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Washington University Neurosciences T32 Training Program

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Introduction

Congratulations on your selection to the T32 Neurosciences Training Grant. In existence since 1982, this program aims to support trainees conducting basic laboratory, translational, or clinical research related to diseases of the nervous system across the lifespan. A major goal of the program is to provide an appropriate period of training, typically two years, to allow trainees to become successful K-award and other career development award applicants, ultimately successful R01 applicants, and transition to a variety of areas of research in academic Neurology.

The T32 Steering Committee consists of the following individuals:

- David M. Holtzman, M.D., Program Director
- David H. Gutmann, M.D., Ph.D., Program Co-Director
- Anne Cross, M.D.
- Conrad Weihl, M.D., Ph.D.
- Jin-Moo Lee, M.D., Ph.D.
- Rafael Galindo, M.D., Ph.D.
- Michael Wong, M.D., Ph.D.

It is your responsibility to read through this manual in detail, and to meet all of the requirements outlined herein. Questions should be directed to Dr. David Gutmann (gutmannd@wustl.edu).
Program Requirements

1. **Award Period**: The period of the award is for two years starting on July 1st.

2. **Protected Time Commitment** (unless otherwise arranged in advance): 75% effort

3. **Agreement to Payback Rules**: All trainees will be asked to sign an agreement to comply with the rules regarding payback, which is easily accomplished in most cases as described in the NRSA Funding Policy supplement and the NIH Grants Policy statement.

4. **Responsible Conduct of Research (RCR)**: All trainees must enroll in the WU ICTS RCR course (http://icts.wustl.edu/icts-researchers/icts-cores/find-services/by-core-name/center-for-clinical-and-research-ethics) and must comply with RCR Guidelines (See https://oir.nih.gov/sourcebook/ethical-conduct/responsible-conduct-research-training) for the duration of the program. Trainees are required to review the four video modules regarding scientific rigor and reproducibility available on the National Institutes of Health (NIH) website (http://www.nih.gov/research-training/rigor-reproducibility/training), as well as to familiarize themselves with NIH policies and guidelines posted on the NIH website (http://grants.nih.gov/reproducibility/index.htm). In addition, formal instruction in the responsible conduct of research (RCR) is provided through two programs: (1) The Program for Ethical and Responsible Conduct in Science and Scholarship [PERCSS] and (2) Instruction in the Responsible Conduct of Research.

5. **T32 training program instruction**: All trainees will be expected to create an individualized training program consisting of relevant courses, seminars, workshops, journal clubs, and/or one-on-one instruction to ensure that they develop needed background, specialized technical skills, and communication skills in preparation for an independent research career.
   a. **Training in Neuroscience Research**: All trainees are required to join one of the seven Hope Center Research Groups (https://hopecenter.wustl.edu), and to actively participate in their monthly meetings.
   b. **Tools and Technologies Workshop Series**: All trainees are required to attend the monthly series, specifically designed to meet the unique needs of our physician-scientist trainees.
   c. **Hope Center Retreat and Hope Center Weekly Miniseries Program**: All trainees should plan on attending the Hope Center Retreat, as well as participate in relevant weekly miniseries.
   d. **Training in grant writing**: Each trainee is encouraged to avail themselves of grant writing workshops sponsored by the Office of Postdoctoral Affairs (OPA) and the Washington University Institute for Clinical and Translational Sciences (ICTS). As such, there is a
Grant Writing Center at Washington University specifically designed to aid trainees as a supplement to the guidance provided by their individual mentors.

6. **Mentorship Meetings**: All trainees must meet with their Primary Mentor at least twice each month.

7. **Individual Career Development Action Plan**: All trainees must submit a 1-year and 5-year individual development plan to their primary mentor and David Gutmann by September 15 each year. In addition, each mentee should complete an individualized career development action plan (CDAP) to be reviewed at least yearly with their research mentor.

8. **T32 Progress Meetings**: All trainees will present their research and training plan to the Department’s T32 administrative committee at two T32 progress meetings during each year (Fall and Spring).

