



University of Colorado  
Anschutz Medical Campus

# DISSEMINATION & IMPLEMENTATION SCIENCE GRADUATE CERTIFICATE

<https://medschool.cuanschutz.edu/accords/DICert>





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ADULT AND CHILD CENTER FOR OUTCOMES  
RESEARCH AND DELIVERY SCIENCE

UNIVERSITY OF COLORADO  
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Sciences Institute (CCTSI)

UNIVERSITY OF COLORADO DENVER | ANSCHUTZ MEDICAL CAMPUS

Clinical Sciences Graduate Program



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<https://medschool.cuanschutz.edu/accords/DICert>

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University of Colorado  
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Meredith Fort, PhD



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PREVENTION  
RESEARCH CENTER in St. Louis  
Promoting Healthy Communities

VA



U.S. Department of Veterans Affairs  
Veterans Health Administration  
Quality Enhancement Research Initiative

# PRESENTATION OVERVIEW

## **What, Who, Why, Where, When, How?**

- ▶ What is dissemination & implementation (D&I) science?
- ▶ Who should pursue the D&I science certificate?
- ▶ Why pursue the D&I science graduate certificate?
- ▶ Where are certificate courses held?
- ▶ When should I apply?
- ▶ How do I apply?

# WHAT

# WHAT IS DISSEMINATION & IMPLEMENTATION (D&I) SCIENCE?

## Definitions

- ▶ Dissemination research: Scientific study of targeted distribution of information and intervention materials to a specific public health or clinical practice audience. (*How best to package, communicate about, and deliver evidence-based interventions?*)
- ▶ Implementation Research: Scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings to improve individual outcomes and benefit population health. (*How best to support the uptake, integration, and sustained use of evidence-based interventions?*)

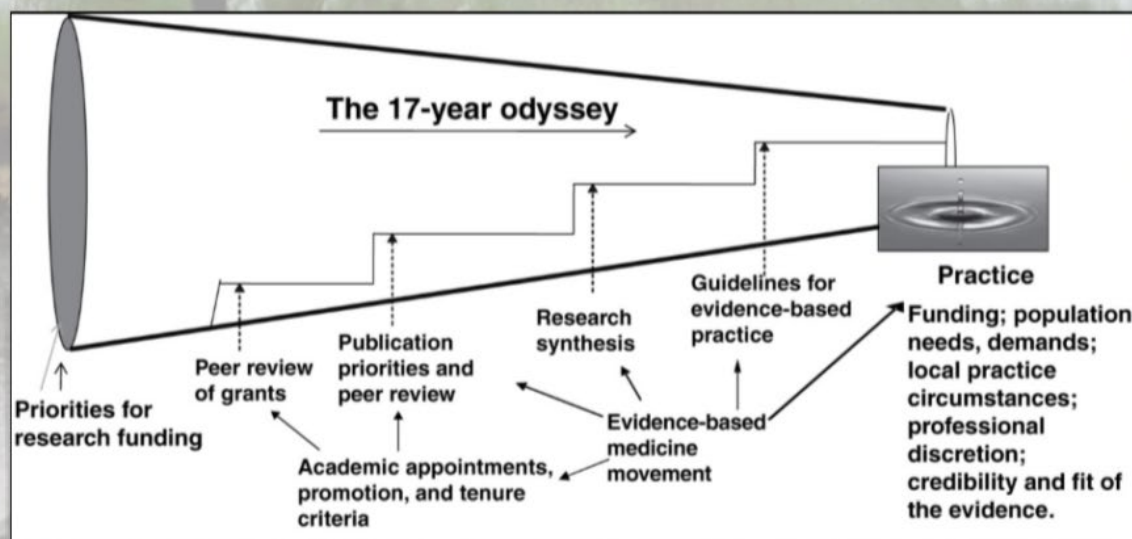
See: PAR-22-105 – Dissemination and Implementation Research in Health



# WHAT

# WHAT IS DISSEMINATION & IMPLEMENTATION (D&I) SCIENCE?

## Research to Practice Pipeline



## With Traditional D&I Approach

14%, 17 years

But there is hope. . .

