National Institute of Diabetes and Digestive and Kidney Diseases

Pre-Application Webinar

RFA-DK-22-017

NIDDK Information Network Coordinating Unit: dkNET-CU

Dec 13, 2022

National Institute of Diabetes and Digestive and Kidney Diseases

National Institute of Diabetes and Digestive and Kidney Diseases

dkNET program team

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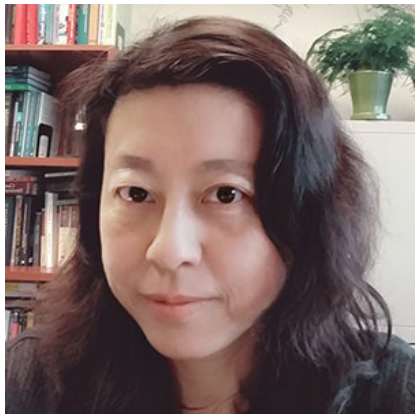

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Agenda

1. **Presentation ~ 30 min**
   - Overview of the dkNET program (currently in its 10'th yr)
   - The renewal: objectives and requirements
   - FAQ and answers
2. **Open Q&A ~30-45 min**
3. **Breakout groups (interested people can find collaborators)**
   - During the webinar: use chat to broadcast your interest and expertise, or to directly message anyone

** **webinar is recorded for NIDDK internal review, will not be shared**

** **slides & a FAQ document will be shared through the registration site**

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A BRIEF OVERVIEW OF DKNET

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A brief history of the dkNET

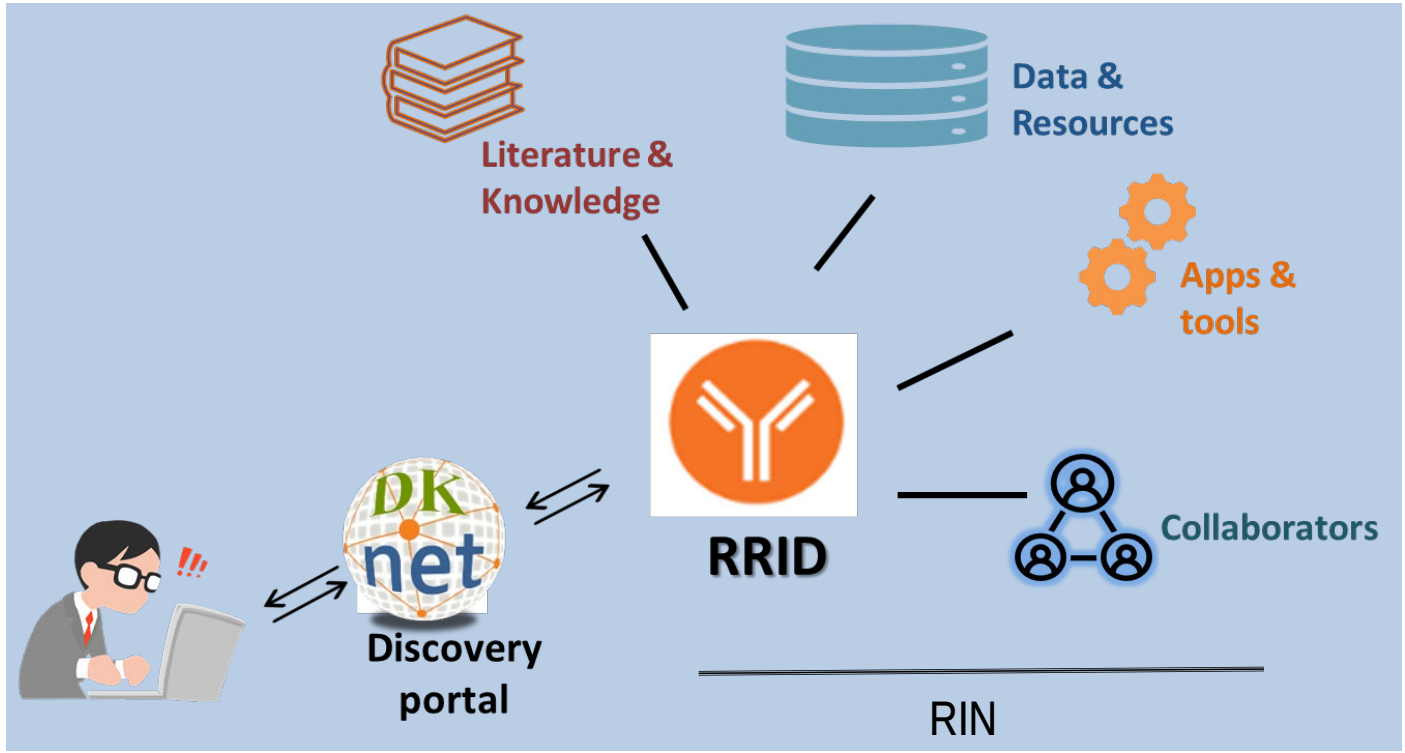
Established in 2011, to address community's pressing needs in Data science, by

