Technical Assistance Webinar:
NLM Institutional Training Grants for Research Training in Biomedical Informatics
RFA-LM-16-001

NLM Extramural Programs
National Institutes of Health
March 23, 2016

Agenda

- Go over the basics of NLM's funding announcement

- Answer some questions that have already been received via email

- After the presentation we will
  - Answer questions sent in the 'chat' feature
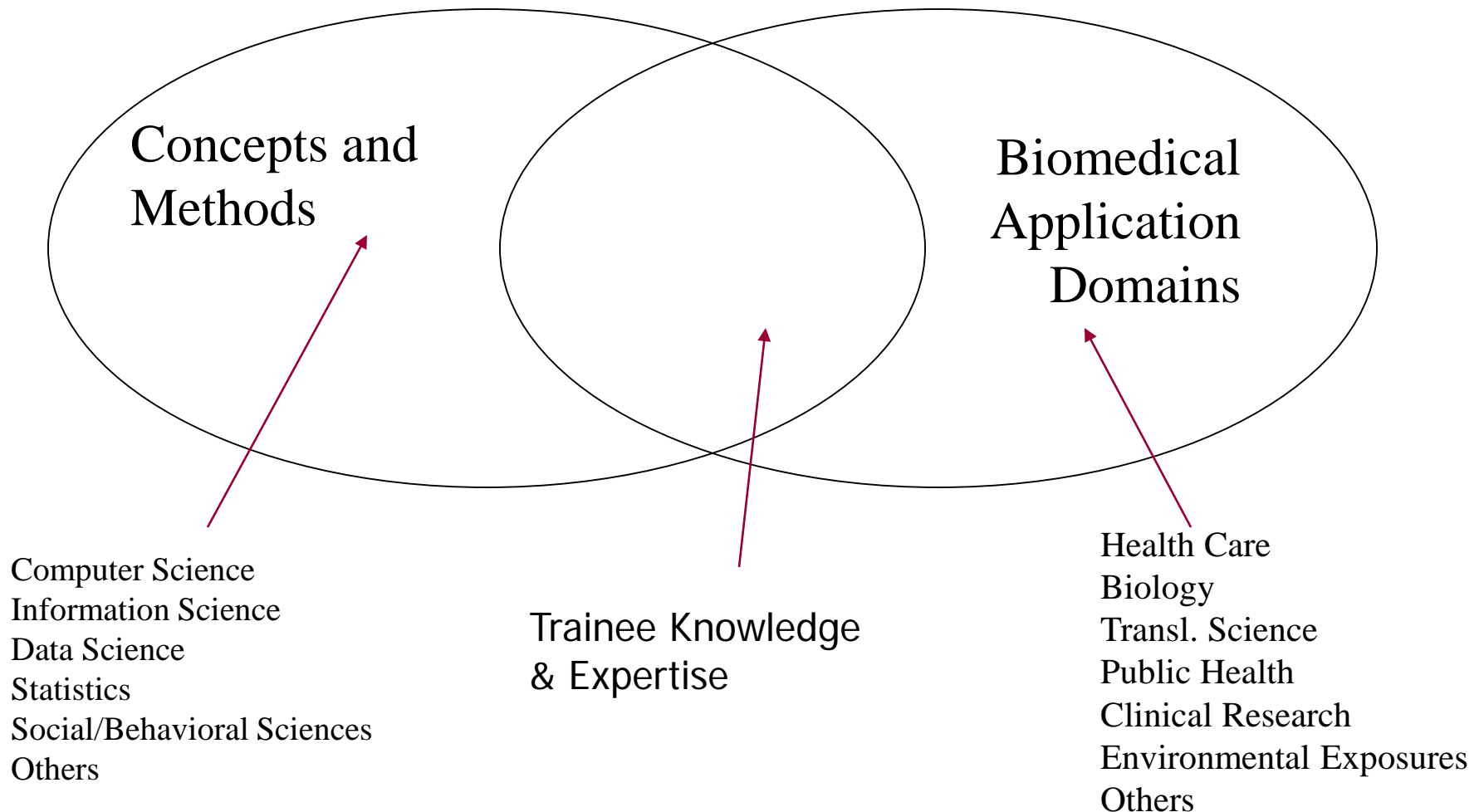 - Answer other questions

