Topics to be Discussed

**Types of Awards**
- Fellowships (F’s), Training grants (T’s), Career Development awards (K’s), Research grants (R’s), Loan Repayment Program

**Funding Agencies**
- Federal
  - National Institutes of Health, AHRQ, HRSA
  - Voluntary Health Organizations, Professional Societies, Foundations, Industry, Other

**Planning & Organizing a Research Proposal**
Not All Funding
Opportunities Are the Same

- **Different mission statements**
  - Fellowships, Training grants
  - Career development (K’s)/ Scholar awards
  - Research project (R’s)

- **Different funding**
  - Stipend/Salary
  - Pilot awards
  - Comprehensive research costs

- **Different time frames**
  - Not renewable: 5 years (K’s), 3 years (F’s), 2 years (T’s)
  - Renewable: 4 years - 5 years (R01) each competitive period
Types of Awards

- Individual fellowships
- Training grants
- Career transition awards
- Career development awards
- Research grants (R01)
- Cooperative agreements
- Administrative supplements
- Institutional Clinical & Translational Science Award (CTSA)
- Contracts
- Loan Repayment Program
Types of Awards

- Individual fellowships
- Training grants
- Career transition awards
- Career development awards
- Research grants (R01)
- Cooperative agreements

- Administrative supplements
- Institutional Clinical & Translational Science Award (CTSA)
- Contracts
- Loan Repayment Program
Types of Awards

- Individual fellowships
- Training grants
- Career transition awards
- Career development awards
- Research grants (R01)
- Cooperative agreements

- Administrative supplements
- Institutional Clinical & Translational Science Award (CTSA)
- Contracts
- Loan Repayment Program
# Timeline of NIH Funding for Junior Investigators

## Medical School

**Short term Training**

## Internship/Residency

**Research Support**

## Fellowship – Research Years

- Individual Post-doc Fellowship or Institutional T32 Post-doc Training Grant slot

## Instructor/Assistant Professor

**Year-long “Enhancement” Programs**
Post-doc: Institutional Training Grant (NIH-T32)

- Post-docs selected by institution
- Research training in specific area
- Defined number of slots
- Stipend, health fees, tuition, travel
Dept of Medicine:
NIH Institutional Training Grants

- Columbia University Training Program in **Lung Science** [J. Bhattacharya (Pulmonary)]
- Training Program in **Endocrinology and Metabolism** [J. Bilezikian (Endocrinology)]
- Postdoctoral Training in **Arteriosclerosis** Research [I. Goldberg (Preventive Medicine)]
- Columbia Integrated Training Program in **Infectious Disease** Research [S. Hammer/F. Lowy (Infectious Diseases)]
Dept of Medicine: NIH Institutional Training Grants

- Postdoctoral Training in **Cardiovascular Disease**
  [S. Marx (Cardiology) - M. Hardy (Surgery)]

- **Primary Care** Research Fellowship
  [S. Shea (General Medicine)]

- Multidisciplinary Training in Translational **Gastrointestinal and Liver Research**
  [T. Wang (GI)]
CUMC: NIH Institutional Training Grants

- **Cancer Biology** Training Program  
  (R. Baer)

- **Medical Genetics** Training Program  
  (A. Christiano)
Post-doc: Individual Fellowship

- Supports specific individual
- Stipend, health fees, tuition, travel
- NIH: F32

Review criteria:
- Individual fellow
- Mentor
- Research project
- Research environment
Post-doc Fellowships (F32s) Applications, awards, and success rates
Post-doc: Individual Fellowship

- Voluntary Health Organizations, Foundations, Professional Societies -

- Amer Assoc for the Study of Liver Diseases
  - Advanced/Transplant Hepatology Fellowship

- American College of Cardiology (ACC)/ACCF
  - Merck Research Fellowships in Cardiovascular Disease and Cardiometabolic Disorders

- American Heart Association (Founders Affiliate)
  - Postdoctoral Fellowship
Post-doc: Individual Fellowship
- Voluntary Health Organizations, Foundations, Professional Societies -

- American Kidney Fund
  - Clinical Scientist in Nephrology Fellowship

- American Society of Clinical Oncology - Conquer Cancer Foundation
  - Young Investigator Award

