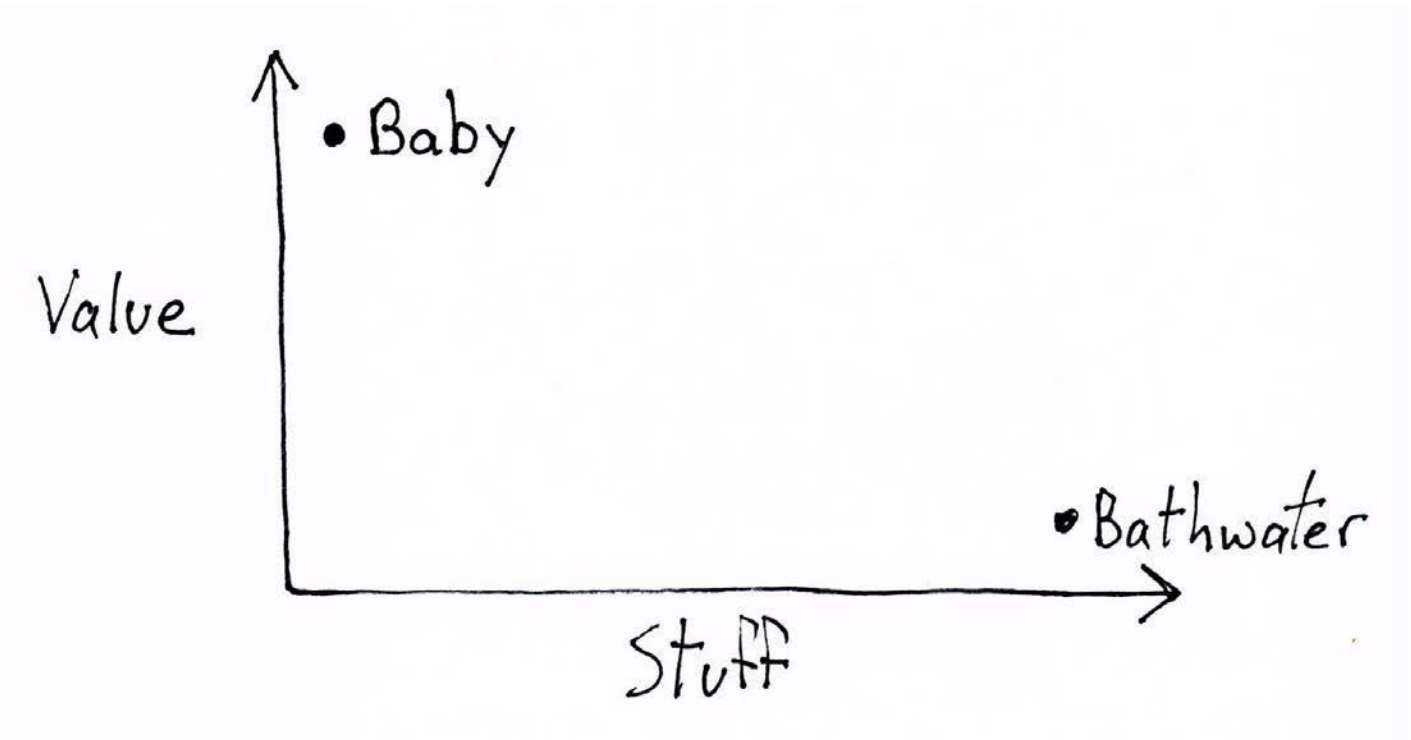
Mentorship

- *Currently in place:*
  - Documents articulating responsibilities for principal investigator, thesis advising committees, and trainee.
- *Still to go:*
  - Clarifying the role(s) of the lab environment, e.g. of staff and hierarchal relationships.
  - Clarifying the role of the *trainee* as a mentor.
  - Formalizing *training* that covers mentorship, unconscious bias, sexual harassment, and disabilities.

Curriculum

- *Currently in place:*
  - Student evaluations, graduate group reviews, and T32 success all indicate an appropriately diverse and strong curriculum.
  - A wide range of teaching practices provide useful points of comparison and evolution.
- *Still to go:*
  - Utilize the core curriculum (e.g. BIOM 600) to articulate and reinforce training in elements of critical thinking and scientific rigor (Kurt Engleka)
  - Utilize Penn's CTL to keep abreast of innovative practices
  - Utilize the BGS Curriculum Committee as a hub for innovative practices and ensuring integration of RCR/ SRR into curriculum.

A Word of Caution



Resources

- BGS
  - Responsible Conduct of Research and Scientific Rigor and Reproducibility: https://www.med.upenn.edu/bgs-rcr-exdes/
  - Career Development website: https://bgscareerdevelopment.com
  - Individual Development Plans (IDPs): http://www.med.upenn.edu/bgs/idp.shtml
  - Certificate programs: http://www.med.upenn.edu/bgs/certificate_programs.shtml
  - Mentorship guidelines: http://www.med.upenn.edu/bgs/documents/Responsibilitiesofthesismentorsthesisstudentsandthesisadvisorycommitteemembers_7-20-16.pdf
- BPP
  - Responsible Conduct of Research: https://www.med.upenn.edu/postdoc/rcr/
  - Career Pathways: https://www.med.upenn.edu/postdoc/postdoc-training-careerpathways.html
  - Individual Development Plans (IDPs): https://www.med.upenn.edu/postdoc/postdoc-training-individualdevelopmentplan.html
  - PennPORT Program: http://www.med.upenn.edu/pennport/

Logistical Support for T32 Proposals

Judy Jackson
Administrative Director
Biomedical Graduate Studies

Aislinn Wallace
Associate Director, T32 Proposal Development
Biomedical Graduate Studies

Penn
University of Pennsylvania

Resources Overview

- Website
- T32 Proposal Development Guide
- Staff in BGS and Other Offices
- TG Database for NIH Data Tables
- Grant Text/Supporting Data

Website

www.med.upenn.edu/training-grants-fellowships/

Perelman School of Medicine
University of Pennsylvania

Training Grants and Fellowships

Training Grants at Penn and Associated Institutions

Current T32s at Penn

T32 Proposal Development Guide

T32 Best Practices Series

Search Our Site...

Training Grants at Penn and Associated Institutions

There are more than 80 NIH T32 awards that support predoctoral and postdoctoral trainees at Penn, the Children's Hospital of Philadelphia, and the Wistar Institute. Faculty members who wish to nominate a trainee for one or more of these grants are encouraged to contact the PI.

