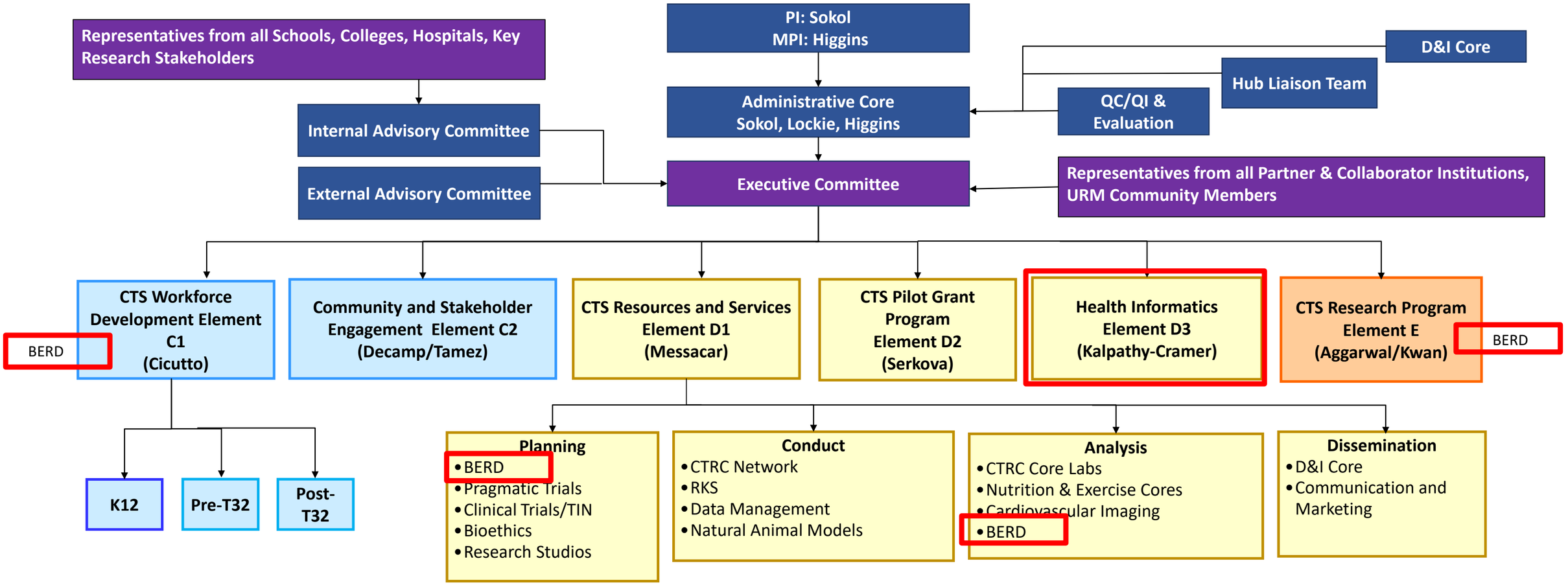
BERD

Nichole E Carlson , PhD
Director BERD Program

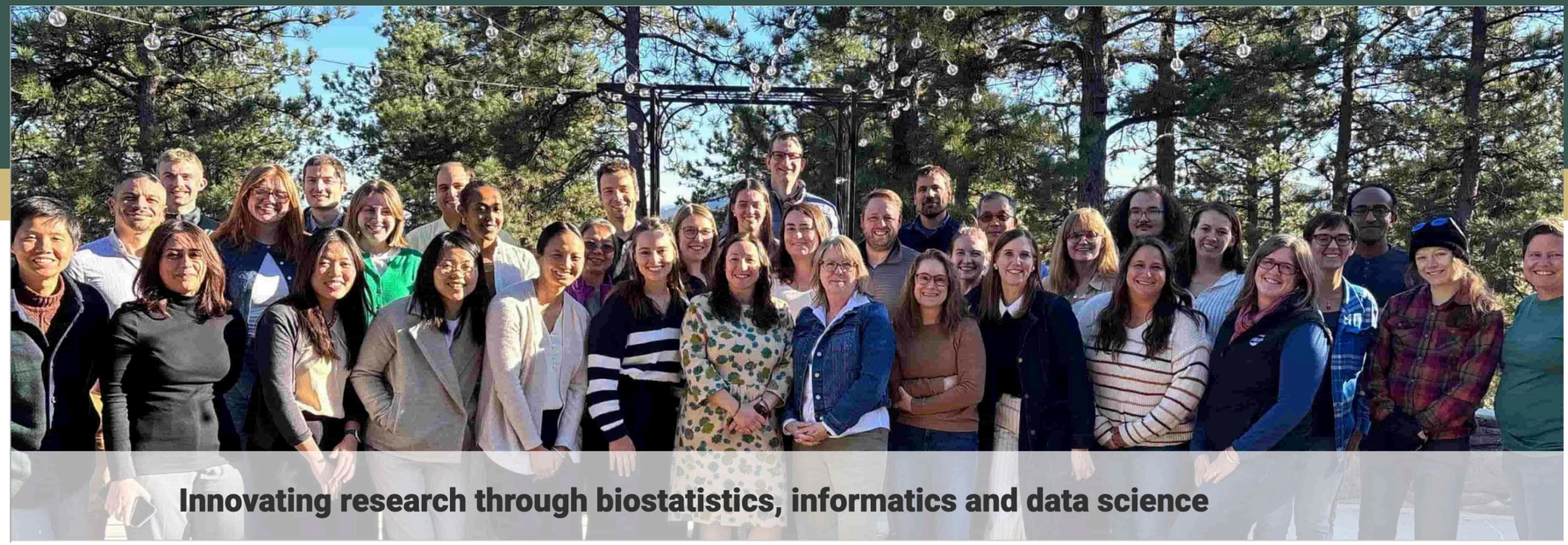
Presenter: Katerina Kechris, PhD
Associate Director of ’Omics and Data Science - CIDA

cctsi.cuanschutz.edu

Integration Across CCTSI



Leadership Team - CIDA and BERD



Nichole Carlson, PhD - Directs CIDA and BERD
Elected as BIDS enterprise committee co-lead for NCATS.

Mary Sammel, ScD
Professor, Associate Director (CIDA)

Mary Sammel, ScD - Directs the BERD training program

Co-founded a national organization for practicing masters biostatisticians and statisticians

Camille Hochheimer, PhD
Research Associate and Consulting Manager

Camille Hochheimer, PhD: Led the formation of the CU Biostatistics and Bioinformatics Ecosystem (CUBE)