9. **NIH Progress Report**: All trainees will need to submit a progress report on their research and training annually by January 15.

10. **Program Evaluation**: At the end of the award period, all trainees will be asked to submit an evaluation of their mentor(s) and the T32 program.

11. **T32 Grant Citations**: All presentations and publications related to research funded by the T32 must cite the grant (NS007205).

12. **Post-Award Follow Up**: All former T32 trainees will be contacted annually for 15 years after completing the program and will be expected to provide an update on current institution, position, and grant support in compliance with T32 requirements for outcome data. When you leave Washington University, please send Dr. Gutmann your email contact information.
Advice for Trainees

• **Meet with your primary mentor at least biweekly**
  o Regularly review your research progress and project design.
  o Explicitly discuss your research plans and goals for mentored and independent funding.
  o Jointly establish a time line for your career development.
  o What portions of your work you can take with you to launch your independent research career?

• **Establish a mentorship committee early in your training and meet with them at least twice per year to review plans, progress, career goals, and timeline**
  o In conjunction with your primary mentor, identify 1-2 seasoned secondary mentors with complementary skills. Consider a mentor from outside the department or outside the institution.
  o Some trainees may want to also invite a more junior faculty member who is currently on an individual K-award in a related area.
  o Review your research progress and goals. Use this as an opportunity to refocus or redirect your project(s). Propose where and when you plan to publish your research.

• **Meet with your program director and/or division chief regularly (twice per year)**
  o They can help to ensure you make good progress in training and help you plan your transition to an independent junior faculty position.

• **Create an individual career development action plan (CDAP)**

• Consider balancing a safer short-term project that might yield abstracts and publications in the first year with more risky longer term project(s) that may yield more transformative findings down the line. Aim to publish findings along the way. Having a few projects going helps to ensure that something is working, and that you generate data for abstracts, publications, and grants. This must be balanced against the potentially competing imperative to bring work to a logical completion/publication point.

• **Attend a mix of clinical and research conferences throughout your training** to maintain your clinical skills and hone your research interests. Depending on your career path and project, these might include departmental Grand Rounds, Hope Center seminars, and the Neuroscience seminar series.

• **Use clinical experiences/knowledge to develop clinically relevant research questions**
  o Work with your primary mentor/division chief to craft a plan to meet clinical obligations in a way that complements your research focus.

• **Attend at least one national or international research meeting each year of training**
- This provides an excellent venue to explore the latest research in your area of interest and network with peers and experts in your field.
- Attend **career development activities** offered at the meeting.

- **Present your research whenever possible**
  - Every presentation means more experience, gets your name out there as an expert in your field, and is an opportunity to establish new collaborations with others in the field, so actively seek out opportunities to present. Present at lab meetings; departmental or divisional meetings; regional, national, or international conferences. It is important to learn how to frame your studies in a clinically-meaningful manner.

- **Submit your work for presentation at one or more national/international research meetings each year**
  - Discuss appropriate meeting opportunities with your primary mentor and investigate abstract submission deadlines so you can plan accordingly. Enter these dates on your CDAP.
  - Although availability of travel funding varies over time, your mentor can help you identify and apply for travel money.

- **Aim to publish your research in high-impact, peer-reviewed journals**

- Consider writing relevant reviews and book chapters if the opportunity arises, especially early in your training as a means of mastering the literature in a new field. However, it is important not to let such assignments detract from your primary research project - **it is critical to maintain your focus.**

- **You need to work on obtaining further grant support and initiate a job search earlier than you think.** The expectation of the T32 is that you will obtain K-Award funding.
  - Discuss funding options with your mentor early—consider an institutional KL2 or individual K23 (clinical) or K08 (bench) training grant. Ph.D. trainees should consider analogous K and NRSA mechanisms.
  - Investigate grant requirements and timetables early.
  - Talk to past award recipients in your area or department.
  - Use preliminary data from your T32 project—don’t plan to wait until project is completed.