Click here for a list of current T32 grants at Penn.

T32 Related Training for Predocs and Postdocs

The offices of BGS and Biomedical Postdoctoral Programs (BPP) organize NIH-mandated components of T32 training for biomedical trainees in the areas of responsible conduct of research and scientific rigor and reproducibility, individual development plans (IDPs), and career development support. The offices also work with the office of PSOM Research Training Programs to organize recruitment of trainees from diverse backgrounds.

	Predocs	Postdocs
Training in the Responsible Conduct of Research and Scientific Rigor and Reproducibility	BGS RCR/SRR	BPP RCR
Individual Development Plans	BGS IDPs	BPP IDP
Career Development	BGS Career Dev't	BPP Career Mgt
Professional Development	BGS Prof. Skills	BPP Prof. Skills

Current T32s at Penn/Affiliates

Grant Title	PI Name	Grant #	Predoc Support?	Postdoc Support?
Advanced Training in Nursing Outcomes Research	Aiken, Linda H	5-T32-NR-007104-19	✔	✔
Training in Pulmonary Immunology	Albelda, Steven M	5-T32-HL-007586-32		✔
VMD-PhD Training in Infectious Disease-Related Research	Atchison, Michael	5-T32-AI-070077-10	✔	
Reproductive Epidemiology Training Grant	Barnhart, Kurt T.	5-T32-HD-007440-22		✔
Training Program in Cell and Molecular Biology	Bartolomei, Marisa S.	5-T32-GM-007229-41	✔	
Training in Virology	Bates, Paul	5-T32-AI-007324-25	✔	✔
Training Program in Neuropsychopharmacology	Berrettini, Wade H	2-T32-MH-014654-40		✔
Mental Health Biostatistics Training Grant	Bilker, Warren B	5-T32-MH-065218-14	✔	
Predoctoral Training Grant in Pharmacology	Blendy, Julie A.	5-T32-GM-008076-33	✔	
Hematology Clinical Research Training Program	Brass, Lawrence F.	5-T32-HL-007439-39	✔	✔
Medical Scientist Training Program	Brass, Lawrence F.	5-T32-GM-007170-43	✔	
Training in HIV Pathogenesis	Bushman, Frederic D.	5-T32-AI-007632-18	✔	✔
Immune System Development and Regulation	Cancro, Michael P	5-T32-AI-055428-14	✔	✔
Diabetes, Endocrine and Metabolic Disease	Cappola, Anne Rentoumis	5-T32-DK-007314-37		✔
Training Program in Cardiovascular Biology and Medicine	Cappola, Thomas P	2-T32-HL-007843-21		✔
Training in Emerging Infectious Diseases	Cherry, Sara	5-T32-AI-055400-15	✔	✔

T32 Proposal Development Guide

University of Pennsylvania

T32 Proposal Development Guide

Perelman School of Medicine

Biomedical Graduate Studies
4/13/2018

Table of Contents

Staff in BGS and Related Offices

- Aislinn Wallace, BGS Assoc Dir for T32 Proposals
- Judy Jackson, BGS Admin Dir
- Mary Anne Timmins, Dir of Admin, Biomedical Postdoctoral Programs (BPP)
- Marianne Altland, Grants & Fellowships Manager, EVD/CSO
- Arnaldo Diaz, Asst Dean, Research Training

TG Data Table Database

https://grants.nih.gov/grants/forms/data-tables.htm

Data Tables

Use these data tables with Institutional Research Training grant applications. Select the appropriate blank data tables and instructions. Sample data tables and FAQs are available to help you.

The Instructions and Sample Data Tables file includes example data, detailed instructions, and rationale statements for each table. These are designed to print best in landscape mode. The Blank Data Tables file provides fillable format pages.

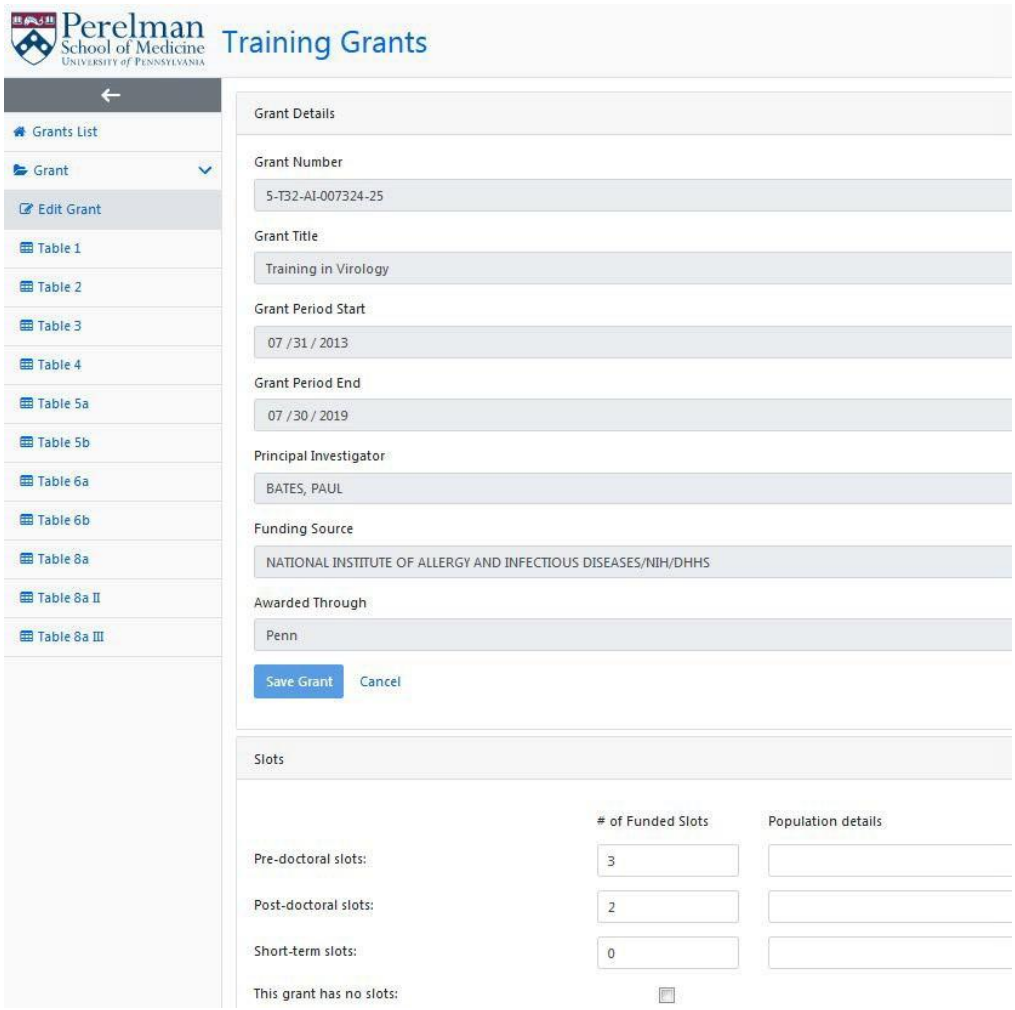
Introduction	Date Posted	File Link/Format/Size
Introduction to Data Tables – Read this first!	10/13/2017	MS Word (53 KB) PDF (437 KB)