- Amer Soc Neph Foundation for Kidney Research
  - Ben J. Lipps Research Fellowship
Post-doc: Individual Fellowship

- Voluntary Health Organizations, Foundations, Professional Societies -

- Endocrine Fellows Foundation
  - Fellows Development Research Grant
- Flight Attendant Medical Research Institute
  - Young Clinical Scientist Award
- Francis Families Foundation
  - Parker B. Francis Fellowship
- Stony Wold - Herbert Fund
  - Fellowship
Timeline of NIH Funding for Junior Investigators

- **Medical School**
  - Short term Training

- **Internship/Residency**
  - Research Support

- **Fellowship – Research Years**
  - Individual Post-doc Fellowship or Institutional T32 Post-doc Training Grant slot
  - Year-long “Enhancement” Programs

- **Instructor/Assistant Professor**
  - Career Transition Awards
Career Transition Awards

- **NIH Pathway to Independence Award (K99/R00)**
  - 1-2 years as a mentored K award for post-docs
    - Total/year: = $90,000 (salary and research expenses)
    - 75% effort
  - 3 years as an research support award for independent investigators
    - Total/year: = $249,000 (salary and research expenses)
    - Must have an independent research position
Career Transition Awards

- **BWF: Career Awards for Medical Scientists**
  - To support physician-scientists during the last years of a mentored postdoctoral/fellowship position and the beginning years of an independent faculty position.
  - Must hold an M.D., D.D.S., D.V.M., Pharm.D., or equivalent clinical degree
  - 75% effort to research-related activities
  - Funding: $700,000 over five years
    - Postdoctoral/Fellowship Portion: Years 1 and 2
      Annual Total: $95,000
    - Faculty Portion of the Award: Years 3-5
      Annual Total: $170,000
Career Transition Awards

- American Heart Association (National) Fellow-to-Faculty Transition Award
  - Provides funding for during the crucial period of career development which spans the completion of research training through the early years of the first faculty/staff position
  - Training stage: Maximum of $65,000 per year
  - Faculty stage: Maximum of $132,000 per year
Career Transition Awards

**JDRF: Advanced Postdoctoral Fellowships**

- Provides an opportunity to receive full-time research training and to assist awardees in transitioning from a fellowship to an independent (faculty-level) position.
- First degree (PhD, MD, DMD, DVM, or equivalent) received no more than 5 years before the fellowship.
- $90,000 per year for up to 3 years.
- Optional transition year in which awardees may request funding support for their first year as a faculty member.
Timeline of NIH Funding for Junior Investigators

- Medical School
- Internship/Residency
- Fellowship – Research Years
- Instructor/Assistant Professor

- Short term Training
- Research Support
- Individual Post-doc Fellowship or Institutional T32 Post-doc Training Grant slot

- Year-long “Enhancement” Programs
- Career Transition Awards
- Individual Mentored K Career Development Award
Research Career Programs (K)

- Minimum Effort: e.g. 75% (sometimes 50%)
  Research & Career development activities
- Predominantly salary support
  - e.g. NHLBI: $75K, NIDDK: $90K, NCI: $100K
- Up to 5 years
- US citizen/permanent resident
- Reduce effort to 50% in last 2 years if PI of NIH research grant
Mentored Clinical Scientist Development Award (K08)

- Support to develop outstanding independent clinician research scientists
- Basic and translational science
Mentored Patient-Oriented Research

Career Development Award (K23)

- **Patient-oriented research**: Research conducted with human subjects (or on material of human origin) for which an investigator directly interacts with human subjects.