- **Consider relevant course work**
  - Depending on available funds, time, and prior training, this might include a **course or workshop on grant writing**, or for those doing clinical research, completion of a **Certificate in Clinical Investigation** (http://crtc.wustl.edu/degrees/certificate-program.html), or obtaining an advanced degree, such as the **Master of Science in Clinical Investigation** (MSCI, http://crtc.wustl.edu/degrees/msci.html).
Establishing a Mentoring Relationship

Postdoctoral training is an integral component of the preparation of scientists for career advancement as scientific professionals. This training is conducted in an apprenticeship mode where she/he works under the supervision of an investigator who is qualified to fulfill the responsibilities of a mentor. The postdoctoral appointee may undertake scholarship, research, service, and teaching activities that together provide a training experience essential for career advancement.

Importance of Mentoring in Postdoctoral Training

Effective mentoring is critical for postdoctoral training and requires that the primary mentor dedicate substantial time to ensure personal and professional development. A good mentor builds a relationship with the trainee that is characterized by mutual respect and understanding. Attributes of a good mentor include being approachable, available, and willing to share his/her knowledge; listening effectively; providing encouragement and constructive criticism; and offering expertise and guidance.

Trainee Commitments

- Assume the primary responsibility for the development of my own career
- Develop a mutually-defined research project with my mentor that includes well-defined goals and timelines
- Perform my research activities conscientiously, maintain good research records, and catalog and maintain all tangible research materials that result from the research project
- Respect all ethical standards when conducting my research including compliance with all institutional and federal regulations as they relate to responsible conduct in research, privacy and human subjects research, animal care and use, laboratory safety, and use of radioisotopes
- Show respect for and work collegially with my coworkers, support staff, and other individuals with whom I interact
- Endeavor to assume progressive responsibility and management of my research project(s) as it matures
- Seek regular feedback on my performance and ask for a formal evaluation at least annually
- Have open and timely discussions with my mentor concerning the dissemination of research findings and the distribution of research materials to third parties
- Stay abreast of the latest developments in my specialized field through reading the literature, regular attendance at relevant seminar series, and attendance at scientific meetings.
• Actively seek professional development opportunities outside the laboratory

At the end of my appointment, in accordance with institutional policy, I will leave behind all original notebooks, computerized files, and tangible research materials so that other individuals can carry on related research. I will also work with my mentor to submit the research results for publication in a timely manner. I can make copies of my notebooks and computerized files, and have access to tangible research materials which I helped to generate during my postdoctoral appointment according to institutional policy.

**Mentor Commitments**

• The postdoctoral period is a time of advanced training intended to develop the skills needed to promote the career of the postdoctoral appointee

• Ensure that a mutually agreed upon set of expectations and goals are in place at the outset of the postdoctoral training period

• Work with the postdoctoral appointee to create and update their individual career development action plan

• Strive to maintain a relationship with the postdoctoral appointee that is based on trust and mutual respect through open communication and annual formal performance reviews

• Promote all ethical standards for conducting research including compliance with all institutional and federal regulations as they relate to responsible conduct in research, privacy and human subjects research, animal care and use, laboratory safety, and use of radioisotopes

• Ensure that the postdoctoral appointee has sufficient opportunities to acquire the skills necessary to become an expert in an agreed upon area of investigation

• Provide the appointee with the required guidance and mentoring, and will seek the assistance of other faculty and departmental/institutional resources when necessary

• Provide a training environment that is suited to the individual needs of the postdoctoral appointee in order to ensure his/her personal and professional growth

• Encourage a progressive increase in the level of responsibility and independence to facilitate the transition to a fully independent career

• Ensure that the research performed by a postdoctoral appointee is submitted for publication in a timely manner and that she/he receives appropriate credit for the work she/he performs

• Commit to being a supportive mentor to postdoctoral appointees as they transition the next stage of their career and to the extent possible, throughout their professional life
Creating an Individualized Career Development Action Plan

All T32 trainees will be required to construct an Individualized Career Development Action Plan (CDAP) and submit this document to Dr. David Gutmann by September 15 of each year. This form should be completed with your research mentor.