Data Tables	Date Posted	Blank Data Tables File Link/Format/Size	Instructions and Sample Data Tables File Link/Format/Size
All Tables			
All Training Tables (1-8)	12/19/2017	MS Word (35 KB)	MS Word (122 KB) PDF (584 KB)
All Training Tables (Undergraduate Programs)	12/19/2017	MS Word (22 KB)	MS Word (68 KB) PDF (114 KB)
All Training Tables (International Programs)	12/19/2017	MS Word (27 KB)	MS Word (41 KB) PDF (101 KB)

TG Data Table Database

- PMACS (PSOM IT) developed database used by BGS staff (long-term goal of PI/admin self-serve)
- Generates versions of most of the T32 data tables, currently:
  - Tables 1, 2, 3, and 4 for pre- and postdoc grants
  - Tables 5A, 6A and 8A for predoc grants
- Gathers and assembles data from various University and PSOM databases, including:
  - PennERA (research and training grants)
  - Payroll (trainee funding)
  - FIS & GGMA (faculty appointments)
  - SRS, SMS, and PhD Career Tracker (student & alumni records)
  - BPP database (postdoc records)

TG Data Table Database



Grant Text/Supporting Data

- BGS and BPP have developed boilerplate text and collected examples of text from funded proposals for several grant sections
- Supporting data (e.g., individual trainers' participation in recruitment and training activities) are also available
- This data is generally provided in the Box folder
- It is ESSENTIAL for PIs to customize text with activities of specific trainer/trainees

Grant Text/Supporting Data

- Recruitment Plan to Enhance Diversity
- Plans for Instruction in RCR and Methods for Enhancing Reproducibility
- Facilities & Other Resources/Institutional Environment and Commitment to Training
- Career Development
- Letters of Support

Getting Started

First Steps:

- Review FOA
- Review Proposal Guide
- Review Proposal Timeline (below)
- Provide trainer list to Aislinn
- Meet with Aislinn to discuss process & grant details
- Review tables & notes in Penn+Box
- Review boilerplate text in Penn+Box
- Review checklist for next steps in Penn+Box

Proposal Timeline

Part 1

NIH Deadline		
5/25	9/25	1/25

Note: check the FOA for institute-specific deadlines

Task Completion Target Date			Pre NIH Deadline	Task
1/25	5/28	9/27	120 Days	• Develop initial list of trainers and invite them to participate. • Read FOA and any applicable notices to confirm requirements • Contact BGS with intent to submit
2/4	6/7	10/7	110 Days	• Provide list of willing trainers to BGS. Normally, within 2 weeks of receiving the list, BGS will put the following info. in a Penn Box folder: a) starter set of tables 1-4 for postdoc-only grants, as well as 5A, 6A, 8A for grants with predoc slots; b) for grants with predocs, a set of boilerplate text and supporting trainer information for RCR, diversity, resources & environment, etc.; c) a sample email to trainers to collect information; and a grant checklist, indicating next steps • Ideally, the PI and administrators working on the proposal should meet with BGS once the initial drafts of the tables are ready in order to discuss table details and next steps.
3/1	7/2	11/1	85 Days	• Review checklist, starter tables, boilerplate, trainer email. Contact trainers with requests for specific data points. • Contact uploader to discuss timeline for upload • Contact ORSS
3/6	7/7	11/6	80 Days	• (Ongoing) reply to BGS to indicate any changes to trainer list based on starter tables and indicating the participating graduate groups and departments so that BGS can prepare new versions of the affected tables (normally within one week).

Proposal Timeline

Part 2

3/11	7/12	11/11	75 Days	• Solicit information from trainers on updated list: biosketches, other support, verification of trainee info, participation in relevant activities (RCR training, diversity recruitment, etc.). Can use Trainer Data Solicitation document provided by BGS to facilitate this process
3/26	7/27	11/26	60 Days	• If the grant has postdoc slots, contact BPP for boilerplate and postdoc data, including postdocs by dept. and with trainers • Verify and assemble trainers' info. for relevant tables (1, 2, 4 in particular), recruitment and training sections, biosketches. Add relevant data to starter tables provided by BGS • Solicit/verify info. from current & former trainees (publications, research, positions, etc. since RPPR for renewals, and add'l info. needed for both competing renewals and new grants). BGS can provide data on BGS graduates' current employment for table 8A • Determine contacts for any information not complete in tables (e.g., non-BGS predoc info. for tables 1 and 6A, postdoc info. in various tables) and begin collecting (BGS can help)
4/10	8/11	12/11	45 Days	• Write research training plan, including data table information; determine if additional data will need to be collected • If trainers are removed from the grant, BGS can provide updated tables
4/10	8/11	12/11	45 Days	• Customize boilerplate on diversity, RCR, and the like to reflect activities of the participating trainers and programs, and develop new plans
4/25	8/26	12/26	30 Days	• Request letters of support, assemble/finalize grant for upload • Double check for any updates to FOA or notices
5/10	9/10	1/10	15 Days	• Check formatting against NIH guide • Work with ORSS to process the final review process