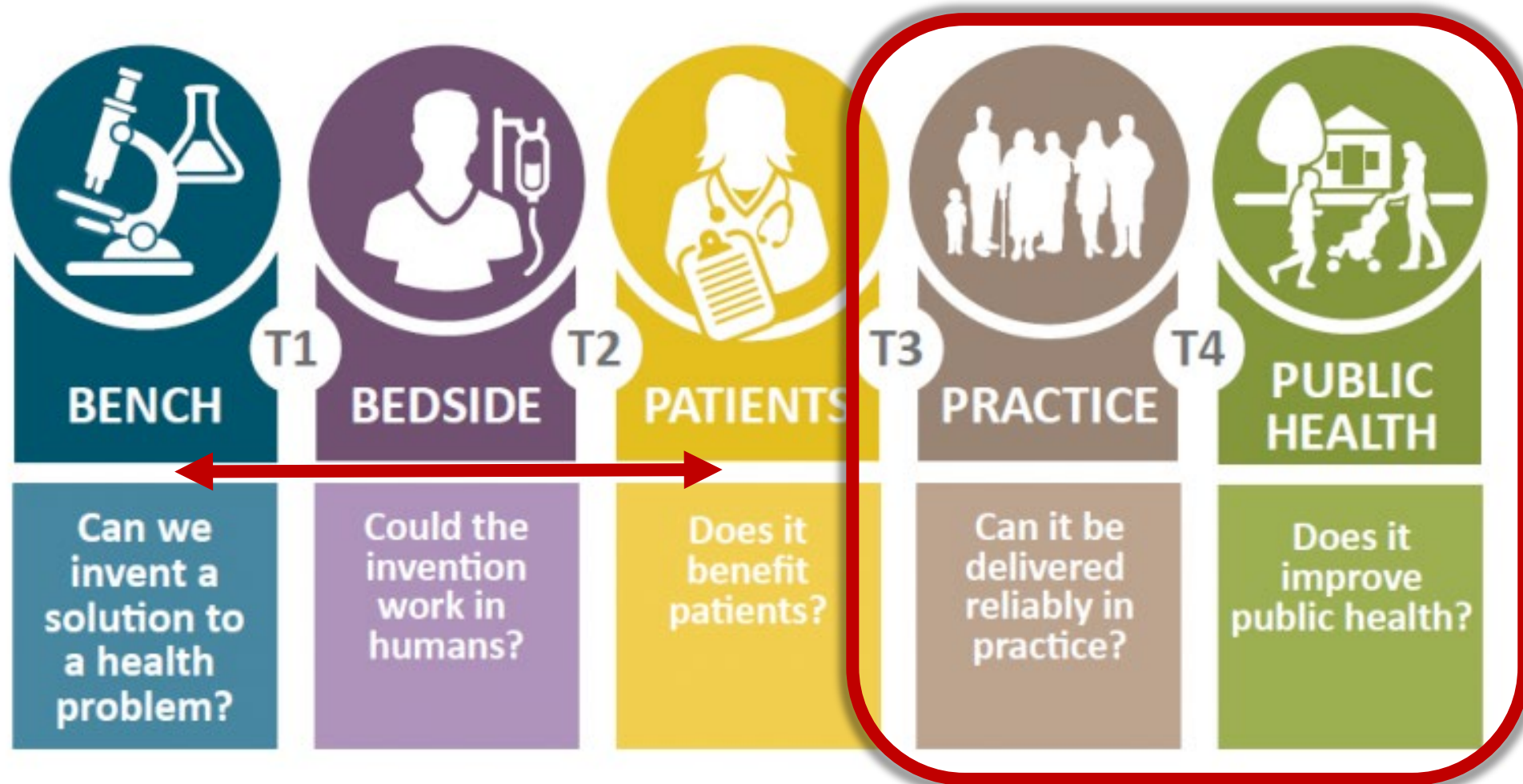
## With Active D&I Approach

May be able to achieve up to 80%, 3 years

Balas & Boren, 2000; Green, 2008, Fixsen, Blasé, Timbers & Wolf, 2001, Saldana & Chamberlain, 2012