Purpose of the Funding

- Support for predoctoral and postdoctoral training for research careers in biomedical informatics and data science

- Meet a growing need for investigators trained in biomedical computing, data science and related fields as they directly relate to application domains in health and biomedicine

Outcome of the Funding

- Successful graduates of these programs will be prepared for research-oriented roles in academic institutions, not-for-profit research institutes, governmental and public health agencies, pharmaceutical and software companies, and health care organizations

- This initiative is <u>not</u> intended to prepare trainees for careers emphasizing planning, deployment, maintenance, or administration of computer systems or IT infrastructure

Education for Biomedical Informatics Careers

Concepts and Methods

Biomedical Application Domains

Computer Science
Information Science
Data Science
Statistics
Social/Behavioral Sciences
Others

Trainee Knowledge & Expertise

Health Care
Biology
Transl. Science
Public Health
Clinical Research
Environmental Exposures
Others

Emphasis on Research Training

Three training options:

1. <u>Predoctoral</u>: Must pursue doctoral degree in informatics or a related field

2. <u>Postdoctoral with doctorate not in informatics</u>: must pursue masters or doctorate in informatics or related field

3. <u>Postdoctoral with doctorate in informatics</u>: traditional postdoc (enhanced preparation for research career) or certificate

Principal Training Domains

Each applicant program must offer training in at least one of these areas:

- – Health Care/Clinical Informatics

- – Translational Bioinformatics

- – Clinical Research Informatics

- – Public Health Informatics

- Special tracks may be proposed within them

Health Care/Clinical Informatics

- Applications of informatics principles and methods to direct patient care, such as advanced clinical decision support systems, multimedia electronic health records, provision of health-care related informational support to consumers

- Special tracks might be offered for nursing informatics, dental informatics, imaging informatics, precision medicine, clinical data science or other similar areas

Translational Bioinformatics

- Applications of informatics principles and methods to support 'bench to bedside to practice' translational research, such as genome-phenome relationships, pharmacogenomics, or personalized medicine
- Special tracks might be offered in health effects of environmental factors, mining of large genome-phenome data sets, intelligent tools for curation, visualization and analysis of big data, precision medicine, or other similar areas

Clinical Research Informatics

- Applications of informatics principles and methods to support clinical trials, comparative effectiveness research or other clinical research

- Special tracks might be offered in areas such as biomedical big data analytics, biostatistics, in-silico trials, merging and mining large disparate data sets that mix images, text and data, or other similar areas

Public Health Informatics

- Applications of informatics principles and methods to build integrated resources for health services research, for decision support in public health agencies, to support regional or global health research or syndromic surveillance

- Special tracks might be offered in areas such as health literacy, information design for consumers, health effects of climate change or other environmental factors

Academic Degrees Conferred

- Must provide preparation for a research career comparable to an academic tenure-track position

- Degree program must be <u>fully</u> approved by home institution at time of application

- Academic degree can be awarded in a related field (e.g. computer science, biomedical engineering, information sciences) as long as required curricular elements are present

Required Curricular Elements, Pt.1 of 2

- A core curriculum that includes required coursework in informatics and data science concepts and principles, quantitative methods such as biostatistics and applied math, and concepts of computer science/engineering/information sciences and/or other information fields

- The core curriculum should include instruction in the design of rigorous, reproducible research studies in biomedical informatics and data science

Required Curricular Elements, Pt. 2 of 2

- The curriculum should provide courses and research experience in one or more biomedical application domains so a trainee has the depth of knowledge to undertake meaningful research

- Elective options should offer opportunity for advanced training in fields basic to informatics

- Each trainee must complete a mentored research experience and an independent research project

- Trainees are expected to disseminate findings of their research

Number of Full-time Slots to Request

- Maximum of 15 full time slots per application for mix of predoctoral and postdoctoral plus up to 4 Short Term Trainee Diversity slots (STTP)
  - No more than 60% can be predocs
- Maximum of 10 full time slots per application for programs requesting 100% predoctoral or 100% postdoctoral slots plus up to 2 Short Term Trainee Diversity slots (STTP)
- Do not request more slots than your training capacity and/or recruitment history can justify
- Slot limits can be exceeded only if training in environmental exposure informatics is proposed