Penn+Box Folder

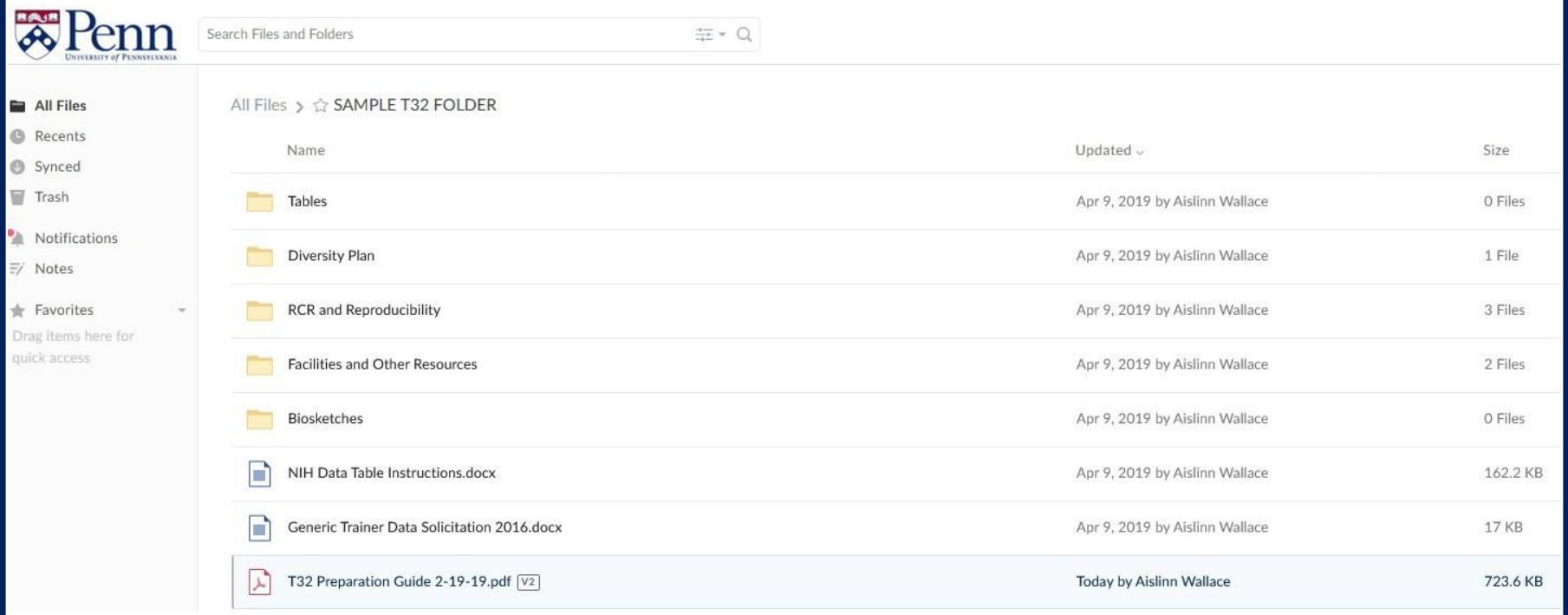


Table 1 - sample

Table 1: Census of Participating Departments and Interdepartmental Programs

Part I. Predoctorates

Participating Graduate Group	Total Faculty *	Participating Faculty **	Total Pre-docs	Total Pre-docs Supported by any HHS Award	Total Pre-docs with Participating Faculty	Eligible Pre-docs with Participating Faculty	TGE Pre-docs Supported by this Training Grant
Biochemistry & Molecular Biophysics	106	5	96	11	5	4	0
Cell & Molecular Biology	375	26	376	77	37	29	2
Genomics & Computational Biology	85	4	52	11	4	4	0
Immunology	122	13	67	19	6	6	1
Pharmacology	126	7	71	21	4	4	1
Totals:	**564***	**27****	**662**	**139**	**56**	**47**	**4**

* Note that individual faculty may be members of multiple grad groups.

** Number is a count of unique participating faculty across grad groups.

Part II. Postdoctorates

Participating Department	Total Faculty *	Participating Faculty *	Total Post-docs	Total Post-docs Supported by any HHS Award	Total Post-docs with Participating Faculty	Eligible Post-docs with Participating Faculty	TGE Post-docs Supported by this Training Grant
PSOM - Cell and Development Biology	25	3	44	3	2	0	N/A
PSOM - Hematology/Oncology	75	6	17	3	3	0	N/A
PSOM - Pathology & Laboratory Medicine	154	6	38	4	4	0	N/A
CHOP - Pediatrics	335	8	0	0	0	0	N/A
PSOM - Biochemistry and Biophysics	44	1	40	1	3	0	N/A
PSOM - Genetics	38	2	28	2	0	0	N/A
Totals:	**671**	**26*****	**167**	**13**	**12**	**0**	**N/A**

***4 trainers (Anguera, Blanco, Kahn, Shi) have appointments in departments not listed here

Table 1 | Grad group faculty named | Predocs with HHS awards | Dept faculty named | Postdocs with HHS Awards

