

NATIONAL
ACADEMIES

Sciences
Engineering
Medicine

Opening Session

Innovations in Pharmacy Training and Practice to
Advance Patient Care: A Workshop

May 29, 2025

*Jonathan Watanabe, Workshop Planning
Committee Chair*

Purpose

To bring together different leading-voices salient to pharmacy education and practice to explore collaborative initiatives with specific, measurable goals to reach a more impactful, sustainable, and representative future state for pharmacy.

Statements, recommendations, and opinions expressed here today are those of individual presenters and participants and are not necessarily endorsed or verified by the National Academies.

Discussions should not be construed as reflecting any group consensus.

"It is essential to the National Academies mission of providing evidence-based advice that participants in all our activities avoid political or partisan statements or commentary and maintain a culture of mutual respect. The statements and presentations during our activities are solely those of the individual participants and do not necessarily represent the views of other participants or the National Academies."

BOARD ON HEALTH CARE SERVICES
FORUM ON DRUG DISCOVERY, DEVELOPMENT, AND TRANSLATION
GLOBAL FORUM ON INNOVATION IN HEALTH PROFESSIONAL EDUCATION
FORUM ON MENTAL HEALTH AND SUBSTANCE USE DISORDERS
ROUNDTABLE ON QUALITY CARE FOR PEOPLE WITH SERIOUS ILLNESS



Workshop Sponsors

American Association of Colleges of Pharmacy

American College of Clinical Pharmacy

American Pharmacists Association

American Society of Health-System Pharmacists

Mary Anne Koda-Kimble

Pharmacy Deans Research Group

Walgreens Co.

Workshop Planning Committee

Jonathan H. Watanabe (Chair)

UCSF School of Pharmacy

Ranti Akiyode

Howard University College of Pharmacy

Thomas Bateman

Ernest Mario School of Pharmacy, Rutgers, The
State University of New Jersey

Nicole Brandt

University of Maryland School of Pharmacy

Marie A. Chisholm-Burns

Oregon Health & Sciences University

Suzanne Harris

UNC Eshelman School of Pharmacy

S. Claiborne "Clay" Johnston

Harbor Health

Kashelle Lockman

University of Iowa, Carver College of Medicine

Leigh Ann Ross

Auburn University, Harrison College of Pharmacy

Jennifer Bacci (NAM Pharmacy Fellow)

University of Washington School of Pharmacy

Statement of Task

...examine recent trends in the field of pharmacy and consider strategies for enhancing the pharmacy workforce and training to advance patient care and outcomes.

Four Pillars



Pharmacy
Deserts &
Workforce



Wellbeing



Financial
Sustainability



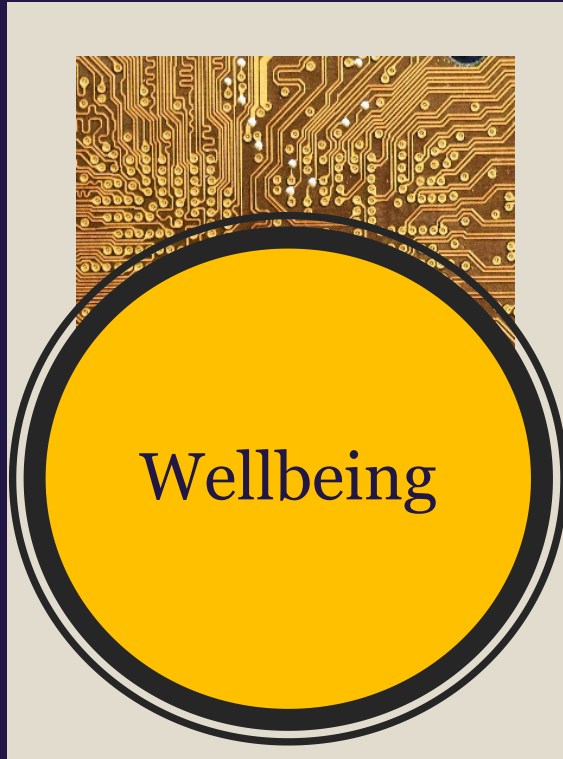
Next
Generation
Training &
Education

First Pillar = Session I



Ways to build a pharmacy workforce that eliminates pharmacy deserts and leads to positive health outcomes in rural, suburban, and urban areas through initiatives

