WORKSHOP ON TRAINING GRANT APPLICATIONS

Thomas A. Pearson, MD, MPH, PhD
Executive Vice President for Research and Education
OBJECTIVES

• Review the current status and needs for NIH-sponsored training at UF-HSC.
• Consider the scope, size and goals of your proposed training programs.
• Understand the components of a competitive application for an institutional training grant.
• Identify and access various resources, tools and expertise to allow efficient completion of a training grant application.
• Describe plans for recruitment and selection of highly qualified, diverse trainees.
WHY APPLY FOR AN INSTITUTIONAL TRAINING GRANT?

• Address the needs for the scientific workforce.
• Support graduate students and postdoctoral fellows to work in your research program.
• Organize “academic communities” around a topic of interest.
• Develop curricula, instructional materials, degree programs, and continuing educational sessions (e.g. seminars).
• Enact recruitment and retention strategies to assure enrollment of high quality, diverse trainees.
CHECKLIST:
WHEN TO WRITE A T32 APPLICATION

_____ Unmet need for trainees or training in your subject area (including private sector)
_____ Program Director with interest, NIH funding (usually), and track record of training
_____ NIH-funded Mentors in subject area
_____ Source of diverse trainee candidates
_____ Facilities to support trainees
_____ Department/College support for a Training Program
<table>
<thead>
<tr>
<th>PI</th>
<th>COLLEGE/DEPT</th>
<th>TOPIC AREA</th>
<th>PRE</th>
<th>POST</th>
<th>END DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baylis</td>
<td>Med/Physiology</td>
<td>Hypertension</td>
<td>3</td>
<td>3</td>
<td>06/18</td>
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<tr>
<td>Behrns</td>
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<tr>
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<td>May</td>
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<td>Cancer Biology</td>
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<td>5</td>
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<td>Burns and Trauma</td>
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<td>2</td>
<td>06/14</td>
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<td>Reeves</td>
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<td>Rheumatic Dis</td>
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<td>2</td>
<td>04/15</td>
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<tr>
<td>Scott</td>
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<td>Regent Med.</td>
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<td>2</td>
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<td>Smith</td>
<td>Med/Ophthal</td>
<td>Vision Science</td>
<td>4</td>
<td>1</td>
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<tr>
<td>Vandenborne</td>
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<td>Yezierski</td>
<td>Dent/OrthodonticsPain</td>
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<td>0</td>
<td>4</td>
<td>06/15</td>
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</table>

30 22

T90(1), TL1(1) not included. 3 T32’s pending, including one funded (Cottler, 04/19)
TRAINING GRANT TIMELINE

<table>
<thead>
<tr>
<th>Activity</th>
<th>&gt; 6</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Submit</th>
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<tr>
<td>Conceptualize the training program</td>
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<td>Obtain instructions and application</td>
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<td>Identify PI/PD</td>
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<td>Contact Program Officer</td>
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<td>Review Funding Agency’s Portfolio</td>
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<td>Confirm institutional support</td>
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<tr>
<td>Identify Key Personnel and Mentors</td>
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<td>Identify courses and degree programs</td>
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<tr>
<td>Identify responsible conduct of research instruction</td>
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<td>Get input from educational development/evaluators</td>
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<td>Obtain Biosketches</td>
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<td>Develop Budget and Justification*</td>
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<td>Obtain Letters of Support</td>
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<td>Develop Tables I-X (XI – XII for renewals)</td>
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<td>Organize resources pages</td>
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<td>Write draft of proposal</td>
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<td>Review of proposals by advisors</td>
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<td>Write and review abstract</td>
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<td>Review final application</td>
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</tbody>
</table>

*Identify >$500K budget at >6 week phase
Sources of Training Grants

Federal government, NSF and NIH in particular, is the funding agency for most institutional training programs

- Foundations and Voluntary Health Agencies fund many individual scholarships and fellowships
- Limited number of nonfederal funders of training programs (e.g. HHMI)