Table 2 - sample

Table 2: Participating Faculty Members

Name	Degree(s)	Rank	Primary Department or Program	Research Interest	Training Role	Pre-docs In Training	Pre-docs Graduated	Pre-docs Cont'd in Research or Related Careers	Post-docs In Training	Post-docs Completed Training	Post-docs Cont'd in Research or Related Careers
Charles S Abrams	MD	Prof	PSOM - Hematology/Oncology		Preceptor	0	1	1	0	6	
Montserrat C Anguera	PhD	Asst Prof	SVM - Biomedical Sciences		Preceptor	3	0	0	0	0	
Craig H Bassing	PhD	Assoc Prof	PSOM - Affective Disorders Program		Preceptor	2	9	9	0	0	
Joel S Bennett	MD	Prof	PSOM - Hematology/Oncology		Preceptor	0	0	0	0	2	
Shelley L Berger	PhD	Prof	SAS - Biology		Preceptor	5	7	5	2	15	
Kathrin M Bernt	MD	Asst Prof	PSOM - Pediatrics		Preceptor	0	0	0	0	0	
Gerd A Blobel	MD, PhD	Prof	PSOM - Pediatrics		Preceptor	6	11	10	0	1	
Lawrence F Brass	MD	Prof	PSOM - Hematology/Oncology		Preceptor	2	1	1	1	16	
Martin Peter Carroll	MD	Assoc Prof	PSOM - Hematology/Oncology		Preceptor	0	1	1	1	7	
Youhai H Chen	MD, PhD	Prof	PSOM - Pathology & Laboratory Medicine		Preceptor	1	7	4	3	30	
Stella T Chou	MD	Assoc Prof	PSOM - Pediatrics		Preceptor	0	0	0	0	0	
Douglas B Cines	MD	Prof	PSOM - Pathology & Laboratory Medicine		Preceptor	0	0	0	0	6	
Paul J Gadue	PhD	Assoc Prof	PSOM - Pathology & Laboratory Medicine		Preceptor	3	3	2	0	0	
Saar I Gill	MD, PhD	Asst Prof	PSOM - Hematology/Oncology		Preceptor	2	0	0	0	1	
Brian Gregory	PhD	Assoc Prof	SAS - Biology		Preceptor	2	5	5	0	0	
Mark L Kahn	MD	Prof	PSOM - Cardiovascular Medicine		Preceptor	3	9	9	2	16	
Peter S Klein	MD, PhD	Prof	PSOM - Hematology/Oncology		Preceptor	2	11	11	1	3	
Peter Kurre	MD	Prof	PSOM - Pediatrics		Preceptor	0	0	0	0	0	
Frank Lee	MD, PhD	Assoc Prof	PSOM - Pathology & Laboratory Medicine		Preceptor	0	1	1	0	8	
Ivan P Maillard	MD, PhD	Prof	PSOM - Hematology/Oncology		Preceptor	0	0	0	0	0	
Ronen Marmorstein	PhD	Prof	PSOM - Biochemistry and Biophysics		Preceptor	3	20	18	1	6	
Paula M Oliver	PhD	Assoc Prof	PSOM - Pathology & Laboratory Medicine		Preceptor	1	6	6	0	0	
Vikram R Paralkar	MD	Asst Prof	PSOM - Hematology/Oncology		Preceptor	0	0	0	0	0	
Warren S Pear	MD, PhD	Prof	PSOM - Pathology & Laboratory Medicine		Preceptor	1	6	5	1	17	
Mortimer Poncz	MD	Prof	PSOM - Pediatrics		Preceptor	0	7	6	0	2	
Arjun Raj	PhD	Assoc Prof	SEAS - Bioengineering		Preceptor	9	6	4	0	0	
Stefano B Rivella	PhD	Prof	PSOM - Pediatrics		Preceptor	1	0	0	0	0	
Nancy A Speck	PhD	Prof	PSOM - Cell and Development Biology		Preceptor	1	3	3	0	7	
Kai Tan	PhD	Assoc Prof	PSOM - Pediatrics		Preceptor	0	0	0	0	0	
Andrei Thomas-Tikhonenko	PhD	Prof	PSOM - Pathology & Laboratory Medicine		Preceptor	3	1	1	0	0	
Wei Tong	PhD	Assoc Prof	PSOM - Pediatrics		PI	1	2	2	0	0	
Golnaz Vahedi	PhD	Asst Prof	PSOM - Genetics		Preceptor	1	0	0	0	2	
Kenneth S Zaret	PhD	Prof	PSOM - Cell and Development Biology		Preceptor	4	3	3	2	8	

Table 2 | Predocs named | Postdocs named

Table 3 - sample

Table 3: Federal Institutional Research Training Grant and Related Support Available to Participating Faculty Members

Grant Title	Award Number	Project Period	PD/PI	Number of Pre-doc Positions	Number of Post-doc Positions	Number of Short-Term Positions	Number of Participating Faculty (Number Overlapping)	Names of Overlapping Faculty
CHOP Institutional Training in Pediatric Research	5-T32-HD-043021-14	05/2018-04/2019	Joseph St Geme	0	4	0	47 (4)	Blobel Henao-Mejia Poncz Tan
Training Program/Rheumatic Diseases	5-T32-AR-007442-30	04/2013-04/2019	Peter A Merkel	3	5	0	38 (2)	Bassing Chen
Dermatology Research Training Grant	5-T32-AR-007465-35	04/2014-04/2019	Sarah E Millar	2	4	3	41 (2)	Kahn Raj
Diversity Action Plan at the University of Pennsylvania (Penn) Genomics Program (DAPPG)	1-R25-HG-010323-01A1	09/2018-06/2023	Maja Bucan	0	0	7	24 (1)	Raj
Medical Scientist Training Program	2-T32-GM-007170-44	06/2018-06/2023	Lawrence F Brass	44	0	0	151 (11)	Bassing Zaret Kahn Pear Henao-Mejia Raj Klein Vahedi Speck Berger Blobel
VMD-PhD Training in Infectious Disease-Related Research	2-T32-AI-070077-11	06/2018-06/2023	Michael Atchison	4	0	0	32 (2)	Anguera Vahedi
Training in Tumor Virology	5-T32-CA-115299-12	08/2017-08/2022	Erle S Robertson	2	4	0	21 (1)	Marmorstein
Cancer Clinical Epidemiology Training	5-T32-CA-009679-27	07/2017-06/2022	Chyke A Doubeni	0	5	0	29 (1)	Carroll
Training Program in Cardiovascular Biology and Medicine	5-T32-HL-007843-22	06/2017-06/2022	Thomas P Cappola	0	7	0	29 (2)	Kahn Pear
Translational Research Training Program in Environmental Health Sciences	5-T32-ES-019851-07	06/2017-06/2022	Trevor M Penning	3	4	0	46 (1)	Berger
Training Program in	5-T32-MH-014654-41	07/2016-	Wade H Berrettini	0	4	0	26 (1)	Klein

Table 4 - sample

Table 4: Research Support of Participating Faculty Members

Faculty Member	Funding Source	Grant Number	Role on Project	Grant Title	Project Period	Current Year Direct Costs
Abrams, Charles	NIH	5-P01-HL-120846-05	PI	Platelet signals and their interface with external environment	07/2018-06/2019	$743,143
Abrams, Charles	NIH	5-P01-HL-040387-30	Investigator	Regulation of Platelet and Endothelial Cell Function	05/2018-04/2019	$275,038
Anguera, Montserrat	NIH	1-R01-AI-134834-01A1	PI	Gene regulation from the inactive X in activated B cells	06/2018-05/2019	$314,945
Anguera, Montserrat	Other Fed	W81XWH1810635	PI	Role for abnormal gene expression from the inactive X in female-biased lupus disease	09/2018-09/2021	$322,817
Bassing, Craig	None					
Bennett, Joel	NIH	5-P01-HL-120846-05	Investigator	Platelet signals and their interface with external environment	07/2018-06/2019	$351,380
Bennett, Joel	NIH	5-P01-HL-040387-30	PI	Regulation of Platelet and Endothelial Cell Function	05/2018-04/2019	$590,992
Berger, Shelley	Fdn	N/A	PI	Maintaining a stable epigenome during aging	04/2017-04/2019	$60,000
Berger, Shelley		EpiVario, LLC	PI	Small molecule inhibitors of catalytic ACSS2 (ACSS2i) for use in animal models of PTSD	10/2018-09/2019	$117,180
Berger, Shelley	NIH	5-R01-AG-055570-02	PI	Epigenetic regulation of extreme longevity differences in ant castes	06/2018-05/2019	$244,681
Berger, Shelley	NIH	2-P01-AG-031862-11	PI	Epigenetics of Aging and Age-Associated Diseases	08/2018-06/2019	$886,828
Berger, Shelley	Fdn	N/A	PI	Epigenetic Dysfunction in Human Alzheimer's Disease	09/2018-08/2019	$175,000
Bernt, Kathrin	None					
Blobel, Gerd	None					
Brass, Lawrence	NIH	5-P01-HL-120846-05	Investigator	Platelet signals and their interface with external environment	07/2018-06/2019	$260,000
Brass, Lawrence	NIH	5-R01-HL-103419-09	Investigator	Blood Systems Biology	04/2018-03/2019	$67,963
Brass, Lawrence	NIH	5-P01-HL-040387-30	Investigator	Regulation of Platelet and	05/2018-04/2019	$292,038