# WHAT

## WHAT IS DISSEMINATION & IMPLEMENTATION (D&I) SCIENCE?



# WHAT

# WHAT IS THE RATIONALE FOR OUR D&I GRADUATE CERTIFICATE?

## Rationale

- ▶ Addresses a local and national need for rigorous training in D&I Science in health services and public health research
- ▶ Leverages the outstanding D&I faculty and resources on our campus, and our connections with other national D&I leaders as guest lecturers



# WHAT

# WHAT IS THE EDUCATIONAL PHILOSOPHY?

## Educational Philosophy

- ▶ Tailor materials and assignments to each student's current D&I experience level, professional background, and future goals
- ▶ Personal attention is important to ensure individual attainment of D&I competencies
  - Small class sizes: 10-15 people maximum
- ▶ Balance theoretical and applied learning
  - Provide opportunities for students to apply the course theoretical/didactic content to advance a specific research goal in a clinical or public health setting

# WHAT

# WHAT WILL I LEARN?

## **Selected D&I Competencies\* are addressed, including:**

- ▶ Develop a rationale for why/how to select a D&I framework
- ▶ Design pragmatic interventions and evaluations
- ▶ Select appropriate process/outcome measures
- ▶ Balance the need for adaptations with fidelity
- ▶ Use of mixed methods for evaluation in D&I studies
- ▶ Engage key stakeholders throughout the process

*\*Padek et al., Implementation Science, 2015; Tabak et al., American Journal of Preventive Medicine, 2017*

# WHAT

## WHAT ARE THE COURSES?

Total of 12 credit hours completed within a 3-year period

### ► Required Courses (8 credit hours)

Required Courses	Instructor	Credits	Offered
CLSC 7653 Introduction to Dissemination and Implementation Research in Health	Rabin/Studts	3	Fall (annually)
CLSC 6560 Designs and Mixed Methods in Implementation Research	Holtrop/Fort	3	Spring (annually)
CLSC 6750 Designing for Dissemination and Sustainability	Kwan	2	Fall (annually)



# WHAT

## WHAT ARE THE COURSES?

### ► Elective Courses (4 credit hours)

Elective Courses	Instructor	Credits	Offered
CLSC 7663 Context and Adaptation in Implementation Research	Studts/Rabin	2	Spring (annually)
CLSC 6770 Grant-writing for Dissemination and Implementation Research	Glasgow/Brownson	2	Summer (annually)
CLSC 6850 Advanced Topics in Dissemination and Implementation Science	Huebschmann/Trinkley	1-2	Fall (annually)
Electives approved by Certificate Director		Up to 3	Varies

# WHAT

## WHAT ARE THE COURSES?

- ▶ ***Introduction to Dissemination and Implementation Research in Health (CLSC 7653 – Drs. Rabin and Studts)***
  - Overview of key D&I models, methods, and measures
  - Supports students to develop D&I grant or Quality Improvement (QI) project proposal over the semester
  - Ideas that students develop in this initial course may be further developed in additional later courses (see next slide)

# WHAT

## WHAT ARE THE COURSES?

### ► ***Designs and Mixed Methods in Implementation Research*** **(CLSC 6560 – Drs. Holtrop and Fort)**

- In-depth examination of study designs
- Qualitative, quantitative, and mixed-methods approaches
- Complete a D&I methods section for a research proposal



# WHAT

## WHAT ARE THE COURSES?

### ► *Designing for Dissemination and Sustainability* (CLSC 6750 – Dr. Kwan)

- Learn about design-thinking processes and diagnosing situational context
- Engagement with partners for co-design
- Planning for equitable implementation and sustainment from the start

# WHAT

## WHAT ARE THE COURSES?

- ▶ ***Context and Adaptation in Dissemination & Implementation Research***  
**(CLSC 7663 – Drs. Studts and Rabin)**
  - Learn to assess, guide, and balance adaptations with fidelity
  - Develop understanding and skills for assessing multi-level and dynamic contextual issues in D&I research
  - Recognize the role of D&I science in advancing health equity

# WHAT

## WHAT ARE THE COURSES?

- ▶ ***Grant-writing for Dissemination & Implementation Science (CLSC 6770 – Drs. Glasgow and Brownson)***
  - Led by Drs. Glasgow/Brownson with numerous other national D&I researchers participating
  - Intensive focus on sections of D&I grant applications
  - Emphasis on grant-writing strategies for D&I in particular
  - Students draft/revise grant sections and receive feedback
  - Leads up to a mock study section final exam