Katerina Kechris, PhD - Directs Bioinformatics and Data Science collaboration

R25 Multi-omics summer training grant, 2nd class June 2026
Analytic Coordinating Center PI – U01 grant

The Center for Innovative Design and Analysis

The Campus Wide Biostatistics and Data Science Resource and Research Center

Shared Center

Anschutz School of Medicine & colorado school of public health
Public Health Elevated

Key Partnerships

COLORADO Child Health Research INSTITUTE | Anschutz

Biostatistics & Informatics
colorado school of public health

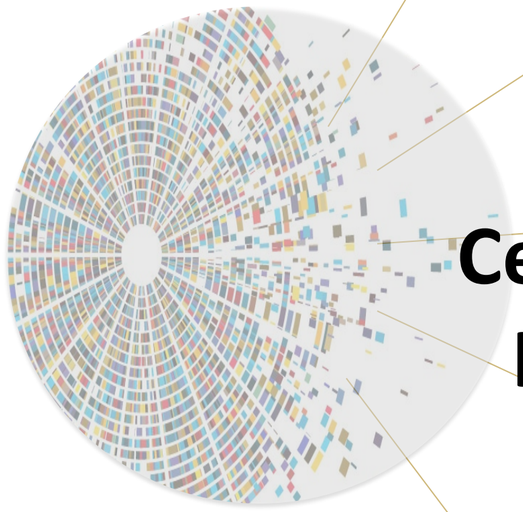
Anschutz | Colorado Clinical and Translational Sciences Institute (CCTSI)

CUBE

CU BIOSTATISTICS & BIOINFORMATICS ECOSYSTEM

Not sure where to start?