- Providing the **discovery portal** for finding relevant datasets, information, and resources
- Facilitating information sharing between NIDDK-supported resources and the scientific community
- Promoting FAIR practice, and Rigor & Reproducibility (R&R)
- Building community and workforce

Discovery portal

dkNET: funding cycle 1
2011-2017

RFA-DK-11-030: " to support development of **a web portal**...**to facilitate information sharing** between NIDDK-supported resources and the scientific community, ..."



RIN: Resource Information Network

RRID: Research Resource IDentifiers

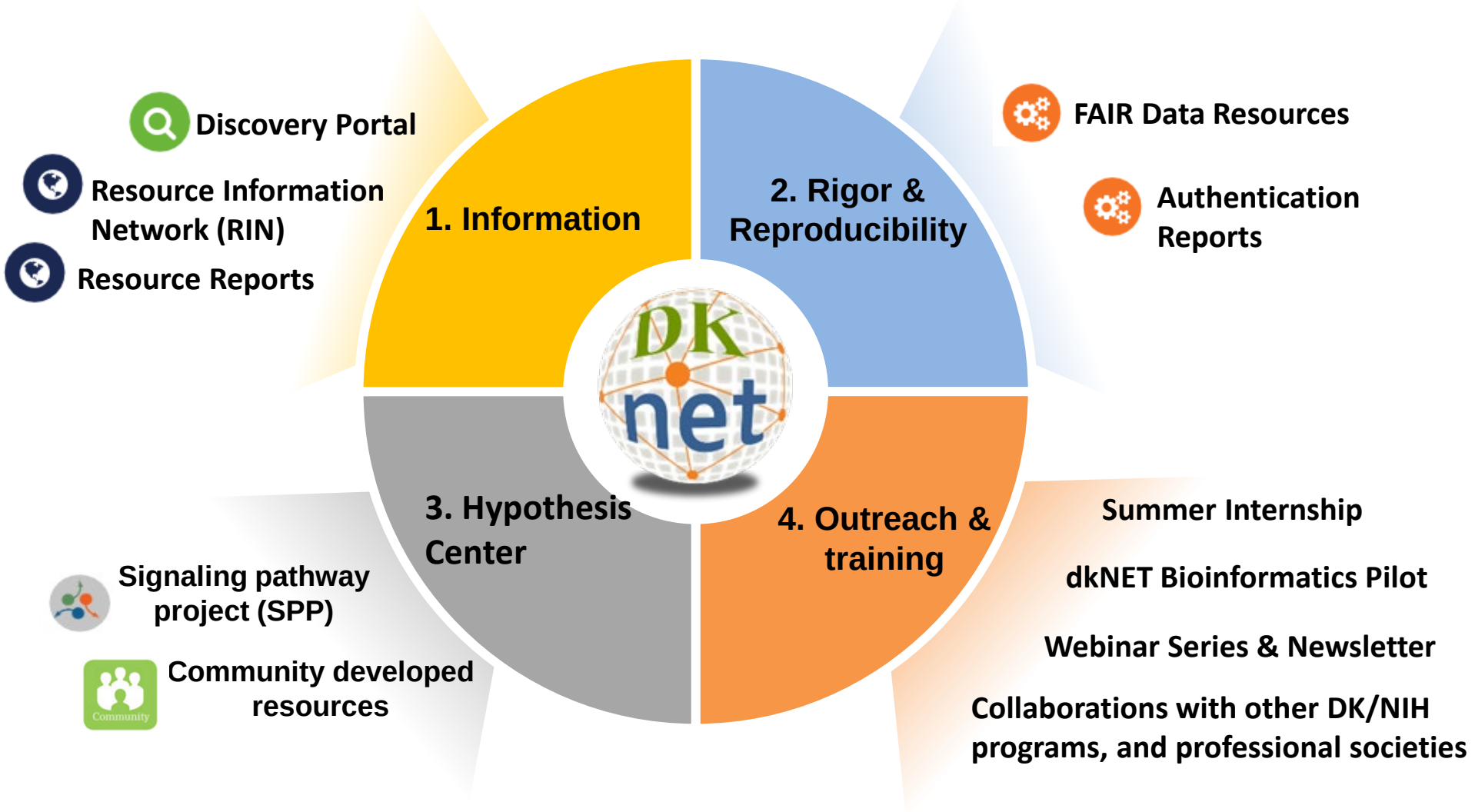
Main goal: not to build resources, rather, to connect researchers to resources