Why create an individualized career development action plan?

The postdoctoral years and first few years of academic independence are crucial to establishing the foundation for the rest of your professional career. Scholarship must be a top priority during this critical time, so you need to identify your professional goals and gather the resources you will need to pursue these goals early. One of the most important things you can do now to set your research on a clear course is to construct a thoughtfully conceived but flexible career development plan. Postdoctoral scholars who create such a plan with their mentors and put this in writing with stated productivity expectations have been shown to have greater quantifiable productivity—they submit manuscripts to peer-reviewed journals at a 23% higher rate, first author manuscripts at a 30% higher rate, and grant proposals at a 25% higher rate than their peers without written plans or whose plans include no advisor component. Having a written plan may also help you in applying for career development awards and jobs since you will already have articulated your goals. The NIH is now mandating CDAPs for all predoctoral and postdoctoral trainees supported by any NIH grant and will begin to expect that institutions report on these plans.

The CDAP is a dynamic, iterative process that can be used by you and your mentors to monitor your progress and identify and address barriers. Thus it should include a timeline with measurable and specific annual and long-term goals and it should be reviewed and updated yearly.

Considerations in creating individualized career development action plan

There is no one right way to put together a CDAP. It needs to take into account your individual situation. The major considerations should be your answers to the following two questions: Where do you want to be in 5 years? What do you need to do to get there and be successful? The answer to the latter question might take into account needs related to education, clinical practice, research, mentors, networking, infrastructure, or skills in leadership, management, communication, etc. There are many people who you might consult for input on your CDAP. Obviously, there are your scientific and program mentors and advisory committee, if you have one. Fellowship directors, division head, and department chairs are other resources. Consult colleagues or junior faculty who were in your position not too long ago. And importantly, remember your spouse/significant other/family, who might have priorities for your family over the next few years that conflict with your short-term career goals. Finally, how will you measure your success? What are the expected outcomes and milestones you can use along the way?
Career goals

What are your career goals? Goals should be specific, achievable, and measurable. Avoid vague “create world peace” goals like “Become a good doctor” or “Be a successful researcher.”

Here are some categories of goals:

1) Research: develop and implement a project, obtain IRB approval, create data collection tool, collect data, analyze data, write abstract, present data at a meeting, write manuscript, write grant
2) Education: become proficient in biostatistics, epidemiology, etc.
3) Practicum experiences: serve on committees or in an administrative role
4) Leadership: lead seminars or courses, write books, take on a clinical leadership role
5) Management: generate budgets, performance appraisals
6) Communication: improve writing, public speaking, teaching, media relations
7) Institutional career advancement: obtain a faculty position, obtain a promotion

Being specific about your goals requires educating yourself and obtaining advice from your mentors. If one of your goals is to obtain a faculty position, you need to first consider what type of position might be a good fit for you (mentors, collaborators, opportunities, location) and learn about how faculty are selected and what the timeline is. If one of your goals is promotion, you need to first learn what the promotion criteria are, then consider the required components of the promotion packet (CV, letters, manuscripts, national reputation, etc.). For the goal of grant submission, a first step is to consider which funding mechanism is appropriate and what the specific requirements of the funding agency are. Then your objectives would include identifying collaborators, obtaining letters, putting together a budget, writing the specific components of the grant (candidate, career development plan, specific aims, research plan), and getting all the paperwork in to your grants office before the deadline. As a last example if you have a Board certification exam in the near future, one of your goals might be to score in the top 10% on your Board exam. First you need to find out when the exam is and what will be covered on it. How you will achieve your goal might then include taking a Board review course, forming a study group, reading one textbook chapter each week, and taking one practice test each month.

