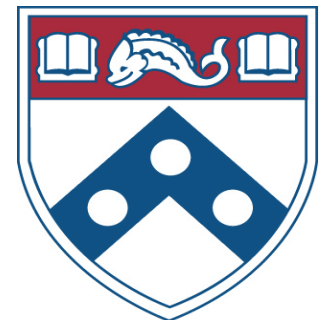# PENN SUPERFUND RESEARCH AND TRAINING PROGRAM CENTER: OVERVIEW

Asbestos, fate, exposure, remediation and adverse health effects
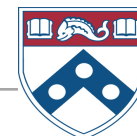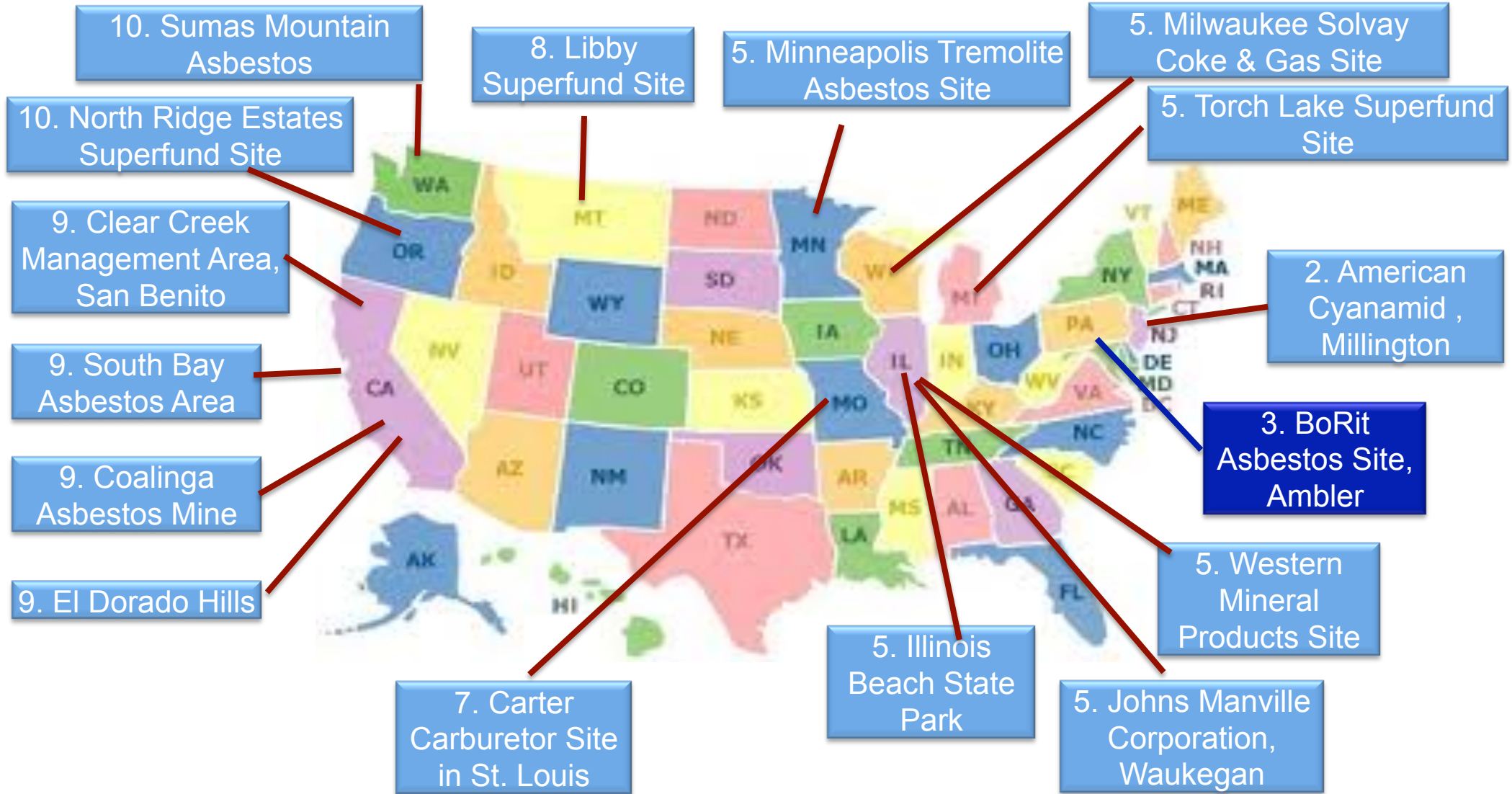
DIRECTOR: IAN A. BLAIR, PhD
DEPUTY DIRECTOR: TREVOR M. PENNING, PHD