Second Pillar = Session II



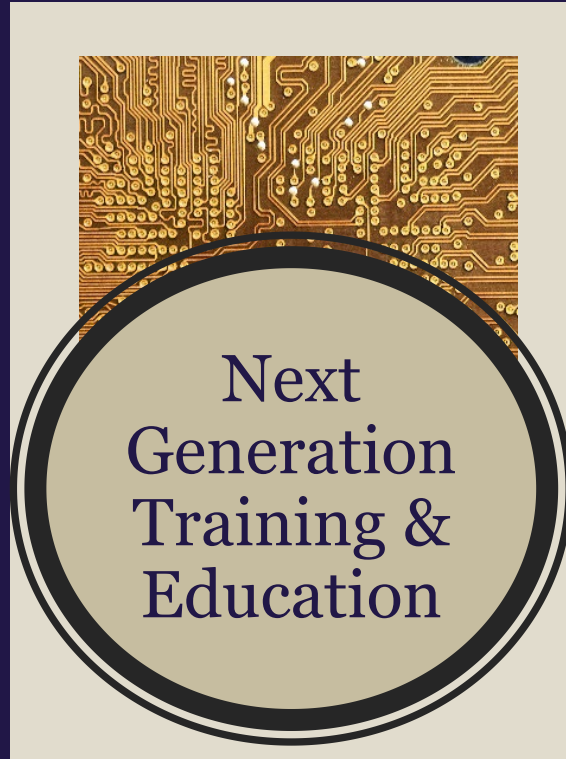
Strategies to create collaborative care environments that reduce clinician burnout and enable pharmacists to train and work in a safe and supportive environment

Third Pillar = Session III



Model programs in which pharmacists have expanded roles in health care delivery

Fourth Pillar = Session IV



Next generation training programs that could prepare pharmacists for expanded roles within and beyond direct patient care

Day 2



Small groups for exploring strategies

Engaging with the speakers

Main Room:

- Go to the designated microphone

Overflow Room:

- Use your designated microphone
 - Write your question then hand it to the Fellow to ask in the main room
 - Come to the main room yourself to ask the question
- Write your question in Slido

Virtual:

- Write your question/comment in Slido
- Fellows are monitoring to read select questions aloud
- Members of the planning committee may respond directly

Volunteer Fellows

Monitoring Slido

Dagmara Zajac, PharmD
Eposi Elonge, M.S.

Managing Overflow Room

Cindy Van, PharmD
Yu-Hua Fu, MS, PharmD

Book of Abstracts

INNOVATIONS IN PHARMACY
TRAINING AND PRACTICE
TO ADVANCE PATIENT CARE:
A WORKSHOP
MAY 29-30, 2025

National Academies of Sciences, Engineering, and Medicine
500 Fifth ST NW
Washington, DC 20001



**FUTURE OF PHARMACY
ABSTRACT BOOK**

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Poster Sessions

Luncheon:

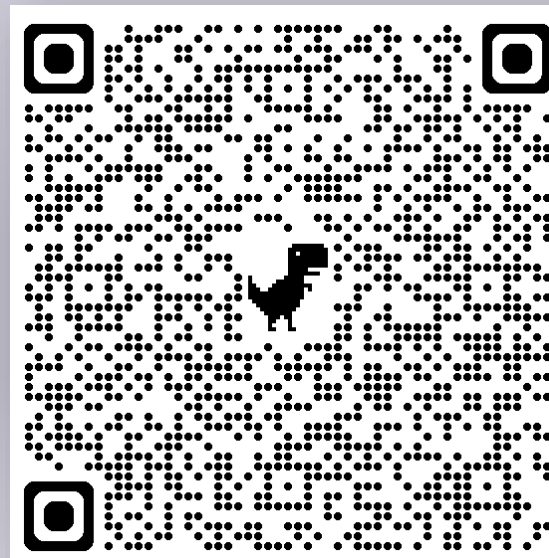
12:15-1:15pmET

Reception:

5:30-7:00pmET

Moderated Poster Session:

6:00-6:30pmET



Discussion with the Sponsors

Kathy Giacomini, Pharmacy Deans Research Group

Paul Abramowitz, American Society of Health-System Pharmacists

Lorri Walmsley, Pharmacy Affairs, Walgreens Co.

Michael D. Hogue, American Pharmacists Association

Michael S. Maddux, American College of Clinical Pharmacy

Marilyn Speedie, Fmr University of Minnesota College of Pharmacy
representing Mary Anne Koda-Kimble

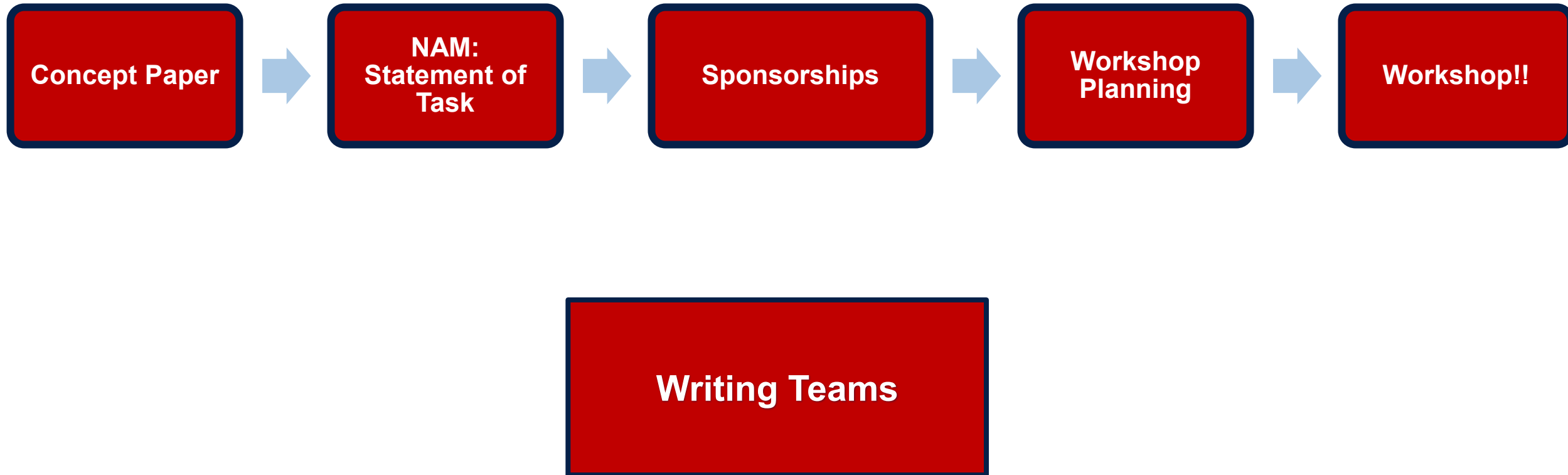
Lee C. Vermeulen, American Association of Colleges of Pharmacy

Innovations in Pharmacy Training and Practice To Advance Patient Care: A Workshop

Kathy Giacomini, PhD, BS Pharm
Dean, UCSF School of Pharmacy



Workshop Development Process

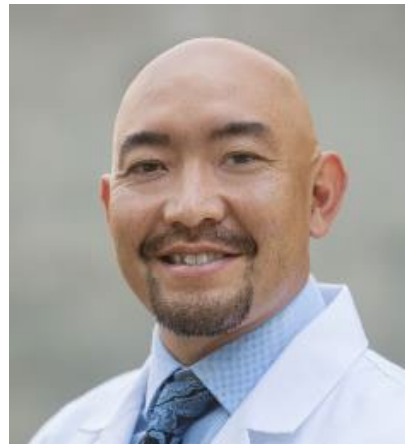


NASEM Workshop Organizing Committee

Sponsors

- American Association of Colleges of Pharmacy
- American College of Clinical Pharmacy
- American Pharmacists Association
- American Society of Health-System Pharmacists
- Mary Anne Koda-Kimble
- Pharmacy Deans Research Group
- Walgreens