Individualized career development action plan construction

There is no one right format for a CDAP - this is for your and your mentors’ use so should be in whatever format is most useful to you. But in general, you will want to address both short-term (1 year) and longer-term (5 year) goals. Again, be specific. Rather than list as an objective, “present data at a national meeting,” specify which meeting. This way you can include the abstract submission deadline and meeting date in order to customize your timeline. Bulleted, action-oriented, short phrases are best. You don’t need excessive amounts of narrative. Make sure to order your goals so the highest priority ones are first. Career development should be linear. A 3-year timeline or chart created in Excel can be extremely useful for providing a visual of when things will occur relative to each other.

One of the most common flaws people make in CDAPs is being overly ambitious and having an unrealistic timeline. This is where the Excel timeline/chart you create comes in handy—if you see 3
major projects, 3 courses, clinic responsibilities, and a Board exam competing for your time in the same semester, chances are you are being unrealistic. Another is to have too much coursework or coursework scheduled at the wrong time relative to your research. Yet another is being too diffuse—the individual who wants to do it all and then some.

For physician-scientists, it is critically important to consider how you will balance your clinical and research responsibilities as well as how your research objectives will dovetail with your clinical interests.

Setting goals and expectations

Both the mentor and the mentee should start by discussing their expectations for the mentoring relationship. A mentor should ask his or her mentee about what the mentee’s goals are and what he or she is looking for from the relationship. Mentees should be clear about what they hope to get out of the mentoring relationship, particularly with respect to goals, which will form the foundation of their work with the mentor. Issues like frequency of meetings, availability, and modes of contact should be agreed upon from the start. Goals, expectations, and plans should be documented on the CDAP forms.

The individualized career development action plan:

1) Career goals: succinctly state your long-term career goals as well as your goals for the next 5 years.

   Categories might include:
   a. Research
   b. Clinical
   c. Educational
   d. Professional
   e. Personal

2) Career objectives: for each goal, specify 2-5 objectives that, when met, will result in you achieving your career goal.

   a. Educational experiences: for each career goal, indicate any educational activities you will engage in to assist you in meeting that goal (e.g., courses, seminars, 1-on-1 instruction)
   b. Research projects: for each career goal, indicate any research activities that will assist you in meeting that goal
   c. Products: for each objective, indicate what individual products (e.g., degrees, publications, presentations, grants) are expected

3) Timeline: construct a 3-year timeline displaying the individual goals, objectives, educational activities, research activities, and products
CDAP Forms

Washington University Neurology Resident Career Development Action Plan (CDAP) Worksheet

Name: __________________________ Date: __________________ Faculty: __________________________

Self-Assessment Summary Statements

Current career motivators:

Skills and competencies I wish to develop:

Current Vision of Future Career Directions:

Career Goals

Short-Term (1 year):

Medium-Term (2-5 years):

Long-Term (5+ years):

Development Activities

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<th>Activity</th>
<th>Action Steps</th>
<th>Milestones/Success Measures</th>
<th>Target Completion Date</th>
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Steps Required

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<th>Individual(s) to Contact</th>
<th>Resources required</th>
<th>Other</th>
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Roadmap Review

Next Meeting: ______________________________________

Deliverables for Next Meeting:

1. ____________________________________________
2. ____________________________________________
3. ____________________________________________
4. ____________________________________________
T32 Progress Meetings

There will be two progress meetings each year during which all trainees will present their research and training plan to the administrative committee, primary mentors, and other trainees. You should plan a 10-15 minute presentation (~10 slides), which will be followed by ~10 minutes of questions/discussion.

Style Elements

As you prepare your talk, consider the elements of an effective presentation. Slides should be easy to read. Message should be easy to follow. And the speaker should be energetic and engaging. Recognize that what the audience sees often has a greater impact than the words they hear. They will notice your demeanor and appearance, so use these to your advantage.

