Appalachian Translational Research Network

An Invitation to Address Health Disparities in Appalachia

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“Our Appalachian forebears came in almost equal thirds from England, Scotland and Germany, although some came from Wales, France, Holland and Africa. And of course, the Cherokees were here over a thousand years before Europeans settled.” (Appalachian Values, Loyal Jones)
Culture and Values

Religion
Independence, Self-reliance, Pride
Neighborliness
Familism
Humility and Modesty
Love of Place
Patriotism
Sense of Beauty
Sense of Humor

“We mountain people are the product of our history and the beliefs and outlook of our foreparents. We are a traditional people, and in our rural setting we valued the things of the past. More than most people, we avoided mainstream life and thus became self-reliant. We sought freedom from entanglements and cherished solitude. All of this was both our strength and our undoing.”

(Appalachian Values, Loyal Jones)
20/20 A Hidden America: Children of the Mountains
Appalachians are Understudied

Urban 147,740 articles
Rural 126,901 articles
Appalachian 2,169 articles
<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Appalachia</th>
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</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td>309,138,711</td>
<td>25,233,601</td>
</tr>
<tr>
<td><strong>Education</strong> (%, age 25 and over)</td>
<td></td>
<td></td>
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<tr>
<td>Bachelors or Higher</td>
<td>28.5%</td>
<td>21.3%</td>
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<tr>
<td><strong>Income</strong> (median)</td>
<td></td>
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<tr>
<td>Household Income</td>
<td>$53,046</td>
<td>$43,626</td>
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<tr>
<td>Per Capita Income</td>
<td>$28,051</td>
<td>$23,486</td>
</tr>
<tr>
<td><strong>Persons in Poverty</strong> (%)</td>
<td>15%</td>
<td>17%</td>
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<tr>
<td><strong>Persons with a Disability</strong> (%)</td>
<td>12%</td>
<td>16%</td>
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Disparities in Appalachia

- Higher rates of heart disease and stroke mortality
- Higher percentages of obesity
- Higher rates of smoking
- Lower levels of physical activity
- Higher percentages of unemployment
- Lower educational achievement
- Lower per capita income

Appalachian Regional Commission

Halverson et al Ethn Dis 2002; Halverson et al. ARC 2004
County Economic Classification 2013

Based On:
1) three-year average unemployment rate,
2) per capita market income
3) poverty rate

Distressed: lowest 10%
At-risk: 10-25%
Transitional: lowest 25%-highest 15%
Competitive: 10-25% highest
Attainment: top 10%

Created by the Appalachian Regional Commission, March 2013
Data Sources:
Income data: U.S. Bureau of Economic Analysis, REIS, 2010
Poverty data: U.S. Census Bureau, American Community Survey, 2007–2011

Effective October 1, 2013 through September 30, 2014
Appalachian Translational Research Network: Mission

ATRN is committed to addressing the significant health challenges and disparities specific to Appalachia by enhancing research collaborations to speed the translation of scientific discoveries to health improvements for this region.

The ATRN seeks to foster Community Engagement and Outreach to those in the Appalachian region.
Initiatives

• Develop database of Appalachian researchers and cohorts
• Leadership team semi-monthly meetings
• UK Center of Excellent in Rural Health is developing interactive map of health disparities in the region, states and counties

• Websites
  – OSU
  – UK
  – www.appalachianresearch.org
Initiatives

• Quarterly Newsletter – highlighting research and/or partners
• Develop library of research resources (i.e., consent language)
• Formation of Community Advisory Boards
• Currently developing organizational structure, bylaws, etc
Initiatives

• Provide pilot funds to instigate collaborations among partnering institutions
  – UK-UC announcement is out! Check your CCTST listserve mailbox! 50K in pilot funds available.

• UK-UC Partnership Development
  – Launched Aug 25, 2014
  – 22 individuals to date (11 Departments/Programs)
  – Currently 5 focus areas:
    • Environmental Health, Telehealth, Parkinsons Disease, Physical activity – mental function, & Health promotion for developmental disabilities
Initiatives

• Annual Summit
  – 5th Annual ATRN Summit to be held in Charleston, West Virginia on October 15-16, 2015
Local Appalachian Research and Outreach & Engagement Initiatives
Robert Ludke, PhD, a professor in UC’s department of family and community medicine, and Phillip Obermiller, PhD, a senior visiting scholar in the School of Planning within UC’s College of Design, Architecture, Art, and Planning (DAAP), have co-edited a book, titled *Appalachian Health and Well-Being*. The volume brings together leading researchers who present data addressing health disparities affecting both urban and rural Appalachians and offers possible solutions.