Status

> over 278 resources, 800M searchable entities,
> 13,000 visits in 2021

dkNET: funding cycle 2

RFA-DK-17-010, 2018-2023



An example tool: FAIR Resource Report

I'm planning my experiment, and would like to find and evaluate key resources.

I'm publishing a paper, and would like to find
- RRIDs for citing key resources
- Where to put my data

Resource Report

For antibodies, plasmids, biosamples, cell lines, models, tools and services:

- Citations of usage and mentions
- Validated or recommended?
- Who are using the resource? Do they have issues?
- Users near me

FAIR Data repositories

- List of DK relevant repositories, recommended by NLM and various journals
- FAIR Standards
- Data maintenance
- Data size limit and cost
- Dynamic database

3. the Hypothesis Center

— A FAIR Platform for Collaboration & Discovery

- A hub for data-driven hypothesis generation
- A collection of ***community-built*** tools for exploration of different datasets
- Promoting findability and awareness
- Providing information & tutorials
- Facilitating utilization & collaboration

Signaling Pathway Project

HiRN
HUMAN ISLET RESEARCH NETWORK

MMPC
National Mouse Metabolic Phenotyping Center

TYPE 1 DIABETES KNOWLEDGE PORTAL
Powered by the AMP-T2DKP platform

appyters
A catalog of appyter notebooks

4. Community outreach and workforce development

Building a community

- Newsletters (1-2/month)
- Seminar series (~ 30 resource webinars a year)
- Social media networks
- dkNET annual meetings
- Outreach activities at NIDDK large consortia's annual meetings (HIRN, …)
- Outreach activities at major professional society meetings (Endo, Cell Bio,…),