- Slide design
  - Dark text on a light background is easiest to read. If you use a dark background, text should be white or very light.
  - Sans serif fonts like Arial and Calibri tend to be the easiest to read on screens.
  - Avoid the temptation to use effects (flashing text, swipes) just for the sake of the effects. They are distracting.
  - Avoid clutter. Each slide should contain a title and a few bullet points or an image/graph.
  - Images can add visual interest and keep the audience engaged, but should have a clear purpose so as not to become an unnecessary distraction.
  - Use space and color effectively. If you fill your slides with congested text, images, and unnecessary borders, your audience will get claustrophobic. Use color to communicate information—different colors for different meanings, with bright and/or dark colors to highlight information that requires greater attention. Avoid using a combination of red and green in the same display so colorblind viewers can distinguish groups of data.
  - Be efficient and parsimonious. Don’t present unnecessary information. If you have to apologize for a slide, it shouldn’t be in your talk!

- Realize that you are the focus and not the slides, so consider your presentation manner—how you hold yourself, how you speak and move, how enthusiastic you are, etc.
  - First impressions matter. Move confidently to where you will present, stand tall, and take a moment before speaking to look around the audience and smile.
  - Maintain eye contact throughout your talk. If you don’t, you are sending a signal that you don’t want to be there or that you aren’t committed to your message.
  - Present with energy. Underscore important points with movement or change in facial expressions. Keep a lively tone of voice, but vary pitch and pace. Always speak clearly.
  - Read the audience. If you think their interest is waning, change your voice pitch or tempo or pause abruptly. If they have confused looks on their faces, ask if you can clarify something.
  - Practice can help to avoid a lot of “ums” and “you know.” Advice on whether to use a script or an outline is varied. A script is useful in practicing, and it can be a security blanket if you lose your train of thought. But reading from a script during a presentation is a surefire way to lose your audience’s interest.

- Stick to time limits.
Initial Fall Meeting Presentation Guidelines

The focus of the fall meeting will be on (1) specific aims, (2) background/significance, and (3) proposed training plan. You are encouraged to pose a question or two to the group regarding either issues with methodology or how to address a training gap.

Your talk should be no longer than 10-15 minutes.

Elements to be included:

1. Introduction
   - Title slide
     Include the project title, names of mentor(s)/collaborator(s), and your academic title, division, and department.
   - Disclosure slide
     List sources of funding and disclose any conflicts, or indicate no conflicts.
   - Questions to be discussed by the committee today
     If you would like the committee to help you address a particular problem with methodology or offer advice regarding the best way to address a training gap, include these questions on a slide either at the beginning or at the end of your presentation. Not only will this get you some potentially useful advice, but it will help focus the audience’s attention and give them a goal.

2. Specific Aims (Goals for your study)
   Concisely state the goals and objectives of the proposed research and summarize the expected outcome(s). Provide the hypotheses to be tested.

   It is important to state at the outset what the clinical problem is, how you are tackling it, and what significance this pursuit has for understanding disease pathogenesis relevant to improved patient care. This is a critical skill to hone now, as you will spend a significant portion of your academic career convincing others of the value of your work.

3. Significance (Context for your research and this study)
   Identify the problem or critical barrier to progress that you will address with your research. Provide a brief description of what is already known about the problem to provide context for the study. Critically evaluate and summarize existing knowledge and identify the gaps that the project is intended to fill. Be succinct and keep it simple. Consider that your audience has a neuroscience background, but may not be experts in the specific area you are addressing. Focus on the potential impact of the research. Examples: improved scientific knowledge, technical capability, clinical practice; change key concepts, methods, treatment and services.
Spring and Fall Progress Meetings
Presentation Guidelines

The focus of the spring meeting will be on (1) approach, (2) results, and (3) next steps for your research project and your career. After each meeting, trainees will be asked to provide back to the committee a summary of any recommendations that were discussed.

Your talk should be no longer than 10-15 minutes.

Elements to be included:

1. **Introduction**
   - Title slide
     Include the project title, names of mentor(s)/collaborator(s), and your academic title, division, and department.
   - Disclosure slide
     List sources of funding and disclose any conflicts, or indicate no conflicts.
   - Questions to be discussed by the committee today
     (If you would like the committee to help you address a particular problem with your project)

2. **Aims**
   One slide to remind the committee/other trainees of your Specific Aims and hypotheses.

