WORKSHOP ON TRAINING GRANT APPLICATIONS
February 3, 2016

Thomas A. Pearson, MD, MPH, PhD
Executive Vice President for Research and Education
UF Health Research and Education: Business as Usual?

- UF designated as preeminent institution of higher education in State of Florida.
- New leadership at UF, UF Health, HSC Colleges, and Departments.
- A successful and expanding UF Health clinical programs on Gainesville, Jacksonville, and Orlando campuses.
- Unprecedented rise in NIH research funding rankings, despite flat federal funding for research, as evidence of the preeminence of our current faculty.
- UF Rising and Cancer Preeminence Initiatives hiring 50-65 senior investigators across the HSC.
- A best-in-class technology transfer/incubator program harnessing the entrepreneurism of our faculty.
T32 Problems and Progress

• NIH Funding Trends, Financial Cost/Benefit
  8% IDC Rate
  Support for Director and Coordinator
• Trainee Benefits
  Health Insurance
  Tax Status
• Application Burden
  Tables
  Trainee Follow-up
• Trainee Recruitment and Retention
• Curriculum and Educational Evaluation
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.
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<tr>
<th>PI</th>
<th>College/Department</th>
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<td>Predoctoral Trainees</td>
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<td>TRACTS, CTHS</td>
<td>TRACTS, CTHS, KL2</td>
<td>TRACTS, CTHS, ARE, MA</td>
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<th>Training Activities</th>
<th>Predoctoral Trainees</th>
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TL1 = NRSA Training Core, KL2 = Mentored Career Development Program, TRACTS = Training and Research Academy for Clinical and Translational Science, CTHS = Certificate in Translational Health Science, ARE = Academy of Research Excellence, MA = Mentor Academy, RPC = Research Professionals Consortium

*Additions to current programs proposed in this application
I. Training Grant Application Workshop
II. National Research Service Award
   (PA-14-015)
III. Other training grants at UF HSC
IV. Training Grant Application Timeline
V. Resources (Boiler Plate)
   • CTSI Facilities and Resources (36)
   • UF Colleges (16)
   • Other Facilities and Resources Affiliated with UF (60)
VI. Plan for Instruction in Responsible Conduct of Research
VII. Recruitment and Retention Plan to Enhance Diversity
VIII. Institutional Commitment Letter
IX. Assistance for Training Grant Administrators
X. Data Tables Required for T32
XI. Follow-up of Tracking of T32 Appointees
XII. Stipends, Tuition/Fees, etc. (NOT-OD-16-047)
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
## TRAINING GRANT TIMELINE

### TIMELINE (Months before submission)

<table>
<thead>
<tr>
<th>Activity</th>
<th>&gt; 6</th>
<th>6</th>
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<td>Obtain instructions and application</td>
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<td>Contact Program Officer</td>
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<td>Identify Key Personnel and Mentors</td>
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<td>Get input from educational development/evaluators</td>
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<td>Obtain Letters of Support</td>
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</table>

*Identify >$500K budget at >6 week phase*
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>Types of Institutional Research Training Grants</th>
<th>Example</th>
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<tr>
<td>Pre-college, undergraduate training (pipeline)</td>
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<td>Short-term research experiences</td>
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<td>Predoctoral training</td>
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<td>Postdoctoral training</td>
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<td>Interdisciplinary (undergrad, pre- and postdoc)</td>
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<td>MD-PhD programs</td>
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<td>Career Development programs</td>
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</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)
- Independent Investigator
- 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)
- Institutional Training Grants (T32)
- Postdoctoral Fellowships (F32)
- Senior Fellowships (F33)
- MARC COR (T34)
- College
- Graduate School & Medical School
- Postdoctoral
- Independent Investigator
- Career Transition Award (K22)
- BRTPUG Program Undergrads, post-bac, & graduates
- R25 Undergrads
- Mentored Research Scientist Development Award (K01)
- Independent Scientist Award (K02)
- Career Enhancement Award Stem Cells (K18)
- Diversity Supplement
Administrative Sections of Training Grant

- All forms from SF424
  - Face Page
  - Abstract
  - 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-16-047)
  – 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-16-047)
  – Supports training plan (health insurance, books, computers and software, consultants, data) ($4200 for predoc, $8850 for postdoc)

• Indirect Costs (8%)
T32 Economics

• No administrative tax on direct costs
• Displacement of stipend and tuition from RO1
  Predoctoral ($40,000/hr./trainee)
  Postdoctoral ($40,000-$60,000/yr./trainee)
• Support for PI (Director and Coordinator)
  Tuition for predoctoral fellows ($16K/yr.)
  ? Degree programs for postdoctoral fellows
  Administrator peer support
• Institutional support for shared services
  Educational Development and Evaluation
  Follow-up of trainees
  Grant application
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)
Resources