Sample Notes on Tables

Pear (2 predoc, 8 postdocs)

Meeting with PI/admins for T32

Table 1 part 1 – grad groups and predocs

- Grad groups to include:
  - BMB
  - CAMB
  - GCB
  - IGG
  - PGG
- Use data in subsequent tabs to verify data from trainers.
- Aislinn to populated last column with specific trainee information.
- Participating Faculty column may not add up to total number of trainers, so it may be useful to add an asterisk explaining that not all trainers have appointments in graduate groups listed.
- Aislinn added Celeste Simon

Table 1 part II – departments and postdocs

- Do not need to include all departments listed – suggested ones are highlighted.
  - Berger moved to Cell and Development Biology
  - CHOP/Pediatrics
  - John Wherry in Pharmacology?
  - Combine Department of Med (ask Mike Parmacek about how many tenure track fac)
    - Heme/Onc
    - Translational
    - Pulmonary
- Can include trainers' secondary appointment to limit the number of depts.
- Combine all Vet school departments
- Contact Dave Taylor
- Aislinn to export postdocs from BPP database from each department listed – uploaded to Box

xTRA

- Developed by NIH in order to collect data to create data tables required for T32s, replacing current systems for creating datatables.
- Initially, the plan was to mandate use of xTRACT for all tables starting in early 2020, but as of May 21, xTRACT will only be required for RPPRs starting in October 2019. More details can be found in NOT-OD-19-108.
- Focus of developers has been table 8, as this is the only table required for RPPRs. Many issues have been addressed, but there are still some limitations, so beginning work on these early is highly recommended.
- xTRACT requires data to be compiled into a Research Training Datasets (RTDs), which are used to populate the tables, which are created as PDFs.
- Token in xTRACT tables to prevent institution-createdtables.
- Access to ERA Commons is required to work in xTRACT, but NIH encourages gaining familiarity.

Future Goals

- Refine data queries to maximize use of existing source data and create complete tables
- Where source data is incomplete or non-existent, develop supplemental systems to collect and present this data
- Adapt processes to xTRACT, NIH's tool for creating aspects of the data tables, once NIH issues new release

Future Goals

- Expand repository of examples of successful proposal components, organized by discipline, NIH institute, and training type
- Anticipate which grants will go in for renewal and offer proactive support
- Provide admin. support for processes such as collecting biosketches and grant assembly & high level support for drafting and editing grant text for PIs

Summary/Contacts/Questions?

- We welcome your input as we ramp up our support for T32 proposals!
- www.med.upenn.edu/training-grants-fellowships/
- Aislinn: aislinnw@pennmedicine.upenn.edu
- Judy: jajackso@pennmedicine.upenn.edu

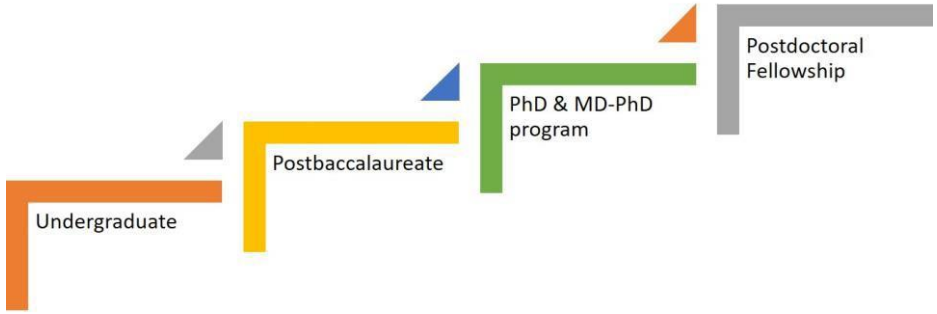
T32 Best Practices

- **Diversity** (Arnaldo Diaz, PhD)
- **How to track outcomes and success** (Maja Bucan, PhD)
- **How to add excitement, innovation to training programs in a way that influences reviewers** (Kelly Jordan-Sciutto, PhD)

April 24, 2019

Office of Research & Diversity Training (ORDT)

Training & Support Programs



Enhancing Diversity in Training Programs

"Successful recruitment of individuals from underrepresented groups requires active involvement of the program director, the training grant faculty, and institutional officials. Thus, centralized institutional efforts alone will not satisfy the requirement to recruit individuals from underrepresented groups to the trainingprogram."

https://www.nigms.nih.gov/Training/Diversity/

Targeted Recruitment Activities

Publicize the Program

Establish Partnerships

Research Training Programs

Summer Undergraduate Internship Program (SUIP)

- Funded by an NHLBI R25 Grant, Genentech, Pfizer, the Simmons Foundation, and BGS
- ~35 URMs and 4 – 6 non-URMs

Post-Baccalaureate Research Education Preparation Program (PREP)

- Funded by an NIGMS R25 grant and BGS
- 7 – 10 URMs post-baccalaureate scholars

For more information about our training programs, please contact:

Arnaldo Diaz, PhD (diaza@pennmedicine.upenn.edu)

Aislinn Wallace (aislinnw@pennmedicine.upenn.edu)

Recruitment by Training Faculty, Staff, and Students at National Symposia

ABRCMS (Annual Biomedical Research Conference for Minority Students) http://www.abrcms.org/