NIH funds the Ruth L. Kirstein National Research Service Awards (NRSA) Institutional Training Grants with an Omnibus Program Announcement* (Parent T32; PA-14-015)

- Most NRSAs are reviewed by individual, Institutes/Centers
- Requirements/Rules may vary by IC!
  - Number of submissions per year (often only one)
  - Receipt dates
  - Other T Awards= T34 (PA-13-205); T35 (PA-14-016); T90

* See T Kiosk at http://grants.nih.gov/training/T_Table.htm
<table>
<thead>
<tr>
<th>Example</th>
<th>Types of Institutional Research Training Grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPA</td>
<td>Pre-college, undergraduate training (pipeline)</td>
</tr>
<tr>
<td>T25</td>
<td>Short-term research experiences</td>
</tr>
<tr>
<td>T32</td>
<td>Predoctoral training</td>
</tr>
<tr>
<td>T32</td>
<td>Postdoctoral training</td>
</tr>
<tr>
<td>T90</td>
<td>Interdisciplinary (undergrad, pre- and postdoc)</td>
</tr>
<tr>
<td>MSTP</td>
<td>MD-PhD programs</td>
</tr>
<tr>
<td>K12</td>
<td>Career Development programs</td>
</tr>
</tbody>
</table>
Awards for Individuals with a Health-Professional Doctorate (e.g., MD)

- Institutional Training Grants (T32)
- Short-Term Training Grant (R25)
- Medical School
- Internship/Residency
- Specialty
- Postdoctoral Fellowships (F32)
- Senior Fellowships (F33)
- Midcareer Investigator in Patient-Oriented Research (K24)
- Career Enhancement Award Stem Cells (K18)
- Scientist Development Program (K12)
- Mentored Clinical Scientist Development Award (K08)
- Mentored Patient-Oriented Research CDA (K23)
- Diversity Supplement
Awards for Individuals with a Research Doctorate (e.g., PhD)

- Predoctoral Fellowships (F31)
- MARC COR (T34)
- Graduate School & Medical School
- Institutional Training Grants (T32)
- Postdoctoral Fellowships (F32)
- Senior Fellowships (F33)
- BRTPUG Program
  Undergrads, post-bac, & graduates
- R25 Undergrads
- College
- Undergrads, post-bac, & graduates
- Postdoctoral
- Independent Investigator
- Career Transition Award (K22)
- Independent Scientist Award (K02)
- Career Enhancement Award Stem Cells (K18)
- Mentored Research Scientist Development Award (K01)
- Diversity Supplement
Institutional Commitment for Institutional Training Grants

• Required, reviewers look for more than the minimum
• Signed letter on institutional letterhead from responsible official (Chair, Dean, Research Administrator)
• Description of applicant institution’s commitment
  - PD/PI time effort, and salary to direct the program
  - Program faculty and staff (e.g. coordinator)
  - Stipend, tuition support needed beyond that provided by training grant.
UF and UF Health Institutional Commitment
to Institutional Training Grants

1. Funding of tuition required above that provided by the T32 Award.
2. Recusal from RCM on for direct costs of T32 grants.
3. PD/PI and coordinator time and effort.
4. Space for predoctoral and postdoctoral students.
5. Support for faculty-level Educational Development specialists for curriculum development and evaluation plan.
6. Centralized office for follow-up of NIH-funded trainees.
Administrative Sections of Training Grant

- All forms from SF424
  - Face Page
  - Training Sites
  - Key Personnel
  - Table of Contents
  - Detailed Budgets
    - Initial Period
    - Entire Period (Calculate each year to verify <$500K)
- Biographical Sketch of Program Director
- Resources
- Appendices (Training-related syllabi, teaching materials, etc.)