Workshop Chair



Jonathan Watanabe, PharmD, PhD
UCSF School of Pharmacy

Patricia Cuff: NASEM

Planning Committee

- Oluwaranti Akiyode
- M. Thomas Bateman, Jr.
- Nicole Brandt
- Marie Chisholm-Burns
- Suzanne Harris
- S. Claiborne Johnston
- Keshelle Lockman
- Leigh A. Ross

Topics to be Covered at This Workshop



- Building a pharmacy workforce that serves pharmacy desert areas and expands the pharmacy workforce
- Workplace environments that foster wellbeing of the pharmacy workforce and reduce pharmacist burnout
- Exploring financially supported roles for pharmacists through model programs
- Exploring policies for financially supported roles for pharmacists
- Next generation education & training programs for future pharmacists that are adaptable as the environments change
- Scaling and sustaining workforce transformation for pharmacists

The Creation of Pharmacy Deserts

CBS Evening News



Associated Press



USA Today

Walgreens to close 150 stores across the U.S. as pharmacy chain faces 'emerging challenges'



Kate Perez
USA TODAY

Published 12:15 p.m. ET July 1, 2023 | Updated 12:19 p.m. ET July 1, 2023

ABC News



New York Times

The New York Times

CVS will close 900 stores as it looks beyond traditional pharmacies.

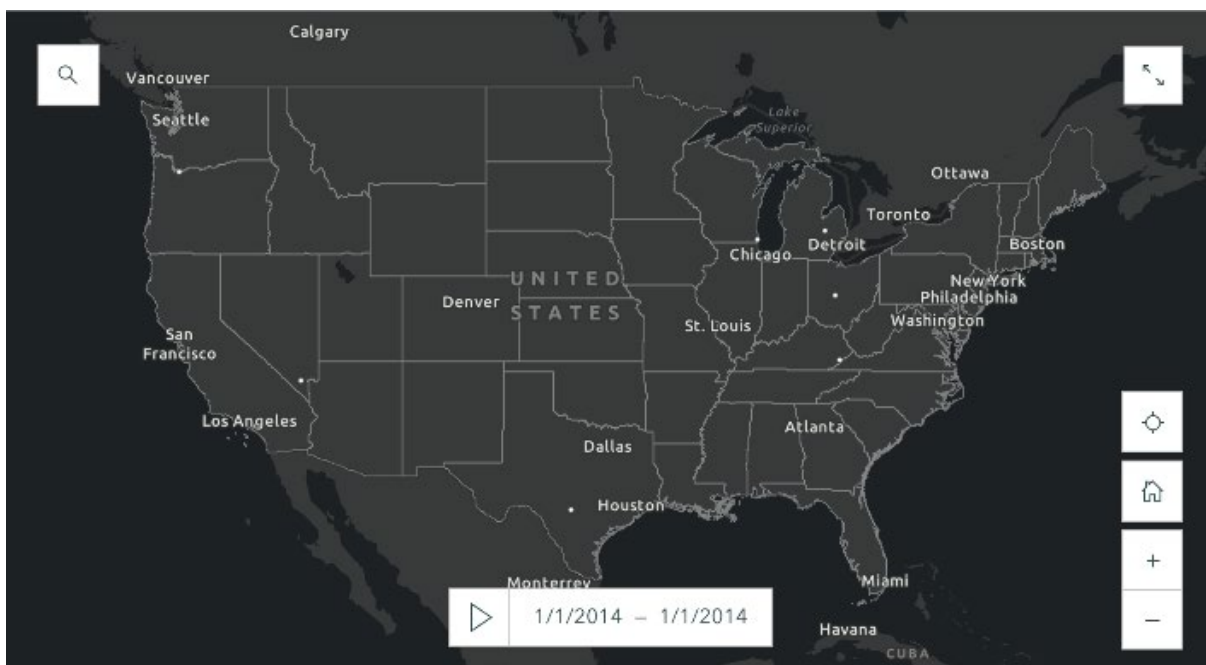
The company said the closures, which will affect about 9 percent of its stores in the next three years, were part of a shift in focus.