- 4-6 faculty members, grad students
- 2018 Conference Total Attendance: 4,650

SACNAS (Society for Advancement of Chicanos and Native Americans in Science) https://www.sacnas.org/

- 2-3 faculty members, grad students
- 2018 Conference Total Attendance: 4,213

Leadership Alliance National Symposium
https://www.theleadershipalliance.org/

- 2 faculty members, grad students
- Conference Total Attendance: 522 (Students - 391, Professionals - 131)

Emerging Researchers National Conference in STEM
https://emerging-researchers.org/

Recruitment Trips to Institutions with research-oriented programs

NIGMS Funded Programs

Maximizing Access to Research Careers (MARC)

Research Training Initiative for Scientific Enhancement (RISE) Program

Postbaccalaureate Research Education Program (PREP) (R25)

Bridges to the Doctorate Program (R25

Others Programs

McNair Scholars Program

Penn State Millennium Scholars

Program for Research Initiatives in Science and Math (PRISM)

Meyerhoff Scholars Program - UMBC

Penn Honors Diversity (PHD) Symposium
September 29 – October 1, 2016

GOAL: Broaden Penn's Outreach to prospective PhD students from Underrepresented Groups.

Brought to campus 90 academically accomplished sophomores & juniors (**37 BGS-focused**) & their program advisors, from 35 colleges and universities in the Mid-Atlantic regionto:

- Learn about PhD education & training at Penn
- Network with faculty, postdocs & graduate students
- Present their work in a poster session
- Attend workshops (admissions, funding, student life)

PENNVIEW POSTDOCTORAL DIVERSITY INITIATIVE

SEPTEMBER 2 5, 2019

HOSTED BYPENNVIEW

The PennVIEW Postdoctoral Diversity Initiative is an opportunity to expose graduate doctoral candidates in the Biomedical Sciences to postdoctoral research at the University of Pennsylvania. The purpose of this initiative is to provide candidates from the Mid-Atlantic region with a first-hand look at Penn and to consider whether a postdoctoral position at Penn would be a good fit for them. Our goal is to match trainees with excellent mentors at the School of Medicine.

Stay tuned for your chance to apply! The application will be available mid-May, with an anticipated deadline of July 15th.

Program Evaluation

T32 Best Practices Session

Skip Brass

1/12/21

T32 program evaluation - key points to include

- Identifying goals
- Defining success
- Collecting data
- Assessing impact of interventions
- Feeding back the results to improve the program

Identifying goals

- MSTP T32 renewal (2017): "our primary goal continues to be to identify, train and mentor a diverse group of outstanding men and women who will become the leaders of biomedical human and veterinary research, as well as teachers, clinicians and scholars."

Defining success

- For the program and the trainees
- Rubrics…

MSTP Rubric

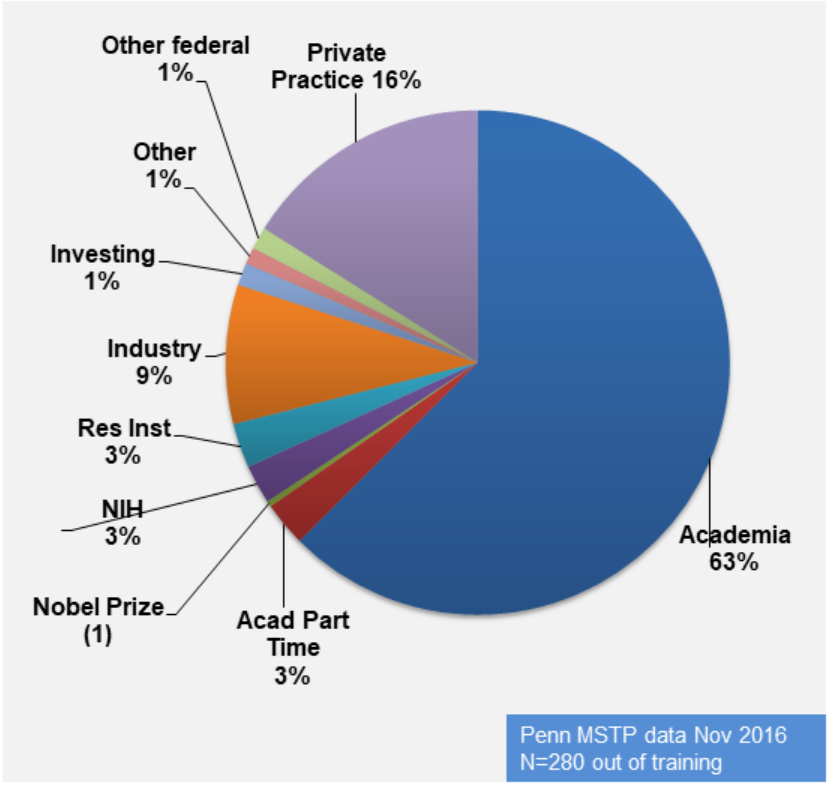
MSTP T32 Brass	Short term (immediately after graduation)	Long term (≥10 years after graduation)
Preferred outcomes	•Successful match into a residency program committed to physician-scientist careers. • Decision to forego residency after medical school for physician-scientist employment in a) fast track postdoc, b) biotech/industry or c) government.	• Career in academia, industry, research institute, NIH, science-related government posts or other positions that make regular use of MD and PhD training. • Doing research or guiding research by others. • Obtaining research funding from the NIH and/or other sources. • Publishing regularly in the biomedical literature (broadly defined). • Satisfied with career and the training that led up to it.
Acceptable outcome	• Successful match into a residency program in the field of their choice.	• Working in academia, but not doing research. • Working in other settings in which physician-scientist training is relevant but not critical.
Undesired outcome	• Abandoning science and medicine for a career related to neither. • Failing to complete PhD graduation requirements (e.g. thesis and/or publications) before graduating from medical school.	• Private clinical practice. • Dissatisfied with career and/or training. • Wish they had skipped PhD and just gone to medical school.

*Red stuff can only come from survey

Collecting outcomes data

- Short term
- Long term
  - Where are they working?
  - What are they doing?
  - How well is it going?