Environmental Exposure Informatics

- Applicants may apply for up to two additional training slots in Environmental Exposures, as a component of one or more of the general program area(s) proposed
  - Informatics training that advances understanding of environmental exposures and their population, clinical, mechanistic and phenotypic consequences

Recruitment

- NLM-supported trainees must be US citizens or permanent residents at time of appointment
- Programs must advertise and recruit nationally
- Programs must have a recruitment (and retention) plan to enhance diversity
- Eligibility for appointment within a program or site cannot be restricted to a single health professional group (e.g. physicians, nurses, dentists)

Application Format, pt. 1 of 3

- All applications must be submitted via Grants.gov by the published deadlines

- SF424 (R&R) Application and Electronic Submission Information is available at http://grants.nih.gov/grants/funding/424/index.htm#inst, including application guides, data tables and additional format pages

- SF424 instructions must be followed PLUS any additional instructions provided in the Funding announcement

- Applicants must observe page limits presented in the PHS 424 (R&R) Application Guide or at http://grants.nih.gov/grants/forms_page_limits.htm. Page limits are strictly enforced

Application Format, pt. 2 of 3

- Required tables do not count against page limits
- All applicants must complete tables 1-10. Renewal applicants must also complete tables 11, 12A and 12B. Blank data tables are provided in fillable format at http://grants.nih.gov/grants/funding/424/index.htm#inst
  - Note that there are different tables for new and renewal applications for tables 1,6 and 9
- Detailed instructions for completing the required tables are provided in MS Word and PDF form at http://grants.nih.gov/grants/funding/424/index.htm#inst

Application Format, pt. 3 of 3

- See p. 232 of the SF 424 Application Guide for acceptable appendices for training grant applications. These would be materials referred to in the text but too cumbersome to include in the text, such as:

  – Syllabi for key courses and electives

  – Retreats, seminars and other program activity agendas

  – Examples of evaluation forms used for students and the program as a whole

Budget Structure - Predoctoral

- Program budgets are tied to number and type of slots requested
- For each full-time predoctoral slot, request:
  - Stipend support (use NRSA stipend table for predoctoral trainees)
  - Predoctoral Tuition (fees 60% of costs up to $16,000)
  - Travel ($2,000 per trainee)
  - Training-related expenses ($6,500 per trainee)
  - Health insurance ($2,000 per trainee)
- A predoctoral trainee can be supported for up to 5 years

Budget Structure - Postdoctoral

- For each full-time postdoctoral slot, request:
  - Stipend support (use NRSA stipend table for postdoctoral trainees
    - For TBN postdoc, use year 3 experience level
  - Tuition:
    - For degree-seeking postdocs: 60% of costs up to $16,000
    - For non degree postdocs: up to $4,500
  - Travel ($2,000 per trainee)
  - Training-related expenses ($6,500 per trainee)
  - Health insurance ($4,000 per trainee)
- A postdoctoral trainee can be supported for up to 3 years

Budget Structure – Short Term

- For each short-term trainee slot, request:
  - Predoctoral: ¼ annual NRSA predoctoral stipend
  - Postdoctoral: ¼ annual NRSA postdoctoral stipend, level 0 year
  - Tuition: #1/4 of actual cost up to $4,000
  - Travel (not provided for short-term trainee positions)
  - Training-related expenses: $1,100 per short-term trainee
  - Health insurance (not provided for short-term trainee positions)

- NRSA tables at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-16-047.html

Core Review Criteria

- Training Program & Environment
- Training Program Director(s)/Principal Investigator(s)
- Preceptors/Mentors
- Trainees
- Training Record
- Existing programs see "Renewals" in Section V.1 for additional criteria

Additional Review Considerations

- Recruitment & Retention to Enhance Diversity

- Training in the Responsible Conduct of Research

- Multiple PD/PI Management Plan
  - If you propose a Multiple PD/PI program, you must have a Multiple PD/PI management plan and explain how multi PD/PI leadership benefits the program and the trainees

Key Dates, pt. 1

- Letters of Intent: due March 18, 2016
  - Help us by sending a letter of intent if you think you might apply

- Application Receipt: April 18, 2016
  - Applications must be submitted electronically via grants.gov by 5 PM local time of applicant organization
  - No late applications will be accepted

Key Dates, pt. 2

- Peer Review: July 2016 (est)
- Council Review: September 2016
- Funding Notification: @ November 2016
- Funding for new awards begins: July 1, 2017