Students from the College of Allied Health Sciences participated in service trip fitting hearing aids on underserved Appalachian residents of Beverly, KY as part of Hear the World. Hear the World, a foundation created by hearing aid manufacturer Phonak, partners with Beverly-based nonprofit Red Bird Mission four times a year to provide hearing screenings and free aids to residents.

http://healthnews.uc.edu/news/?/21010  Story:, 09/20/2012
Dr. Farrah Jacquez, PhD, MA from the Dept of Psychology developed the Adams County Health and Wellness Coalition (ACHWC): A community-academic partnership improve the health and well-being of the children of Adams County and their families by assisting the community in creating a culture of wellness through increased physical activities and improved nutrition.
Dr. Susan Pinney from the Department of Environmental Health with NIH R21 funding evaluates human exposure to PFCs from drinking water in residents along the Ohio River Valley (Portsmouth, OH)

http://healthnews.uc.edu/news/?/15503/  Story, 03/08/2012
Southern Ohio Prevents Hepatitis Project (STOPHER)

- Epidemiological study of Hepatitis C in suburban/rural counties in southern Ohio (CDC funding)
- Target population is 18-30 year olds with a history of IDU
- Interact for Health contract to evaluate overdose prevention programs/efforts in their service region (PI: Winstanley)
- Two pending NIDA grants

PI: Judith Feinberg, MD
Co-I: Erin Winstanley, PhD
Study Cohort
7-9 years
N = 404

Marietta, OH/Parkersburg, WV
n = 323

Cambridge, OH
n = 81

Home Environmental Sampling
- Composite Home Dust
- Soil
- Drinking Water

Ambient Air Sampling
- PM$_{2.5}$ 6 days/week
- 4 weeks/season

Personal Air Sampling
N = 40

Neuropsychological Assessment
- Child IQ (WISC-IV)
- BASC-2
- CVLT-C
- Standardized Achievement Test

Neuromotor Assessment
- BOT-2
Grooved Pegboard, -Fingertapping
- Postural Balance n=55

Biological Measures
Whole Blood: Pb, Mn, Cd, Hg
Serum: Ferritin, transferrin, TIBC;
Hair: Mn;
Tooth: Mn (prenatal and postnatal)
Toe Nails

Neuropsychological Assessment
- Child IQ
- BASC-2
- CVLT-C
- Standardized Achievement Test

Neuromotor Assessment
BOT-2
Grooved Pegboard, -Fingertapping
- Postural Balance n=36
9-12 mos!
UC grantees’ lab-on-a-chip detects toxic heavy metals in humans
By Ed Kang
September 2011

The new sensor efficiently strips highly electronegative heavy metals out of blood to measure their concentration. In a clinical setting, it can give feedback to researchers and families in only a few minutes. (Photo courtesy of Dottie Stover at UC)
GEOTAP Groundwater of Eastern Ohio Testing and Analysis Project

Dr. Amy Townsend-Small, Dept of Geology samples private drinking water wells for methane in partnership with Carroll Concerned Citizens in Carrollton, OH
Unconventional Natural Gas Development (UNDG) in Eastern Ohio

- 1,370 wells as of 1/31/15
- 1,835 wells permitted

Source: Ohio EPA, [www.epa.ohio.gov/MarcellusandUticaShale.aspx](http://www.epa.ohio.gov/MarcellusandUticaShale.aspx)

Graphic by Al Granberg
Health and Hydrofracking: Comparative assessment of community information needs

A collaborative supplement project with University of Rochester, Katrina Korfmacher, PhD and University of North Carolina, Kathleen Gray, MS

• 43 key informant interviews

• Community-Identified Health Research Needs
  • Water Quality
  • Air Quality
  • Environmental Impacts
  • Health Effects
  • Seismic Activity, specifically in Ohio
  • Waste water treatment options & injection of waste, specifically in Ohio

Korfmacher et al. 2014 Rev Environ Health
Air Quality Pilot Study in Carroll County, Ohio

A supplemental collaborative project with Oregon State University’s Dr. Kim Anderson, and Dr. Laurel Kincl

Bracelets Can Detect Chemical Exposures

The next wave of wrist wear might act as a fashionable archive of your exposure to everything from caffeine to pesticides.

Mar 7, 2014 | By Brian Blankowski and Environmental Health News

Wristbands are the accessory of choice for people promoting a cause. And the next wave of wrist wear might act as a fashionable archive of your chemical exposure.

Researchers at Oregon State University outfitted volunteers with slightly modified silicone bracelets and then tested them for 1,200 substances. They detected several dozen compounds — everything from caffeine and cigarette smoke to flame retardants and pesticides.

"We were surprised at the breadth of chemicals," said Kim Anderson, a professor and chemist who was senior author of the study published in Environmental Science & Technology.

Photo credit: Jon Baker, timesreporter.com
Current NIH UC/CCHMC Appalachian Research

UC    CCHMC

2     0
Current NIH Funded Projects

**Judith Feinberg, MD**
Southern Ohio Prevents Hepatitis Project (STOPHER)

**Erin Haynes, DrPH and Kim N. Dietrich, PhD**
Multiple Risk Factors and Neurodevelopment Deficits in Rural Appalachian Children
Funding Opportunities

• Rural Health Value Program – March 23, 2015
  http://www.grants.gov/view-opportunity.html?oppId=271717

• Rural Network Allied Health Training Program
  – March 31
  http://www.grants.gov/view-opportunity.html?oppId=272369

• Rapid Response Rural Data Analysis and Issue
  Specific Rural Research Studies – March 30, 2015
  http://www.grants.gov/view-opportunity.html?oppId=272388

• NIH Minority Health and Health Disparities
  – “...one of its greatest challenges is reducing the profound disparity in
    health status of its racial and ethnic minority, rural, low-income,
    and other underserved populations.”
  http://www.nimhd.nih.gov/funding.html
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RSVP: Erin N. Haynes, DrPh