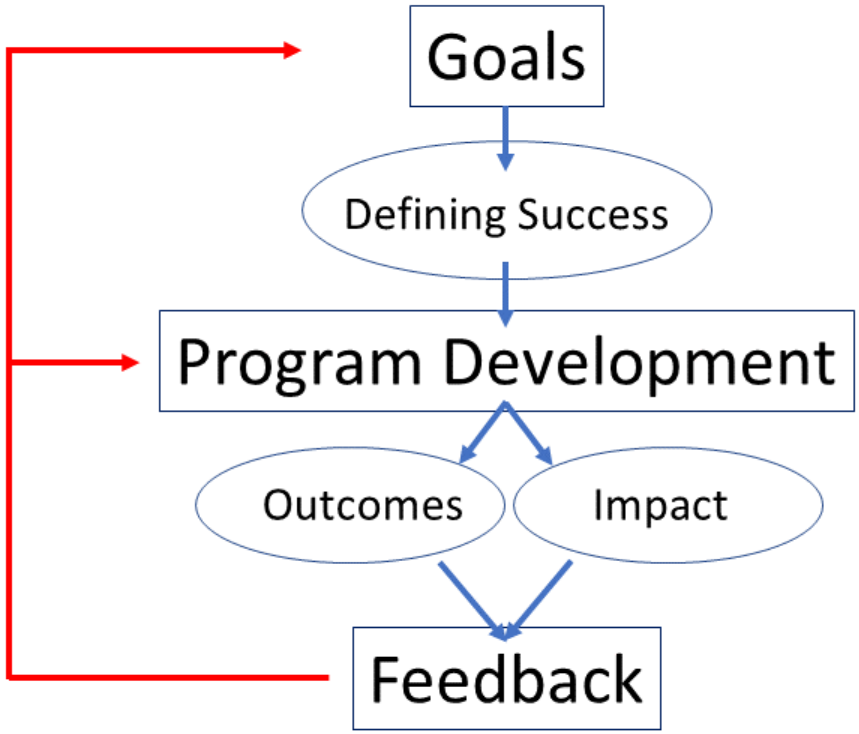
Where people work is still a useful surrogate marker, but now close attention is being paid to what they are doing.



Assessing impact of interventions

- Not the same as “course reviews”
- Showing that a particular activity has (or has not) met its goals
- Feeding back the results to improve the activity

The role of physician-scientists in biotech	Increased	Stayed the same	Decreased	Not covered
The role of physician-scientists in pharma	Increased	Stayed the same	Decreased	Not covered
Doing translational research in academia	Increased	Stayed the same	Decreased	Not covered
Differences between clinical trials in adults and children	Increased	Stayed the same	Decreased	Not covered
Starting a new company	Increased	Stayed the same	Decreased	Not covered
Vaccine development	Increased	Stayed the same	Decreased	Not covered
The role of the FDA	Increased	Stayed the same	Decreased	Not covered


Goals
Defining Success
Program Development
Outcomes
Impact
Feedback

Biomedical Postdoctoral Program

Material that BPP can contribute to your T32 application:

- Description of the BPP program (orientations, workshops);
- Number, demographics and funding report for current postdocs in each department or for a mentor or a group of mentors-trainers;
- Number of and outcomes for former (Yrs 2008-2018) postdocs in each department or for each postdoctoral mentor (*Academic Analytics* databases – initially covered 75%, with updates 85% or former postdocs);
- Document on RCR training (list of scheduled meetings);
- Document of Diversity and Inclusion Initiatives for postdocs;
- Letter of support (BPP director or EVDSCO)

Training in RCR

RCR training is mandatory and continual for graduate students, postdocs and medical students.

- On-line instructions
- **BPP monthly workshops based on Case studies**
- RCR focused lab and T32 meetings

NIH's Recommended topics in RCR (2019)

- Conflict of interest
- Policies on research with humans and animals and safe laboratory practices
- Mentor/trainee responsibilities and relationships
- Peer review
- Data acquisition, management, sharing and ownership
- Collaborative research, including with industry
- Responsible authorship and publication
- Research misconduct and policies for handling it
- The scientist as a member of society, contemporary ethical issues in research, and environmental and societal impacts of research

Scientific rigor and reproducibility

Biomedical Postdoctoral Program

Document of Diversity and Inclusion Initiatives

- PennVIEW
- PennPORT
- Biomedical Postdoctoral Council - Diversity committee
- Action for Cultural Transformation (ACT)

  Committee for Combatting Racial Inequity (CRIC)
- The Provost' Postdoctoral Fellowship Program
- Intersections Science Fellows Symposium

PENNVIEW POSTDOCTORAL DIVERSITY INITIATIVE

We are glad to report that we will now host PennVIEW 2021 virtually on June 24th-25th, 2021!!

HOSTED BY PENNVIEW

The PennVIEW Postdoctoral Diversity Initiative is an opportunity to expose graduate doctoral candidates in the Biomedical Sciences to postdoctoral research at the University of Pennsylvania. The purpose of this initiative is to provide candidates with a first-hand look at Penn and to consider whether a postdoctoral position at Penn would be a good fit for them. Our goal is to match trainees with excellent mentors at the School of Medicine.

In anticipation for the virtual event, we look forward to seeing you on the "Meet and Greet" call in mid-June!

SPONSORS:
Office of Research and Diversity Training
Biomedical Postdoctoral Programs
Biomedical Postdoctoral Council

www.med.upenn.edu/postdoc

contact: pennview@pennmedicine.upenn.edu

Perelman School of Medicine
University of Pennsylvania

BPP RCR WORKSHOPS – TOPICS AND SCHEDULE FOR 2021:

Date	Speaker	Topic
01/20/2021	Drs. Therese Richmond & Connie Ulrich	The Competing Demands of Patient Privacy and Clinical Research
01/27/2021	Drs. Diego Contreras & David Irwin	Research misconduct and policies for handling it
2/22/2021	Drs. Erika Holzbaur and David Margolis	Conflict of Interest
2/23/2021	Drs. Saar Gill and Yana Kamberov	Data acquisition
03/03/2021	Drs. Oliver A. Garden & Ivan P. Maillard	Policies regarding live vertebrae animals in research and safe laboratory practices
03/19/2021	Drs. James Gee & Allan Pack	Collaborations and team science
04/12/2021	Drs. Diaz-Arrastia and Koumenis	Scientific rigor and reproducibility
05/05/2021	Drs. Sanjeev Chawla and Kavindra Nath	Authorship and publication
09/08/2021	Drs. Eileen Lake and Karen Lasater	Peer Review for Publication: Ethical Considerations
10/04/2021	Drs. Malay Haldar and Jason Moore	Authorship and publication
11/04/2021	Drs. George Demiris and Matthew McHugh	Collaborations and team science

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We need faculty for RCR sessions in June, July August and December