   They may not remember what you presented in the Fall, so spend a minute or two convincing them of the importance/relevance of your project

3. **Approach**
   - Study design
     Describe your study design, conceptual or clinical framework, and data acquisition methods.
   - Analysis plan
     Discuss endpoints, data collection, analysis plan, sample size/power, and handling of biases and confounders.
   - Limitations and lessons learned
     Discuss any significant difficulties you have encountered or limitations of study methods.

4. **Results/Interpretation**

5. **Next steps**
   - Research project: This may include plans for study completion, plans for presentation/publication, and/or plans for the next project.
   - Career: Plans for the upcoming year regarding fellowship or faculty position and plans for obtaining further grant support.
Responsible Conduct of Research

NIH mandates that all trainees supported by a T32 or individual or institutional career development award receive instruction in responsible conduct of research (RCR). The requirement is for at least 8 hours of face-to-face discussions among trainees. On-line courses are considered a valuable supplement, but do not fulfill this requirement. You can read the NIH announcement about the requirement here: [http://grants.nih.gov/grants/guide/notice-files/not-od-10-019.html](http://grants.nih.gov/grants/guide/notice-files/not-od-10-019.html)

As a T32 trainee, you will be required to enroll in and complete the Washington University Institute for Clinical and Translational Sciences (ICTS) Responsible Conduct of Research Course. Led by Jim DuBois, Director of the Center for Clinical Research Ethics, this course was designed in 2014 specifically to satisfy the NIH requirements for those on NIH training grants. The course consists of a series of seminars offered across the year that will address one or more of the following topics: (1) conflicts of interest; (2) human subjects protections; (3) animal welfare; (4) safe laboratory practices; (5) mentor/mentee responsibilities and relationships; (6) collaborative research; (7) peer review; (8) data acquisition, management, sharing and ownership; (9) research misconduct; (10) responsible authorship and publication; (11) the scientist as a responsible member of society; (12) contemporary ethical issues in biomedical research; or (13) the environmental and societal impacts of scientific research. A minimum of 8 seminars must be attended in order to meet the requirements of the course and of the T32 grant. You are encouraged to select sessions in consultation with your research mentor to ensure that a variety of topics are addressed and that your individual needs are met. Note that course participants are expected to complete the online Washington University Program for Ethical and Responsible Conduct in Science and Scholarship [PERCSS Core Curriculum](http://www.wustl.edu/policies/judicial.html) prior to attending the first session and must register for the course online at least one week prior to their first session.

Trainees are required to review the four video modules regarding scientific rigor and reproducibility available on the National Institutes of Health (NIH) website ([http://www.nih.gov/research-training/rigor-reproducibility/training](http://www.nih.gov/research-training/rigor-reproducibility/training)), as well as to familiarize themselves with NIH policies and guidelines posted on the NIH website ([http://grants.nih.gov/reproducibility/index.htm](http://grants.nih.gov/reproducibility/index.htm)). In addition, formal instruction in the responsible conduct of research (RCR) is provided through two programs: (1) The Program for Ethical and Responsible Conduct in Science and Scholarship [PERCSS] and (2) Instruction in the Responsible Conduct of Research.

Here are some other RCR resources:

1) “On Being a Scientist: Responsible Conduct in Research”
2) Washington University Research Integrity Policy:
4) ICTS Center for Clinical Research Ethics: [http://icts.wustl.edu/ccre](http://icts.wustl.edu/ccre)
Transitioning from Fellowship Training

- As you start your job search, take advantage of research contacts and collaborators, division chiefs, program director(s), the Office of Postdoctoral Affairs, and the Vice Chair for Research Affairs.

- Even if you hope to continue your career at Washington University, seriously consider looking elsewhere. This search will crystallize your career objectives and give you some perspective.

- If you are offered a position at Washington University, discuss how you will establish independence from your primary research mentor. Devise a plan for funding and publications that do not involve your fellowship research mentor.

- Strive to give talks at other institutions and present abstracts at meetings. Use discussions about your work to explore the potential for a position at other institutions.

- Don’t forget to budget time for specialty Boards preparation, if applicable.