# WHAT

## WHAT ARE THE COURSES?

- ▶ ***Advanced Research Topics in D&I Science***  
**(CLSC 6850 – Drs. Huebschmann and Trinkley)**
  - Journal club discussions – presenting critiques of recent D&I publications followed by group discussion with our ACCORDS D&I team (includes Certificate faculty and many others)
  - Research presentations – deliver an oral research presentation to a small group of D&I Certificate faculty
  - Provide peer critiques

# WHAT

## WHAT DO STUDENTS THINK OF THE COURSES?

- ▶ *"I spent the last 13 years evaluating effectiveness in pragmatic intervention trials. Through that process I learned a great deal about the challenges of implementation, particularly when grant funding ends. The dissemination and implementation certificate program is developing my skillset in incorporating implementation and dissemination science into all phases of intervention development and evaluation."*
  - **Nikki Wagner**, PhD - Assistant Professor, Medicine-Internal Medicine, University of Colorado School of Medicine
  
- ▶ *"I am taking this class because I have discovered that creating predictive models is the easy part. Implementing them and understanding where they can provide value is the real challenge."*
  - **Douglas Barnaby**, MD, MSc – Assistant Professor of Emergency Medicine, Northwell Health, Hofstra University School of Medicine, Feinstein Institute for Medical Research

# WHAT

## WHAT DO STUDENTS THINK OF THE PROGRAM?

- ▶ *“I chose this specific program for the incredible faculty and the ability to take courses remotely (since I’m based in NYC). After just 6 months, I’ve acquired foundational skills in D&I Science, which I have already applied to my ongoing K76-supported research studies.”*
  - **Parag Goyal**, MD, MSc, FACC, FHFSa – Assistant Professor of Medicine; Etingen Family Clinical Scholar of Medicine; Director, Heart Failure with Preserved Ejection Fraction Program; Director, Cardiac Amyloidosis Program, Weill Cornell Medicine
- ▶ *“Through the D&I Certificate program, I have received training in selecting and using implementation science frameworks to guide and design measurement for... studies, using adaptation frameworks to study modifications and adaptations in a rigorous manner, and mixed methods approaches to design and data collection. The...program and my connections with faculty have also been instrumental in helping me take the next step in my research – applying for NIMH funding.”*
  - **Sarah Kennedy**, PhD – Assistant Professor, Department of Psychiatry; Licensed Clinical Psychologist, Pediatric Mental Health Institute; University of Colorado School of Medicine



## Target Audience

- ▶ Researchers interested in conducting T3-T4 translational research with a focus on the dissemination and implementation of evidence-based programs
- ▶ Professionals in health services, community health, and public health research

# WHY

# WHY PURSUE THE D&I SCIENCE GRADUATE CERTIFICATE?

## Rationale for individuals in different career stages

- ▶ K-awardees: Robust coursework for a D&I training goal on a career development award
- ▶ Mid-career faculty: Become a “home-grown” local faculty expert for D&I research methods in your institution
- ▶ PhD/DrPH students: potential area of minor concentration research methods
- ▶ Exploring areas for a PhD: test out the field of D&I science before committing to research in this area

# WHERE

# WHERE ARE CERTIFICATE COURSES HELD?

## **Format**

- ▶ All courses are fully available online (Zoom® videoconference platform) and meet “live” – our current students participate remotely from locations across the USA and Canada

## **Academic Home**

- ▶ Collaboration with Clinical Science Graduate Program, part of the Colorado Clinical and Sciences Institute (CCTSI)
- ▶ Courses can be applied to graduate degrees at CU (MSCS, PhD)

# HOW

## HOW DO I APPLY?

<https://medschool.cuanschutz.edu/accords/cores-and-programs/dissemination-implementation-science-program/d-i-certificate-program#Cert-Admissions>

### Admissions

#### 2023 Application Cycle

The 2023 application cycle will be from January 15 – February 15



Admission Requirements



Required Application Documents



International Applicant Criteria

Degree: BA/BS

GPA: A minimum of 3.00 is recommended

Prerequisite courses: N/A

There is one application cycle per year with a start date in the Fall (August) semester

Application Link [↗](#)