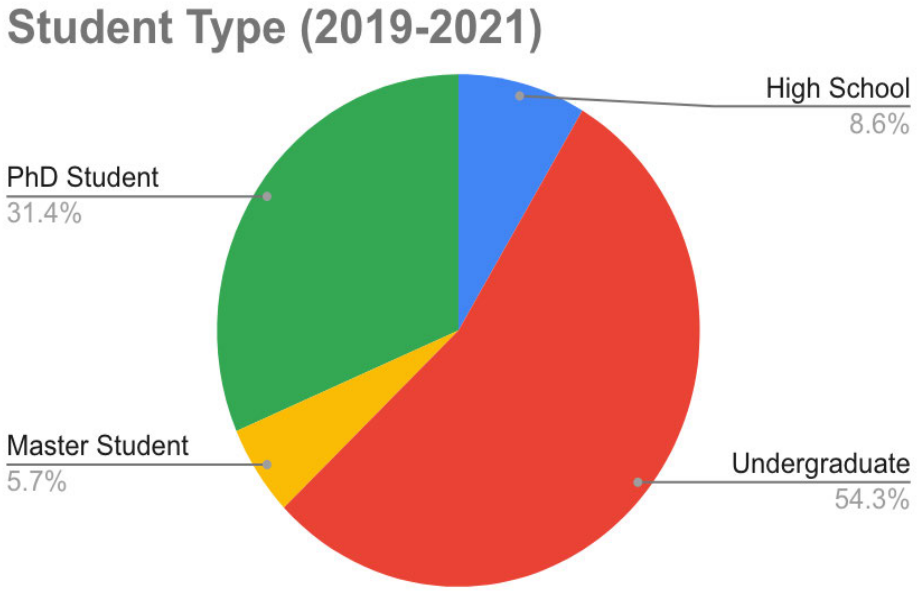
Opportunities to the next generation scientists

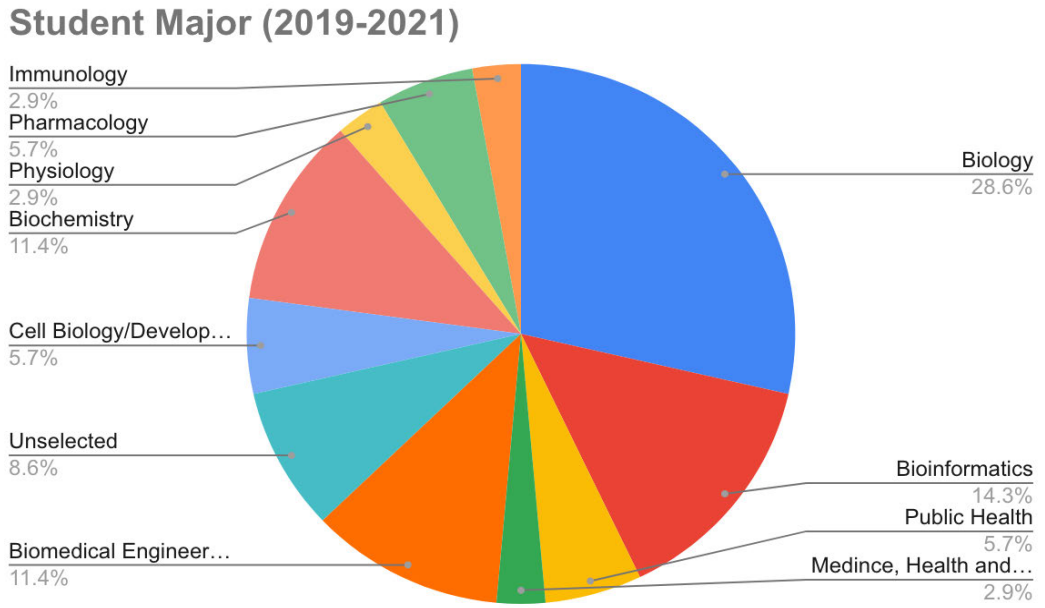
- dkNET Summer of Data Student Program
- dkNET New Investigator Pilot funding Program in Bioinformatics

Summer Data Student Internship
2019-

Program Duration
Total # of students trained (2019-2022): ~50

Annual **milestones** in engaging minority serving institutes and students from diverse backgrounds





dkNET New Investigator Pilot Program in Bioinformatics
2020-2022

- **Objective**: support **new investigators** to apply **innovative bioinformatics** approaches to important research problems in Diabetes, Endocrinology and Metabolic Diseases
- $150,000 direct cost/yr, 1-2 years