CTSI Facilities and Resources (N=36)
  Educational Programs
  Cores
UF Colleges (N=16)
Other Facilities (N=60)
  Animal Care Services
  Centers/Institutes
  Departments
  Information Systems
  Institutional Review Boards
  Health Science Center Library
  Research Administration
  Sid Martin Incubator
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 Enhance 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
1. Review of barriers/challenges to administration of T32s.
2. Identification of best practices for smooth administration of T32’s.
3. Development of list of T32 administrators for future advice and assistance.
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.
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, and salary to direct the program
    (usually 10% effort)
  - Program faculty and staff (e.g. coordinator, usually 20% effort)
  - 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 5% effort faculty-level Educational Development specialists for curriculum development and evaluation plan.**
6. Centralized office for follow-up of NIH-funded trainees.**

*Department/College    **HSC
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.
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
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)
TRAINING GRANT TIMELINE

TIMELINE (Months before submission)

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<tr>
<th>Activity</th>
<th>&gt; 6</th>
<th>6</th>
<th>5</th>
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<td>Obtain instructions and application</td>
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<td>Review Funding Agency’s Portfolio</td>
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<td>Identify Key Personnel and Mentors</td>
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<td>Identify courses and degree programs</td>
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<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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*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.
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)
<table>
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<tr>
<th>Domains of Competence</th>
<th># Core Competencies</th>
<th># Learning Objectives</th>
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<tr>
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<td>Knowledge</td>
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<tr>
<td>I Clinical and Translational Research</td>
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<td>6</td>
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<td>Questions</td>
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<td>II Literature Critique</td>
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<td>III Study Design</td>
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<td>IV Research Implementation</td>
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<td>V Sources of Error</td>
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<td>VI Statistical Approaches</td>
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<td>VII Biomedical Informatics</td>
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<td>VIII Clinical Research Interests</td>
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<td>A. Regulatory Support</td>
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<td>B. Responsible Conduct of Research</td>
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<td>IX Scientific Communication</td>
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<td>X Cultural Diversity</td>
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<td>XI Translational Teamwork</td>
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<td>XII Leadership</td>
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<td>XIII Cross-Disciplinary Training</td>
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<td>XIV Community Engagement</td>
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<td>Year 1 Summer</td>
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<tr>
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<td>GMS 7093 Intro to Clin/Trans Res.</td>
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<tbody>
<tr>
<td></td>
<td>GMS 6861: Biostatistics I (3cr)</td>
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<td>GMC 6895: CTS Journal Club (1 cr)</td>
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<tr>
<td></td>
<td>GMS 6903: Manuscript/abstract writing For Clinician/Scientist (2 cr)</td>
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<td></td>
<td>GMS 6893: CTS Seminar (2 cr)</td>
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<td>PHC 6001: Principles of Epidemiology (3cr)</td>
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<tr>
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<td>GMS 6190: Quantitative Literacy (1 cr)</td>
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<td>GMS 6931: Ethical/Policy Issues in Clinical Res (2 cr)</td>
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<td>PET 5936: Grant Writing (3cr)</td>
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<td></td>
<td>*Team Science (1cr)</td>
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<td>GMS 7003 Responsible Conduct of Res (1 cr)</td>
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<tr>
<td></td>
<td>*Qualitative Literacy (1cr)</td>
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<tr>
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<td>K College/R01 Boot Camp</td>
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<td>Electives**</td>
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<tr>
<th>Year 2 Fall</th>
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<tbody>
<tr>
<td></td>
<td>*Developing Academic Leaders</td>
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<td>*K College/K to R Boot Camp</td>
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<tr>
<th>Year 2 Spring</th>
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<tr>
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<td>GMS 6971: Master’s Thesis (2/3 cr)</td>
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</table>

Minimum of 3 cr for MS in CTS of Research Design and Analysis coursework

- GMS 6822: Measuring and Analyzing Health Outcomes (3 cr)
- GMS 6826: Advanced Design in and Methodology for Case Control/Studies in Clinical Research (2 cr)
- GMS 6829: Longitudinal Research Design (2 cr)
- GMS 6832: Economic Methods for Evaluating Value in Health (3 cr)
- GMS 6844: Experimental and Quasi Experimental Research Designs in Community Settings
- GMS 6846: Meta-Analysis in Clinical Health Services Research and Public Health (2 cr)
- PHC 6000: Epidemiology Methods I (3 cr)
- PHC 6011: Epidemiology Methods II (3 cr)
Leaders in a variety of science and healthcare fields

- Pre-graduate Students
- Postgraduate Trainees
- Pre-graduate Healthcare Students
- Postgraduate Healthcare Trainees
- Healthcare Junior Faculty
- Healthcare Senior Faculty
- Mentor
- Mentor Academy
  - R Awardee
  - K to R Boot Camp
  - K College
Training and Research Academy for Clinical and Translational Science (TRACTS)

- Two-year mentored training program for junior faculty and senior fellows
- Tuition provided
- Provides clinicians with sufficient research experience, didactic knowledge and published research outcomes to be competitive for a K Award.
- Directed by Ronald Shorr, MD, MS
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)
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)
Research Training Program Evaluation

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
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)
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
Tables Required for Training Grants (Cont’d)

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