Connect with a CUBE Navigator who will help you find the right team to support your biostatistics and data science needs.



Central Hub

Collaboration
- **Grant development (BERD)**
- Collaboration Agreements
- Partnerships with other

Consulting
- **1-hour consults (BERD)**
- Short term, stand alone projects
- External Partnerships

Discovery (methods)
- **RWE Projects**
- **Rigor & Reproducibility Projects**
- **Methodology Projects (BERD)**
- Strategic hiring/development
- **Software packages (BERD)**

Education
- **6-week short courses (BERD)**
- **1-Week CU Data Week (BERD)**

Admin and Computing
- Billing
- **Project Management (BERD)**
- **Messaging (BERD)**
- Github server
- Business planning/sustainability

Biostatistics Collaboration

Develop a strong relationship with biostatisticians who are invested in supporting your long-term grants and analysis projects.

43 collaborative agreements with various units.

Fully establishes team science paradigm with the units.

Strategic Goals - BERD

1. **Goal**: **Being able to form the right analytic team at the right time**

Roadblocks addressed: Effectiveness and efficiency of translational research study design & Team Formation and Efficient and Nimble Resources

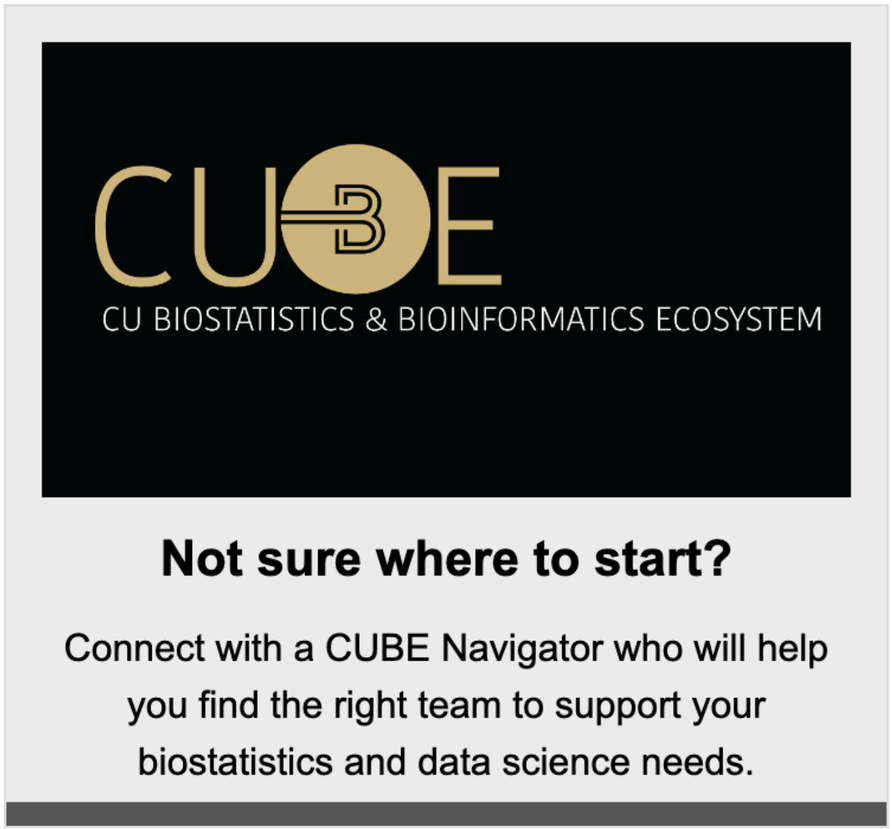
2. **Goal: To have BERD experts be well trained in the communication and issues in team science.**