# HOW

## HOW DO I APPLY?



Admission Requirements



Required Application Documents



International Applicant Criteria

- ▶ Degree: BA/BS minimum
- ▶ GPA: A minimum of 3.00 recommended
- ▶ There are no prerequisite courses for admission into the program



# HOW

## HOW DO I APPLY?



Admission Requirements



Required Application Documents



International Applicant Criteria

- ▶ Online Graduate School application (CU Anschutz)
- ▶ Statements of interest (250 word limit each):
  - What makes you interested in specialized training in D&I Science?
  - What do you hope to gain professionally from the Certificate program?
- ▶ Curriculum Vitae or Resume
- ▶ Transcripts from highest completed degree (MD applicants must include undergraduate degree transcript)
- ▶ Statement of how program will fit into current responsibilities (with optional letter of support)
- ▶ Application fee (\$50 for domestic applicants)

# HOW

## HOW DO I APPLY?



Admission Requirements



Required Application Documents



International Applicant Criteria

- ▶ All previously described required application documents should be submitted, and additional University requirements can be found at <https://www.ucdenver.edu/international-admissions/about-cu-denver/anschutz-medical-campus>
- ▶ Special requirements for submitting transcripts from non-US institutions ([Educational Credential Evaluators/ECE](#) or [World Education Services/WES](#) evaluation reports)
- ▶ TOEFL scores may be required; there may be other options and exceptions
- ▶ Application fee \$75 international)

# HOW

## HOW DO I APPLY?

- ▶ See [our website](#) for more information on the application and admissions process
- ▶ Link to application: <https://graduateschool.cuanschutz.edu/admissions/apply>
- ▶ To begin a new application:
  - 1) Select “CU Anschutz Non-Degree Information” under “Non-Degree Graduate Studies (Courses and Certificates)”
  - 2) When prompted for your academic interests, select “Certificate”
  - 3) Select the Dissemination and Implementation (D&I) Science graduate certificate program (this option will not be listed or available outside of the January 15 – February 15 application window)
- ▶ Between January 15 and February 15, if you have questions about accessing the correct application form, please contact [Galit.Mankin@cuanschutz.edu](mailto:Galit.Mankin@cuanschutz.edu) for assistance.

# HOW

# HOW MUCH DOES IT COST?

- ▶ Information on tuition costs (<https://www.cuanschutz.edu/student-finances/tuition-fees/graduate-school-2022-2023>)
  - Same tuition as the MS Clinical Sciences Program
    - ▶ 2022-2023 Colorado Resident = \$541/credit hour
    - ▶ 2022-2023 Non-resident = \$1,315/credit hour
- ▶ Reminder: 12 credit hours total to complete the Certificate, may be completed over 2-3 years.
- ▶ University of Colorado faculty members may use Tuition Assistance for courses if they are an eligible employee.



# WHEN

# WHEN TO APPLY?

## **Fall 2023 Certificate Cohort:**

- ▶ Application available January 15, 2023 on our website
- ▶ Due date is February 15, 2023
- ▶ Application reviews should be complete in late March/early April 2023 and all applicants will be notified via email of their status
- ▶ Courses begin in late August 2023



# ACKNOWLEDGEMENTS

It takes a village! Thank you!

## Primary sponsor: ACCORDS

- ▶ ACCORDS Director/Administration
  - Alison Kempe, MD
  - Jana Smilanich-Rose, MPA
- ▶ ACCORDS D&I Certificate Faculty
- ▶ D&I Certificate program administrator
  - Jordan Crawford, MPH



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## Secondary sponsor: CCTSI

- ▶ CCTSI Clinical Sciences Graduate Program
  - Lisa Cicutto, PhD, APN, RN
  - Galit Mankin, MSW
  - Amanda Whiting
- ▶ University of Colorado Graduate School



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**With support from CU's NIH-funded Implementation Science  
Center for Cancer Prevention and Control (Glasgow, PI)**



# CONTACT US

General Program questions: [Christina.Studts@cuanschutz.edu](mailto:Christina.Studts@cuanschutz.edu)

Application-specific questions: [Galit.Mankin@cuanschutz.edu](mailto:Galit.Mankin@cuanschutz.edu)







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→ YOUR QUESTIONS HERE ←

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