* NOT-OD-11-008
Training Grant Budgets

• Stipends (NOT-OD-10-047)
  – Predoctoral (Per trainee per year by NIH up to 5 years of support)
  – Postdoctoral (Per trainee based on # of years since receipt of doctoral degree as set by NIH, up to 3 years of support)

• Tuition and Fees (NOT-OD-10-073)
  – Predoctoral: 60% of tuition and fees up to $16K/year ($21K for dual degree students)
  – Postdoctoral: 60% of requested tuition up to cap of $4.5K/year or $16K/year if enrolled in degree-granting program

• Trainee Travel (Usually one trip per year)

• Training-related Expenses (NOT-OD-10-073)
  – Supports training plan (health insurance, books, computers and software, consultants, data) ($4200 for predoc, $7850 for postdoc)

• Indirect Costs (8%)
Number of Positions To Request

- Pre- vs. Postdoctoral
- Preapproval (>6 weeks) required for budgets > $500K per year.
- ? Too Many
  - Can you recruit high quality trainees?
  - Can the courses, mentors, etc. accommodate this number of trainees?
- ? Too Few
  - Is there a “critical mass” of trainees?
  - Is the number of trainees sufficient to have journal clubs, seminars, etc.?
Biographical Sketch of Program Director/Principal Investigator

• Personal Statement (summary of description in body of application)
  – Role as PD/PI including % effort and leadership activities
  – Track record in research
  – Track record in administration
  – Track record in training

• Honors and Offices: Training awards

• Publications: Related to topic of training grant

• Other support: Research and training support (e.g. prior training grants)
<table>
<thead>
<tr>
<th>Resources</th>
<th>Boiler Plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Science Center</td>
<td>Yes</td>
</tr>
<tr>
<td>Sponsoring College/Department</td>
<td>Yes</td>
</tr>
<tr>
<td>Other Co-Sponsors (e.g. Institutes, Campus)</td>
<td>Yes</td>
</tr>
<tr>
<td>Research Facilities</td>
<td></td>
</tr>
<tr>
<td>- Clinical Research Units</td>
<td>Yes</td>
</tr>
<tr>
<td>- Research Cores</td>
<td>Yes</td>
</tr>
<tr>
<td>- Research Laboratories</td>
<td>No</td>
</tr>
<tr>
<td>Educational Facilities</td>
<td></td>
</tr>
<tr>
<td>- Classrooms/Buildings</td>
<td>Yes</td>
</tr>
<tr>
<td>- Degree Programs</td>
<td>No</td>
</tr>
<tr>
<td>- Courses/Workshops</td>
<td>No</td>
</tr>
<tr>
<td>- Seminars/Journal Clubs</td>
<td>No</td>
</tr>
<tr>
<td>Information Systems</td>
<td>Yes</td>
</tr>
<tr>
<td>Libraries</td>
<td>Yes</td>
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</table>
Research Training Program Plan

• Background/Introduction/Specific Aims*
• Program Plan
  - Program Administration*
  - Program Faculty*
  - Proposed Training*
  - Evaluation*
  - Trainee Candidates*
  - Institutional Environment and Commitment*
• Recruitment and Retention Plan to Explore Diversity*
• Plan for Responsible Conduct of Research (3 page limit)

*Part of 25 page limit on SF 424 form pages.
Background

• Overall Goals of the Program
• Specific Aims
  – Training Program
    • Didactic components
    • Career development opportunities
    • Mentored research experiences
  – Career Development Plan
  – Recruitment and Retention
  – Evaluation
• Rationale (Premises underpinning the training)
• Current Research Training at the Institution
• Research Training at Participating Organizations
• Relation of the Training Program to Other Training Activities
Objectives of NRSA Institutional Research Training Grants (PA-14-05)

1. A strong foundation in research design, methods, and analytic techniques.
2. Enhanced ability to conceptualize and think through research problems with increasing independence.
3. Experience conducting research using state-of-the-art methods as well as presenting and publishing their research findings.
4. Interaction with members of the scientific community at appropriate scientific meetings and workshops.
5. Enhancement of the trainee’s understanding of the health-related sciences and the relationship of their research training to health and disease.
Organization and Administration of Training Programs

• Principal Investigator/Program Director
  – Research Experience
  – Training Experience
  – Administrative Experience
• Internal Executive Committee
• External Advisory Committee
• Didactic Core
• Mentors
• Career Development Program
• Evaluation
TRAINING PROGRAM ORGANIZATIONAL CHART