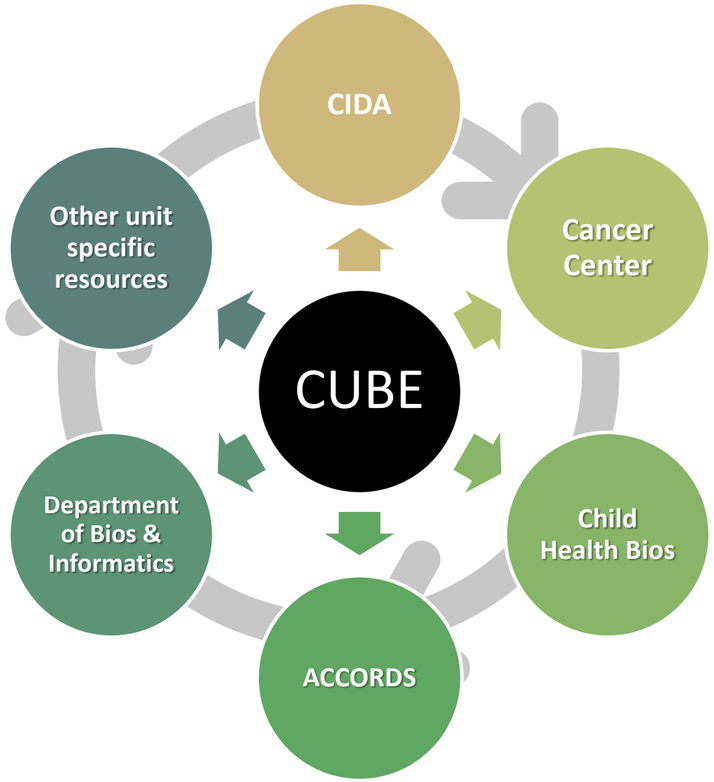
Roadblocks addressed: Team Formation, Seamless Analytics, Efficient and Nimble Resources & BERD literacy.

3. **New Goal (not in grant): To better integrate BERD and Informatics for more rigorous and reproducible RWE and AI discovery**

Roadblocks addressed: Team Formation, Seamless Analytics, Efficient and Nimble Resources

Year 3 Progress & Impact





1. Partnership with the 5 major biostatistics programs and 2 bioinformatics programs.
2. Creates a central point of entry and navigation system for the investigator. Had all units talking about requests together for the first time. Launching 4/8/2024.
3. https://coloradosph.cuanschutz.edu/research-and-practice/centers-programs/cida/connect-with-us/cube-

Results from CUBE for FY25

	N = 106 requests
Number of cores project sent to	
0	4 (3.8%)
1	97 (91.5%)
2	4 (3.8%)
3	1 (0.9%)
Communication between analytic cores	48 (45.2%)
Level of interaction with investigator	
Intake form only	79 (84.0%)
Email	14 (14.9%)
Meeting	1 (1.1%)
Investigator position	
Professor	18 (17.0%)
Associate Professor	11 (10.4%)
Assistant Professor	20 (18.9%)
Fellow	11 (10.4%)
Resident	13 (12.3%)
Student	23 (21.7%)
Other	10 (9.4%)