Asbestos sites in EPA Regions 2, 3, 5, & 8-10

10. Sumas Mountain Asbestos

10. North Ridge Estates Superfund Site

9. Clear Creek Management Area, San Benito

9. South Bay Asbestos Area

9. Coalinga Asbestos Mine

9. El Dorado Hills

8. Libby Superfund Site

5. Minneapolis Tremolite Asbestos Site

5. Milwaukee Solvay Coke & Gas Site

5. Torch Lake Superfund Site

2. American Cyanamid , Millington

3. BoRit Asbestos Site, Ambler

5. Western Mineral Products Site

7. Carter Carburetor Site in St. Louis

5. Illinois Beach State Park

5. Johns Manville Corporation, Waukegan

CEET
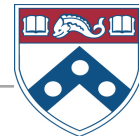CENTER OF EXCELLENCE IN ENVIRONMENTAL TOXICOLOGY
Penn SRP Center

Ambler Superfund Site


BoRit Superfund Site Aerial View

**Historic White-Hills of Ambler**

CEET Identified Questions from the Ambler Community

- **Can asbestos be remediated?**

- **Is asbestos transported by water?**

- **Why is there a cluster of mesotheliomas among women in Ambler?**

- **Is there a genetic pre-disposition to asbestos-induced mesothelioma?**

- **Can asbestos-induced mesothelioma be prevented?**

- **Is it possible to develop blood tests for asbestos exposure and mesothelioma?**

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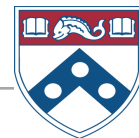
Penn SRP Center Organizational Structure
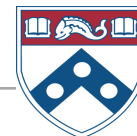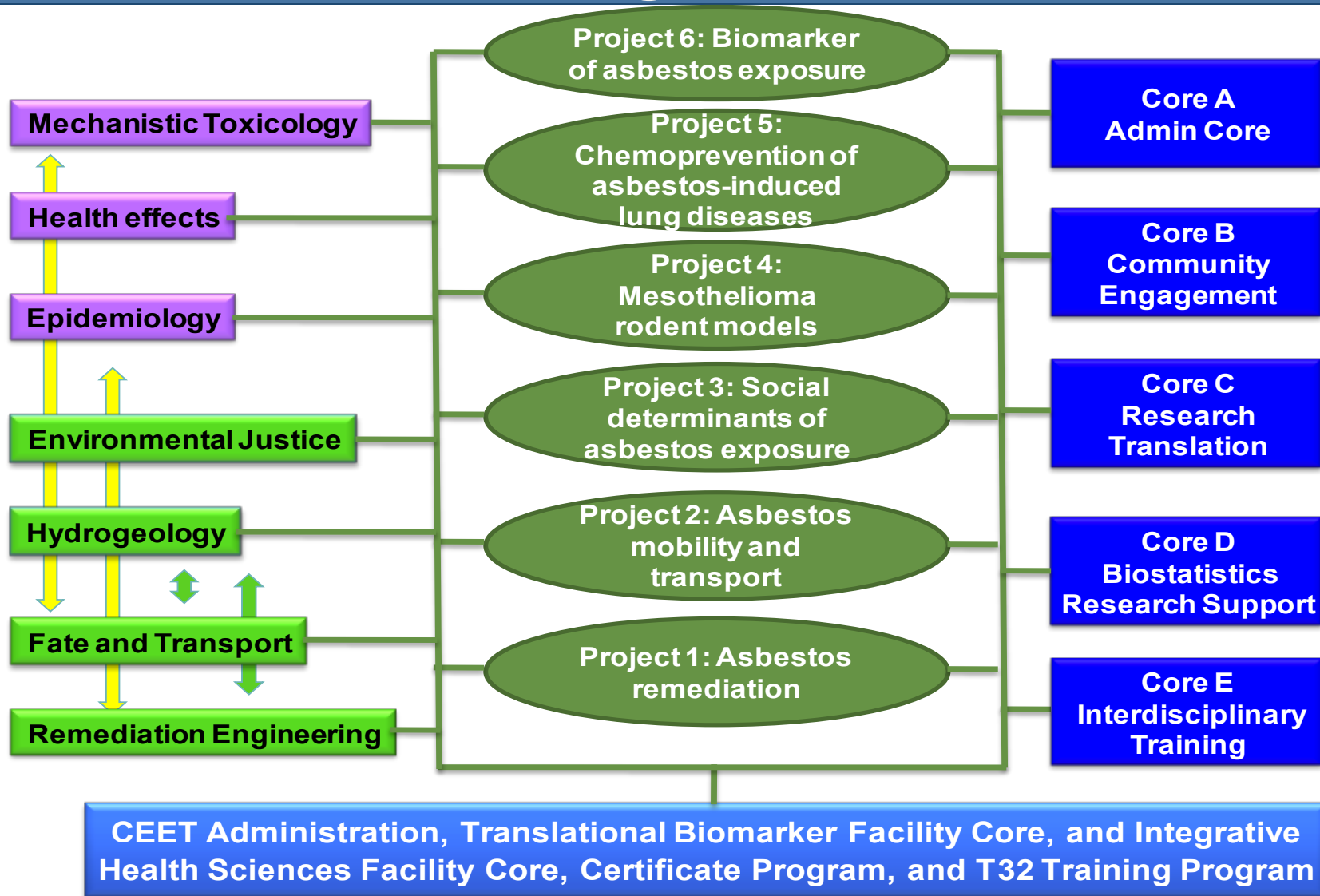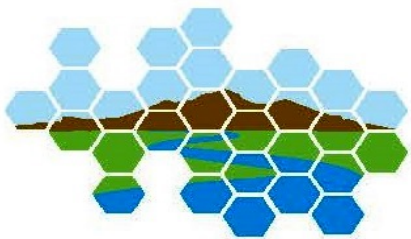
Project 1: Alteration and remediation of asbestos fibers