Program Director(s) Coordinator

- Internal Advisory Committee
  - Mentor Cluster #1
- External Advisory Committee
  - Mentor Cluster #2
  - Mentor Cluster #3
Program Management Team
Director: Thomas A. Pearson, MD, MPH, PhD
Co-Director: Susan G. Fisher, RN, PhD
Co-Director: Robert Block, MD, MPh
Evaluator: Camille Martina, PhD
Coordinator: Pattie Kolomic

Internal Advisory Committee
Nancy Chin, PhD
Susan G. Fisher, RN, PhD ex officio
Charles Lowenstein, MD
Arthur J. Moss, MD
Ekaterina Noyes, PhD
Deborah Ossip, PhD
Thomas A. Pearson, MD, MPH, PhD ex officio
Wojciech Zareba, MD, PhD

External Advisory Committee
Diane Becker, RN, ScD
Elizabeth Ofili, MD, MPH
Herman Taylor, MD
Russell Tracy, PhD

Vascular Biology Research Cluster
Clinical Trials Research Cluster
Epidemiology Research Cluster
Outcome/Cost-Effectiveness Research Cluster
Behavioral Sciences Research Cluster
Training Program Faculty

• Mentors versus Preceptors
• Organization by Disciplines: Research Clusters
  – Breadth: Number of disciplines involved in the training
  – Depth: Number of faculty in each discipline
• Biosketches
  – PI & Key Personnel to SF424 file
  – Non-key faculty and mentors
    • Research Training Program Plan Form (SF424)
    • Do not require personal statement
Training Grant Advisory Committees

• Internal Executive Committee
  - Specific overview duties (e.g. Recruitment/Selection, Mentor Review, Trainee Progress)
  - Meeting quarterly or for specific duties

• External Advisory Committee
  – Annual Overview
  – Opportunities for engagement of partnering institutions.
Didactic Curriculum

- Driven by learning objectives and competencies to be acquired.
- Degree as a recognized credential.
- Full time vs. Part time.
- Criteria for successful completion.
- Identify instructors, synopsis.
UF-HSC Assistance in Curricula Design

• Education Development specialists
  - Linda Behar-Horenstein, PhD (COE/COD)
  - Amy Blue, PhD (PHHP)

• Curricula Design
  - Learning Objectives/Acquired Competencies
  - Measurable goals
  - Criteria for attainment
Career Development Programs

- Seminars, journal clubs, etc.
- Skill-building Programs
  - Scientific Writing
  - Ethics
  - Grant Writing
- Off-site courses and programs
- National meetings
- Exposure to various career directions (NOT-OD-14-029)
Mentored Research Experience

- Definition of a mentor: faculty with >1 years of experience in training and current NIH funding of research
- Mentor Development: Mentors vs. preceptors
- Selection of a mentor/mentorial team
- Mentoring Plan: Frequency, duration, etc.
- Individual Development Plan (IDP) (NOT-OD-13-093)
- Oversight of mentoring and career development plans (e.g. PI/PD, Internal Executive Committee)
1. Evaluation of learning objectives using measurable outcomes:
   a. Knowledge: Course grades (e.g. B or higher)
   b. Skill: Completion of research project, etc.
   c. Attitude: Completion of Workshops

2. Periodic review of Individual Development Plan

3. Trainee Career Development: Follow-up after training.
   a. Position, promotions, honors
   b. Publications (# in journals with high impact factor)
   c. Grants submitted, funded
Trainee Candidates

• Description of applicant pool

• Qualification and criteria for acceptance
  - Disciplines/prior training
  - Transcripts
  - Letters of recommendation
  - Standardized test scores (GRE, MCAT)

• Process of review and selection
Recruitment and Retention Plan to Enhance Diversity

- Track Record
  - Underrepresented Racial and Ethnic Groups
  - Disability Groups
  - Disadvantaged Backgrounds
- Pipeline Programs
- Plan
  - Website
  - Advertisements
  - Personal efforts by Program Director/Faculty
  - Formal collaboration with minority institutions
Instruction in Responsible Conduct of Research