- Applications received : 32

  Career Stages

  26 ESIs, 6 New Investigators

  Area of training:

  12 in (experimental) endocrinology or related

  20 in quantitative sciences

- **Awards made: 13**

  2020: 3 awards, 2021: 5 awards; 2022: 5 awards

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RAF-DK-22-017: THE RENEWAL

National Institute of Diabetes and Digestive and Kidney Diseases

Purpose

RFA-DK-22-017:

“The purpose of this Funding Opportunity Announcement (FOA) is to continue development and expansion of the NIDDK Information Network (dkNET) under the direction of the dkNET Coordinating Unit (dkNET-CU). dkNET supports the NIDDK community’s needs in data science by providing an information portal that connects users to data, analytical tools, and other biomedical research resources. Additionally, dkNET supports researchers by providing a hub for data-driven hypothesis generation; a suite of tools that assist users in FAIR (Findable, Accessible, Interoperable, Reusable) practice, and in improving rigor and reproducibility in research; and a variety of programs to enhance community engagement and workforce development. The dkNET-CU will be responsible for providing the scientific direction, vision, and administrative management to advance dkNET goals.”

Objectives of the renewal

The dkNET platform

- Continue to develop and enhance its components
- **Expand to support DK-specific data types and data science needs, including the need in leveraging Big Data science to accelerate innovation and discovery (the hypothesis center)**
- **Bringing in more advanced data science technologies (AI/ML, cloud, open science)**

The people and stakeholders

- **Recruit to the dkNET-Coordinating Unit domain experts in both basic and clinical diabetes research**
- **More** actively engage the community to contribute domain knowledge, datasets, and data science resources.
- **Engage the community to participate in decision making and governance**
- **Improve collaborations** with NIDDK central repository and other NIDDK-funded programs

The workforce development

- **More actively** outreach to and engage with the community, to recruit students/trainees from diverse backgrounds
- **Enhance and expand** collaborations with related trans-DK and trans-NIH programs

Budget

$2M TC/yr for 5 years

(from the $1M TC/yr in the current funding cycle)

Does not include the budget for the bioinformatics pilot funding program

FAQ

Is the competition open

Yes

Both the current team and new teams can apply

MPI team?

Under "Research Strategies" of FOA (RFA-DK-22-017)

> "the application **must be** submitted as **a multiple PD/PI application**, with a minimum of 2 PDs/PIs that include at least one computational scientist and one diabetes researcher"

The team should have

- a demonstrated track record in developing community resources such as biomedical data repositories and knowledge portals;
- expertise in developing and utilizing modern data science technologies and platforms;
- deep appreciation of the important research questions in diabetes, endocrinology and metabolic diseases;
- understanding of the unmet needs in data science of the NIDDK community; knowledge of the generation and utilization of NIDDK-specific data types;
- experiences in effectively communicating, outreaching, engaging with scientists from diverse backgrounds, including scientists from underrepresented groups;
- familiarity with the NIDDK-funded programs
- **Serious commitment**

No requirement regarding seniority of the PIs

Foreign collaborators

Allowed

https://grants.nih.gov/grants/guide/rfa-files/rfa-dk-22-017.html :

Section III. Eligibility Information

- **Foreign Institutions**
- Non-domestic (non-U.S.) Entities (Foreign Institutions) **are not** eligible to apply.
- Non-domestic (non-U.S.) components of U.S. Organizations **are not** eligible to apply.
- Foreign components, as defined in the *NIH Grants Policy Statement*, **are** allowed.

OPEN Q&A

thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
dziękuję
go raibh maith agat
mochchakkeram
sukriya
kop khun krap
terima kasih
grazie
arigatō
takk
dakujem
мерси
спасибо
bedankt
hvala
mauruuru
sagolun
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tapadh leat
dank je
dankon
dankie
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