PI: Brenda Casper, PhD
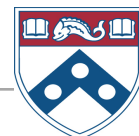
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RESEARCH ARTICLE

Framework for assessment and phytoremediation of asbestos-contaminated sites

Cédric Gonneau[1] · Kinsey Miller[1] · Sanjay K. Mohanty[2,3] · Rengyi Xu[4] · Wei-Ting Hwang[4] · Jane K. Willenbring[2,5] · Brenda B. Casper[1]
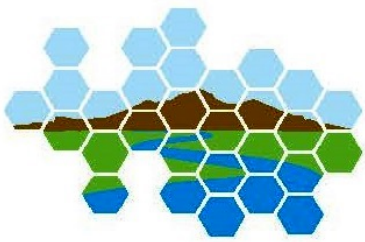
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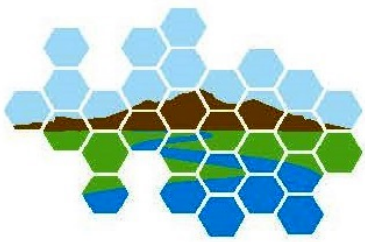
Co-PI: Douglas Jerolmack, PhD, Co-PI: Reto Gieré, PhD

LANGMUIR

Aggregation of Elongated Colloids in Water

Lei Wu,[†,§,∥] Carlos P. Ortiz,[†,‡,§] and Douglas J. Jerolmack*[†]

[†]Department of Earth and Environmental Science and [‡]Department of Physics and Astronomy, University of Pennsylvania, Philadelphia, Pennsylvania 19104, United States
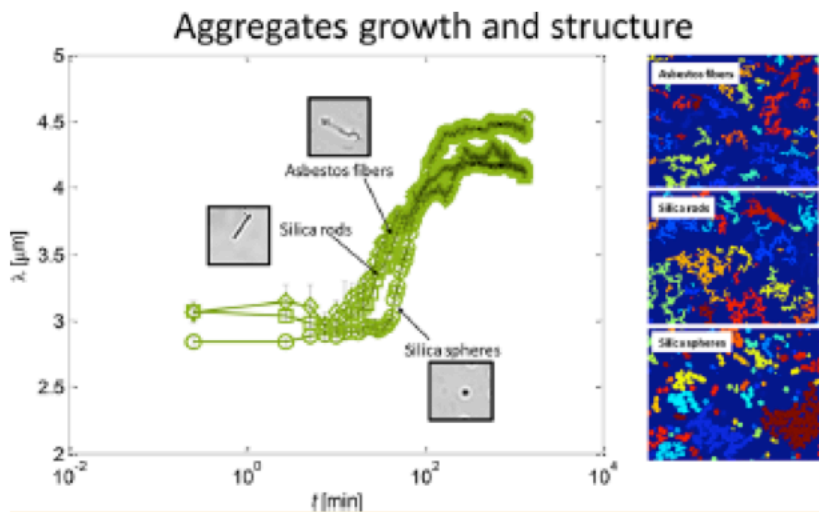
Project 3: Social determinants of asbestos risk