Mapping Pharmacy Closures

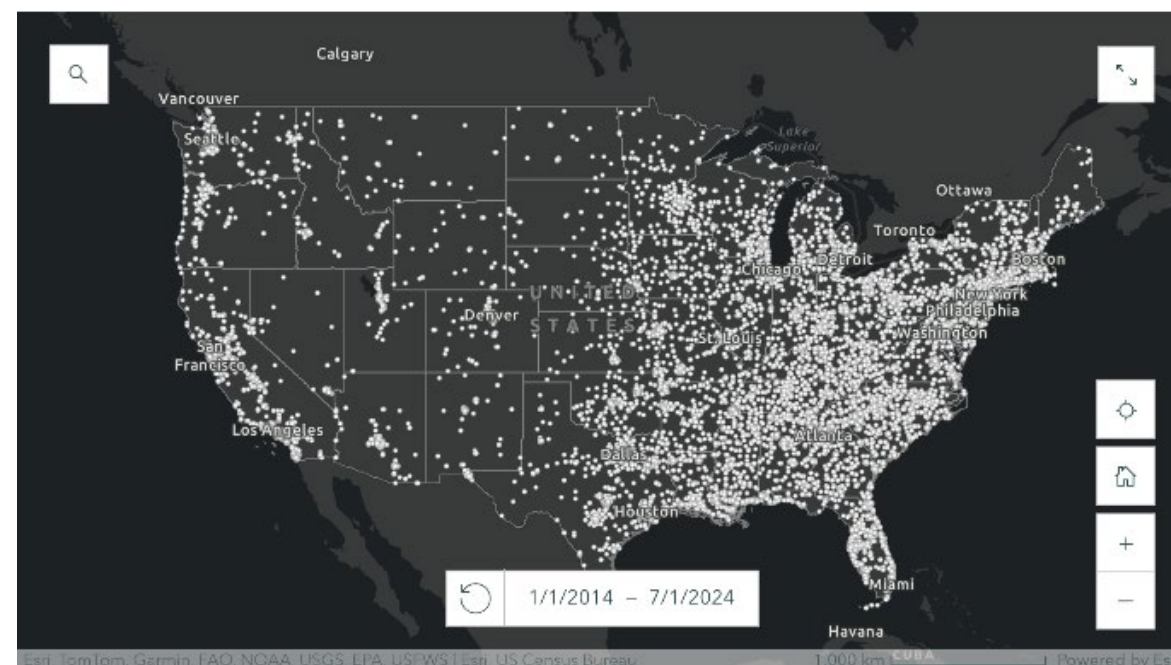
Ruichen Xu, Alec Brown, and Lucas A. Berenbrok (University of Pittsburgh)



2014



2024



<https://storymaps.arcgis.com/stories/21620f1e07c14d7f81adc4503faaf51e>

The New York Times

Walgreens to Be Bought by Private Equity Firm in \$10 Billion Deal

Shares of Walgreens Boots Alliance have lost about half their value in the past year, as the chain has faced pressure in its retail and pharmacy businesses.

March 2025
Sycamore Partners



Walgreens has faced declining prescription reimbursements and falling sales at its retail locations for years. Allison Dinner/EPA, via Shutterstock

<https://www.nytimes.com/2025/03/06/business/walgreens-buyout.html>

Dual Role as a Pharmacy and Pharmacy Benefit Manager



April 17, 2025

ARKANSAS

New Arkansas law bans pharmacy benefit managers from owning, operating pharmacies

"Pharmacies should compete on a level playing field for the business of their patients," Rogers pharmacist Andrew Mize said.