- Course: Responsible Conduct of Biomedical Research (GMS 7003)
- Human Subject Protection Program Certification
- Research with Vertebrate Animals (IACUC)
- Workshops
  - Recruitment and Retention of Research Subjects
  - Research Program Administration
- Continuing Education: Regular discussions
- Integration of ethics and integrity issues in didactic coursework (e.g. Grant Writing)
Progress Report

• Accomplishments of the Program to date
• Use of training-related expenses
• Lack of completion of planned duration of training
• Synopsis of trainees’ programs
  - Didactic coursework/degree program
  - Research project/Mentors
  - Publications (PubMed)
  - Current position (if graduated)
• Tables (1-5) can be assembled centrally (Karen Pastos, College of Medicine)

• Concept of “Good Enough”

• What question does each table address?
Tables Required for Training Grants

1. Participants/Programs
   # Faculty
   # Trainees (Pre/postdoctoral)
   # with participating faculty
   # Supported by the grant

2. Participating Faculty Members

3. Institutional Training Grant Support of Participating Units/Faculty
4. Grant and contract support of faculty member
   - Project period
   - Direct costs of current year

5. Trainees of Participating Faculty Members (separate for Pre-, Postdoc)
   - Training period
   - Prior academic degrees
   - Prior academic institution
   - Title of research
   - Current position/source of support
6. Publications of Research Completed by Trainees (separate for Pre-, Postdoc)
7. Admissions and Completion Records for Participating Departments and Programs*
8. Qualifications of Recent Applicants*
9. Qualifications of Current Trainees*
10. Admissions and Completion Records for Underrepresented Minorities, Disability Groups, and Trainees with Disadvantaged Backgrounds
Tables Required for Training Grants (Renewals)

11. Appointments to Training Grant for Each Year of the Past Award (Renewal Only)
12. Trainees supported by the Training Grant (Renewals Only)*

* Separate tables: a. predoctoral, b. postdoctoral trainees
NEXT STEPS

• Listserve of workshop participants
• CTSA Website:  www.CTSI.ufl.edu/T32
• Updates/Boiler Plate
  - VIVO Database (VIVO.ufl.edu/help)
  - Resources
  - Responsible Conduct of Biomedical Research (GMS 7003)
  - Recruitment and Retention of Trainees from Underrepresented Populations
• Office for Follow-up of Trainees
### Training Grant Timeline

#### Activity

- Conceptualize the training program
- Obtain instructions and application
- Identify PI/PD
- Contact Program Officer
- Review Funding Agency’s Portfolio
- Confirm institutional support
- Identify Key Personnel and Mentors
- Identify courses and degree programs
- Identify responsible conduct of research instruction
- Get input from educational development/evaluators
- Obtain Biosketches
- Develop Budget and Justification*
- Obtain Letters of Support
- Develop Tables I-X (XI – XII for renewals)
- Organize resources pages
- Write draft of proposal
- Review of proposals by advisors
- Write and review abstract
- Review final application

#### Timeline (Months before submission)

- **> 6**
- **6**
- **5**
- **4**
- **3**
- **2**
- **1**
- Submit

*Identify >$500K budget at >6 week phase*
REVIEW OF T32 APPLICATIONS

Presubmission

• Allow 2+ weeks prior to submission
• Identify faculty with T32 experience
  - Current PI/PD of T32
  - Recent T32 Reviewers

Post review

• Communicate review scores and critiques to EVPRE
• If not funded, schedule discussion of revision, resubmission.
Institutional Training Grants at UF-HSC

1. Strategically important, large DC-carrying NIH grants
2. Enhanced institutional support
   - Tuition supplement, no RCM
   - Website for resource boiler plate, biosketches, courses
   - Doctoral - level – expertise in curricular design, educational evaluation
   - Assistance with table development, ? Follow-up of trainees.
3. Grant-writing help (course, application review)