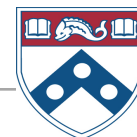## Co-PI: Frances K. Barg, PhD, Co-PI Douglas Wiebe, PhD

Realities of environmental toxicity and their ramifications for community engagement

Justin T. Clapp [a], Jody A. Roberts [b], Britt Dahlberg [c], Lee Sullivan Berry [d], Lisa M. Jacobs [e], Edward A. Emmett [f], Frances K. Barg [e]
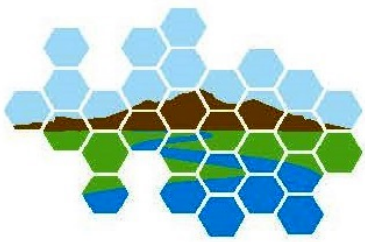
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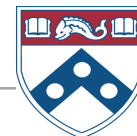
Project 4: Mouse models of mesothelioma

Co-PI: Joseph R. Testa, Co-PI Rebecca Simmons, PhD

Research Article

Cancer Prevention Research

Inflammation-Related IL1β/IL1R Signaling Promotes the Development of Asbestos-Induced Malignant Mesothelioma

Yuwaraj Kadariya[1], Craig W. Menges[1], Jacqueline Talarchek[1], Kathy Q. Cai[2], Andres J. Klein-Szanto[1,2], Ralph A. Pietrofesa[3], Melpo Christofidou-Solomidou[3], Mitchell Cheung[1], Brooke T. Mossman[4], Arti Shukla[4], and Joseph R. Testa[1]
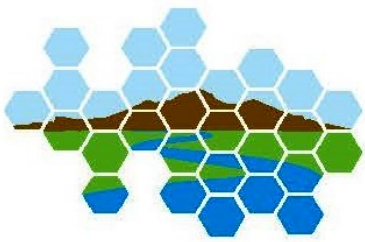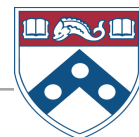
Project 5: Chemoprevention of asbestos-induced lung diseases

Co-PI: Melpo Christofidou-Solomidou, PhD, Co-PI: Steven Albelda, MD

The Synthetic Lignan Secoisolariciresinol Diglucoside Prevents Asbestos-Induced NLRP3 Inflammasome Activation in Murine Macrophages

Ralph A. Pietrofesa,[1] Patrick Woodruff,[1] Wei-Ting Hwang,[2] Priyal Patel,[3] Shampa Chatterjee,[3] Steven M. Albelda,[1] and Melpo Christofidou-Solomidou[1]
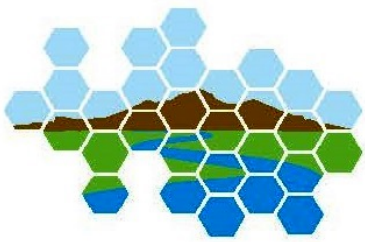
Project 6: Biomarkers of asbestos exposure and mesothelioma

Co-PI: Ian A. Blair, PhD, Co-PI Anil Vachani, MD

## Comparison of statistical methods for detection of serum lipid biomarkers for mesothelioma and asbestos exposure.

Xu R[1,2], Mesaros C[1], Weng L[1], Snyder NW[3], Vachani A[1,4], Blair IA[1], Hwang WT[1,2].

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3   AJ Drexel Autism Institute, Drexel University, Philadelphia, PA 19104, USA.
4   Pulmonary, Allergy & Critical Care Division, Perelman School of Medicine, University of Pennsylvania, PA, USA.
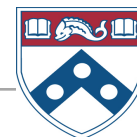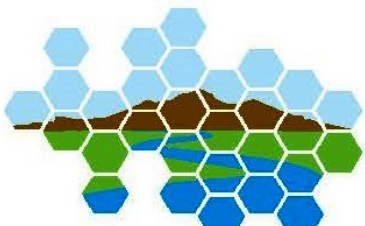
Acknowledgements

PROJECTS

Project 1
Brenda Casper

Project 2
Doug Jerolmack, Reto Giere

Project 3
Fran Barg, Ted Emmett

Project 4
Joe Testa, Rebecca Simmons

Project 5
Melpo Christofidou-Solomidou,
Steven Albelda

Project 6
Ian Blair, Anil Vachani

CORES

Administrative
Ian Blair, Trevor Penning

Community Outreach
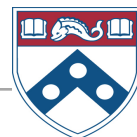Ted Emmett, Fran Barg

Biostatistics
Wei-Ting Hwang

Research Translation
Richard Pepino, Robert Schenckel

Interdisciplinary Training
Trevor Penning, Reto Giere

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