HEADED OUT Major pharmacy chain forced to close 23 stores in same state as 'bad policy' threatens millions of prescriptions

Plus, a strong statement from the pharmacy chain

Jacob Willeford, Consumer Reporter

Published: 11:26 ET, May 2 2025 | Updated: 11:26 ET, May 2 2025



<https://www.5newsonline.com/article/news/regional/arkansas-news/arkansas-law-bans-pharmacy-benefit-managers-owning/527-dbd2db5-4c63-43c2-9fb5-a9e7576a16f2>
<https://arkansasadvocate.com/2025/04/17/arkansas-governor-signs-first-in-the-nation-ban-on-drug-middlemen-owning-pharmacies/>

Pharmacy Workforce Wellbeing

The New York Times

How Pharmacy Work Stopped Being So Great

August 8, 2022

The Washington Post
Democracy Dies in Darkness

Pharmacists are burning out. Patients are feeling the effects.

Growing workloads and stresses lead to well-documented exhaustion, subsequent staffing shortages

March 30, 2023

<https://www.nytimes.com/2022/08/20/business/economy/pharmacists-job-inflation.html>

<https://www.washingtonpost.com/wellness/2023/03/30/pharmacy-shortages-staffing/>

<https://www.drugtopics.com/view/addressing-burnout-in-pharmacy-apha-2025>

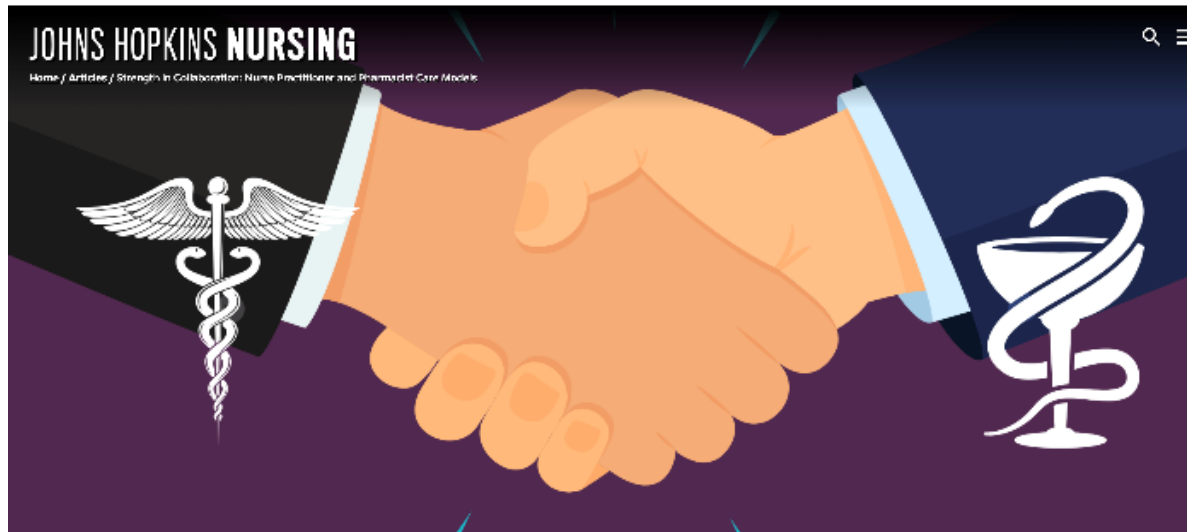
APhA 2025: Addressing Burnout in Pharmacy



March 25, 2025

Model Programs With Expanded Roles for Pharmacists

Nurse Practitioner Pharmacist Care Models



Strength in Collaboration: Nurse Practitioner and Pharmacist Care Models

<https://nursing.jhu.edu/magazine/articles/2025/01/strength-in-collaboration-nurse-practitioner-and-pharmacist-care-models/>
<https://www.communitypharmacyni.co.uk/services/pharmacy-first/>

Claire Anderson, PhD



Pharmacogenomic Testing Services



UCSF launches first pharmacogenomics testing service in California

The UCSF Clinical Pharmacogenomics Program promises to bridge the collection of patients' genomic data at UCSF Health with actionable and effective care decisions.