Research Career Development/Scholar Programs

- American College of Gastroenterology
  - Junior Faculty Development Grant

- American Heart Association
  - Scientist Development Grant

- American Society of Clinical Oncology - Conquer Cancer Foundation
  - Career Development Award

- American Society of Nephrology
  - Career Development Grants
Research Career Development/Scholar Programs

- **Damon Runyon Cancer Research Foundation**
  - Clinical Investigator Award
- **Doris Duke Charitable Foundation**
  - Clinical Scientist Development Award
- **Robert Wood Johnson Foundation**
  - Harold Amos Medical Faculty Development Program
Timeline of NIH Funding for Junior Investigators

- **Medical School**
  - Year-long “Enhancement” Programs

- **Internship/Residency**
  - Research Support

- **Fellowship – Research Years**
  - Individual Post-doc Fellowship or Institutional T32 Post-doc Training Grant slot

- **Instructor/Assistant Professor**
  - Institutional K12 Career Development Slot
  - Career Transition Awards
  - Individual Mentored K Career Development Award
CTSA Awards: A Home for Clinical and Translational Science

Source: Zerhouni (NIH) [9/06]
Mentored Clinical Scientist Development Program Award (K12)

- Support to an institution for career development experiences for clinicians leading to research independence.
- Institutions recruit and select candidates into their programs
- Candidates must meet the same criteria as for the individual mentored clinical scientist development award.
Mentored Clinical Scientist
Development Program Award (K12)

- CTSA - Clinical and Translational Scientist Award
- TRANSFORM Scholars Mentored Career Development program
  [Training and Nurturing Scientists for Research that is Multidisciplinary]
Institutional Clinical Research Curriculum Award

- Comprehensive courses in clinical research
  - Biostatistics, epidemiology, study designs, bioethics, legal and regulatory issues
- For the career development of clinical investigators
NIH Career Development Support to Independent Research Funding

- K08/K23 → Independent Grant
- K12 | K23 → Independent Grant
- K12 | K23 → Independent Grant
- K08/K23 | Independent Grant
- K12 → Independent Grant
Funds research project
- Salaries of PI and other research personnel
- Supplies, reagents, etc
- Animal costs
- Patient care costs
- Core facilities
- Page charges for publications

Multi-Year (4yrs – 5yrs)
Renewable (e.g. original grant + 2 renewals = 15yrs)
Timeline of NIH Funding for Junior Investigators

- Medical School
  - Short term Training

- Internship/Residency
  - Research Support

- Fellowship – Research Years
  - Individual Post-doc Fellowship or Institutional T32 Post-doc Training Grant slot

- Instructor/Assistant Professor
  - Institutional K12 Career Development Slot

Year-long “Enhancement” Programs

Career Transition Awards

Individual Mentored K Career Development Award

NIH Loan Repayment Program
NIH’s Extramural Loan Repayment Program

- Up to $35,000 a year towards educational loan debt
- Conduct qualified research activities for at least 50% of their effort (or less than 20 hours per week) for a minimum of 2 years
- Qualifying educational loan debt equals or exceeds 20% of the applicant's institutional base salary


NIH’s Extramural Loan Repayment Program

- May competitively apply for renewal
- Repayments represent taxable income and are paid in addition to loan

Eligibility:
- U.S. citizen/Permanent residence
- Recipient of M.D., Ph.D., D.D.S. D.M.D., or other specified equivalent doctoral degree
NIH’s Extramural Loan Repayment Program

Extramural Programs

- Clinical Research
- Health Disparities Research
- Clinical Researchers from Disadvantaged Backgrounds
- Pediatric Research
- Contraception and Infertility Research
LRP: Clinical Research
– New Applications -

http://www.lrp.nih.gov/about_the_programs/clinical.aspx
LRP: Clinical Research
– Renewal Applications –

http://www.lrp.nih.gov/about_the_programs/clinical.aspx
NIH: one round of applications
When Preparing an Application:

- Read instructions
- Never assume that reviewers “will know what you mean”
- Refer to literature thoroughly and thoughtfully
- Explicitly state the rationale of the proposed investigation
- Include well-designed tables and figures
- Present an organized, lucid write-up
Elements of a Good Proposal

- Feasible
- Relevant
- Unique
- Innovative
- Clear
- Brief
- Consistent
Anticipate Questions and Answer them before they are asked
Common Problems with Grant Applications from New Investigators

- Overly ambitious
- Not independent of previous mentor’s research
- Fishing expedition
- Not hypothesis driven
- Descriptive, not mechanistic project
- Unfocussed
- No or insufficient preliminary data
- Unrealistic budget
- Methodologies beyond the expertise of investigator or research team
Good Luck!