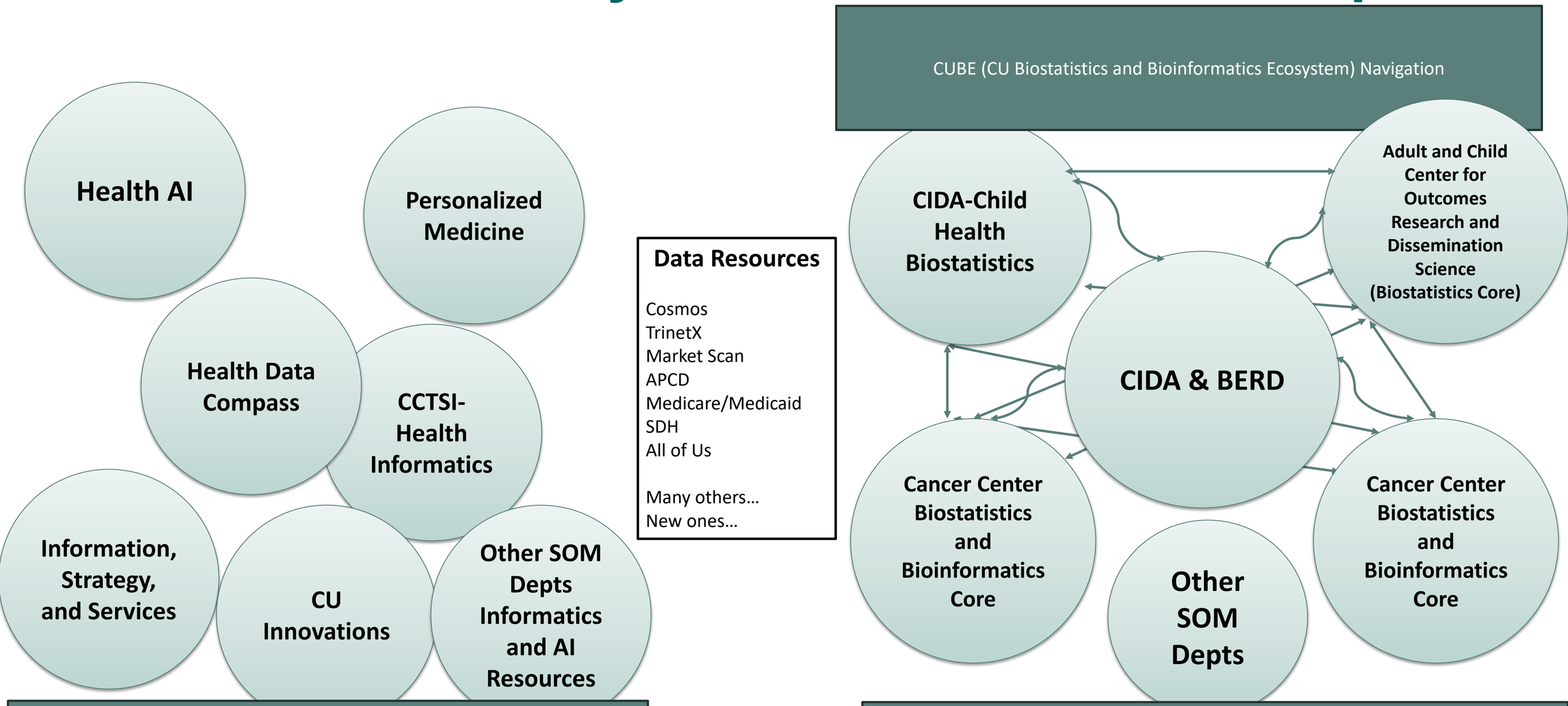
Key Take Aways

- To give a perspective Duke gets about 150 requests a year in a much larger ecosystem and 5+ years of existence.
- Most projects can be matched to a single group.
- 45% of the requests have a dialog between two (or more) units prior to giving the investigator a suggestion.
- Intake form with shared communication (out of email).
- All ranks make requests for navigation.

More Results from CUBE FY25

	N = 106 requests
Primary goal	
Abstract submission	2 (1.9%)
Grant application	26 (24.5%)
IRB submission	2 (1.9%)
Long-term collaboration	5 (4.7%)
Manuscript submission	10 (9.4%)
One-hour consultation	50 (47.2%)
Other	7 (6.6%)
Study design	4 (3.8%)
Biostatistics requested	34 (70.8%)
Bioinformatics requested	18 (37.5%)

Informatics & Analytic Structure of AMC Campus



Academic Homes as a Foundation
Biomedical Informatics, many other Dept level appointments

Academic Homes as a Foundation
Biostatistics and Informatics, Pediatrics, Medicine-Health Management and Policy Division