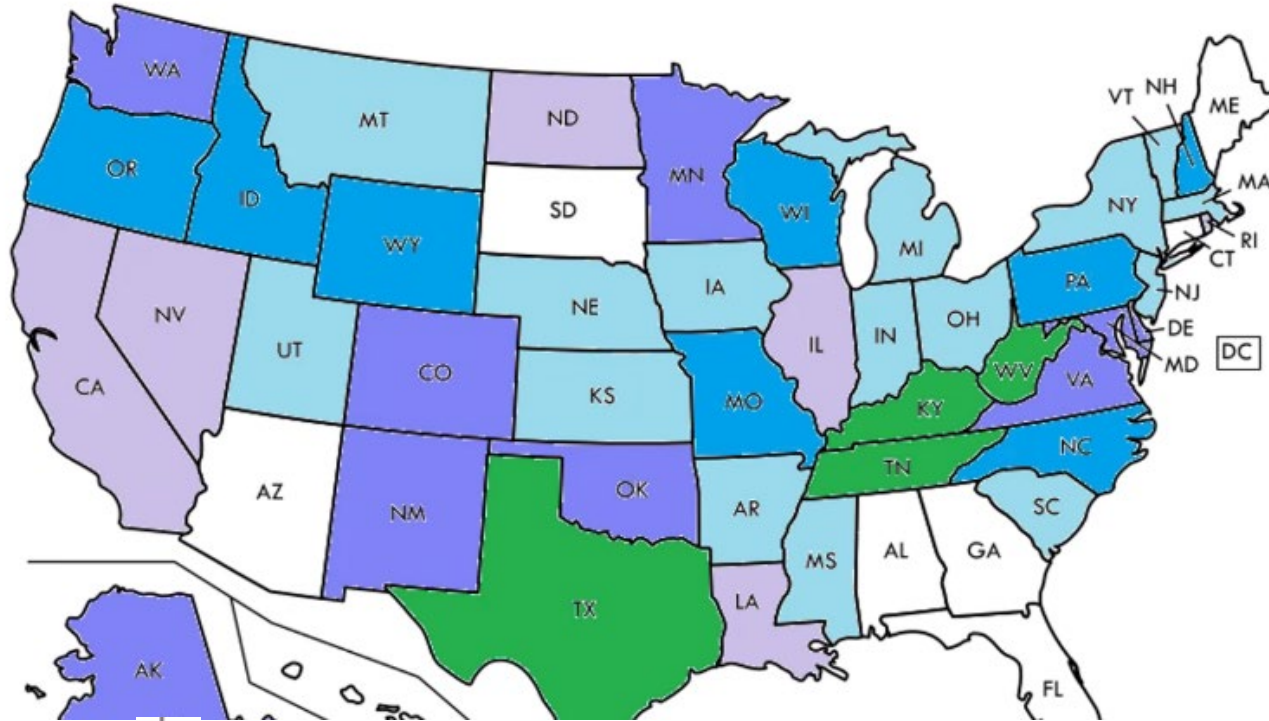
By Levi Gadye / Tue May 2, 2023

<https://pharmacy.ucsf.edu/news/2023/05/ucsf-launches-first-pharmacogenomics-testing-service-california>
<https://abc7news.com/ucsf-pharmacogenomics-drug-gene-testing-find-right-medication-for-me-health-news/13231819/>
<https://www.genomicseducation.hee.nhs.uk/blog/what-is-pharmacogenomics/>