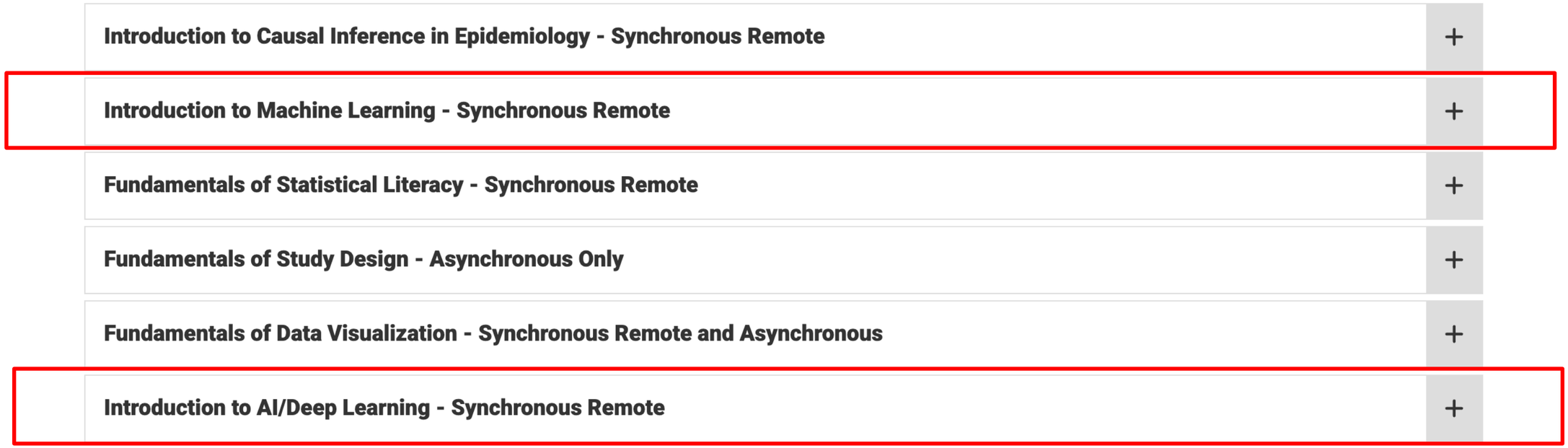
Year 4 Plans for CUBE

- ***Decide on a home for CUBE. Should we redistribute BERD funds and take this on or partially fund it? Should the VCR be the home?***

- ***CUBE is ready to expand to data resources and then the next year work consider informatics (if funding possible).***

- ***We still need help getting the word out. How does communication work at your institution and what are best strategies based on your recommendations?***

Year 3 Progress & Impact in Education



- We developed new offerings to address needs in AI. The focus is on AI models. Informatics is addressing using AI tools for research.
- We have been working hard to develop new marketing pipelines and enrollment increased this year.

Year 4 Plans for Education

- Developing partnerships with training programs, including integration with Bioinformatics (we have a successful partnership with our Tribal Epidemiology Center where their students take these courses as part of the grant).
- Consider new delivery modes that meet the needs of learners (Coursera, fully online)
- Target market is still preferred to be CUAnschutz as these course create a pipeline for team science and collaboration.
- Considering a rotation of more courses but every other year.

Year 4 Plans Reproducibility and Rigor

- Last year Nichole presented on reproducibility and rigor with TrinetX. The paper is under review at Annals of Internal Medicine.
- Next project is being developed using Orthopedics as the example.
- Reproducibility questions on comparing between CU data vs. TrinetX data and can we use TrinetX to compare CU outcomes with national outcomes.
- Also, digging under the hood on how the samples are matched.
- BERD and Bioinformatics partnering to access and analyze RWD

Response to EAC Critiques

Previous year's EAC critique: Concerns were raised about the momentum of the BERD and Informatics partnership with the leadership change in Health Data Compass.

- **We are both on new CTSA/NCATS Enterprise Committee BIDS (Biostatistics, Biomedical Informatics, and Data Science). Nichole is co-lead of the committee.**

- **We have met with Health Data Compass to understand the path forward. Considering a Unit Dedicated Resource for CCTSI, but new resources will have to be involved.**

- **We are sharing education programming and piloting tools together.**

Questions for Discussion

Is your EHR/RWD infrastructure under your CTSA?

Suggestions for how should we navigate our EHR/RWD infrastructure since HDC has no direct responsibility to CCTSI.

How does your CTSA prioritize all of the RWD platforms including how you develop user bases and the level of support provided for the resource?

Where do you think CTSA's are going in emphasizing RWD/RWE and how much should our units pivot to prioritize RWD/RWE in team science?