Reimbursement for Clinical Services: ASHP

2024 State Pharmacist Provider Status



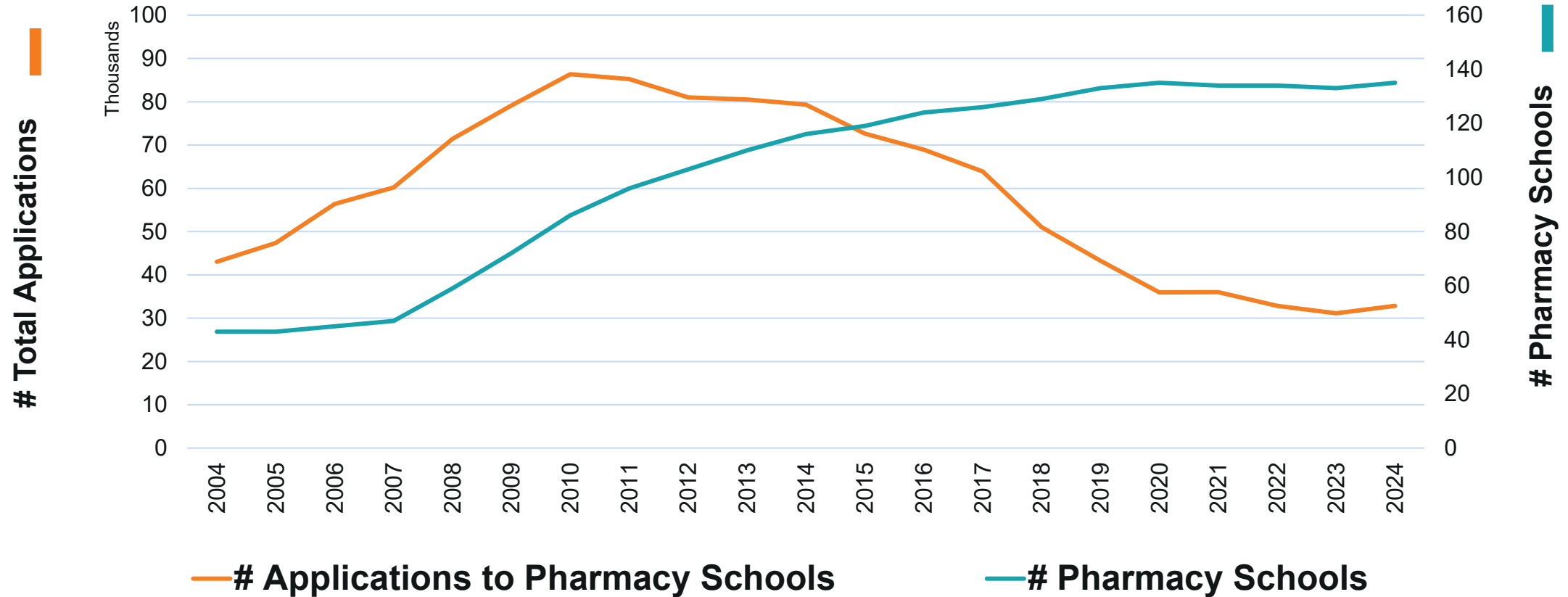
Commercial and Medicaid
Commercial: Broad
Medicaid: Broad
Medicaid: Selected
Commercial and Medicaid: Selected

H.R. 1770: A New Bill in Congress



Future of Pharmacy Care Coalition

There are More Pharmacy Schools but Fewer Applicants



Next Generation Education Programs



Artificial Intelligence and Computational Drug Discovery and Development



<https://pharm.ucsf.edu/aicd3>

Plethora of Residencies, Fellowships and Graduate Programs



<https://www.accp.com/resandfel/>

Thank You

Workshop Planning Committee

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NASEM Staff

- Sharyl Nass
- Monica Feit
- **Patricia Cuff**
- Erika Chow

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- American College of Clinical Pharmacy (ACCP)
- American Pharmacists Association (APhA)
- American Society of Health-System Pharmacists (ASHP)
- Mary Anne Koda-Kimble
- Pharmacy Deans Research Group (PDRG)
- Walgreens
- NASEM Drug Forum

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