# An Integrative Curriculum for the Winds of Change:

## Advancing Critical Thinking about the Michigan Wind Rush

**Elizabeth E. Wheatley, Ph.D.**
Assistant Professor of Sociology
Grand Valley State University
Allendale, Michigan

The Global wind industry is colonizing more and more of rural, wild, and coastal America with its expansive fleet of colossal, propeller-style wind turbines. Michigan has emerged as a favored target among wind developers for further deployment of industrial wind zones, given its legislative mandates for ever-increasing production of "renewable" energy, its vast swaths of agricultural land, extensive coastlines, and the absence of statewide health or safety regulations pertaining to wind energy generation.

This presentation summarizes a university-level integrative curriculum designed to inspire and encourage undergraduate students' critical thinking about the implications of wind energy development for Michigan citizens and communities. The curriculum addresses cultural, political and economic forces shaping wind energy development in Michigan, compares various forms of electricity generation methods and their impacts on humans, animals, and ecosystems; and reviews the emerging evidence of adverse health effects of industrial wind turbines in light of sociological theories of reflexive modernization as well as "popular" epidemiological struggles over socially contested environmental disease.

The curriculum is a work in progress and is offered in two parts. Each part of the curriculum is offered as one of several themes addressed in two courses I teach:

- Part I: Social Problems
- Part II: Sociology of Health Care

# PART I: SOCIAL PROBLEMS

The social problems portion of the curriculum seeks to inspire and inform students' critical thinking, writing, and discussion about policies, politics and problems emerging from large scale and rapid deployment of industrial wind energy installations. Despite ubiquitous media representations about wind energy as "green," "clean," "free," and a stimulus for "jobs," students are introduced to additional perspectives that complicate and challenge wind industry social marketing perspectives. Readings, lectures, guest speakers, discussions, films, and field trips encourage students to observe, evaluate, discuss, and debate evidence from scientific, legal, medical, journalistic, documentary, citizen and activist perspectives.

## Areas of Emphasis Include:

- Cultural, Political and Economic Forces Shaping Wind Energy Development
- Global Warming Debates and C02 Reduction Imperatives
- RPS Mandates, Federal Stimulus and State-level Financing for "Renewable" Energy
- Comparative Assessment of Electricity Generation Strategies
- Wind Energy Zoning and its Discontents
- Ecosystem, Health and Wildlife Impacts
- Citizen Response to Wind Energy Developments

## Reading

- Robert Bryce, *Power Hungry: Myths of Green Energy and the Real Fuels of the Future*
- Jon Boone. Overblown
- Jerry Punch, Rick James, and Dan Pabst. Wind Turbine Noise: What Audiologists Should Know

## Related Activities

- John Droz, Jr., Energy Presentation
- Film – *Wisconsin Wind*
- WebSurf: SAVE Montague, "Living with Wind Turbines." SAVE Montague is one of many Michigan-based websites developed by citizens in response to proposed or existing wind energy developments. "Living with Turbines" presents testimonials of wind farm residents in the United States, Canada, and beyond, documenting health and economic impacts to citizens who live in the "footprints" of industrial wind installations.
- Guest Speaker: Steven Transeth, Transeth & Associates, PLLC Former Chair, Michigan Public Service Commission and Executive Director, CARE, Campaign for Affordable Renewable Energy
- Guest Speaker – Member of Lake Michigan Power Coalition (West Michigan coalition opposing Scandia Wind's offshore wind proposal for Lake Michigan).
- Extra Credit Field Trip to Harbor Theater, Muskegon to view *Windfall*
- Extra Credit Field Trip to Ubly, Michigan, Huron County to tour John Deere industrial wind energy generation zone and speak with citizens living amidst the turbines in the "footprint" of the project.

# PART II: SOCIOLOGY OF HEALTH CARE

The Sociology of Health Care portion of the curriculum draws on contemporary theories of reflexive modernization (Ulrich Beck, Anthony Giddens) to inspire sociological evaluation of the emerging literature on adverse health effects of industrial wind turbines on humans. Theorists of reflexive modernization observe the period of modernity as one in which the logic of modernization is applied to the process of modernization – modernization has become reflexive. Technological change and developments occur in a context in which risks of modernization are reflexively acknowledged, debated, and often contested, in and through expert systems and corresponding knowledge claims.

Wide ranging forms of evidence and expertise are being mobilized in debates about industrial wind energy development and adverse health effects of industrial wind turbines. This section of the course seeks to inspire and inform students' critical thinking, writing, discussion and debate about emerging evidence on adverse health effects of industrial wind turbines.

## Reading:

- Nina Pierpont, MD – *Wind Turbine Syndrome: A Report on a Natural Experiment*
- Phil Brown, PhD. "Popular Epidemiology" (Excerpts from *No Safe Place*)
- Steve Kroll-Smith, and H. Hugh Floyd. : "Bodies, Environments and Interpretive Space" Excerpted from *Bodies in Protest*
- Jerry Punch, Rick James, and Dan Pabst. Wind Turbine Noise, What Audiologists Should Know
- Jon Boone, Overblown.

## Additional Reading Optional and Encouraged:

- Carl V. Phillips, MPP, Ph.D. An Analysis of the Epidemiology and Related Evidence on the Health Effects of Wind Turbines on Local Residents
- Wind Turbine Sound and Health Effects: An Expert Panel Review, Sponsored and Financed by the American Wind Energy Association and the Canadian Wind Energy Association.
- Society for Wind Vigilance. Wind Industry Acknowledgement of Adverse Health Effects: Part 1, Executive Summary, Part 2, Detailed Analysis

## Areas of Emphasis Include:

- Wind Turbine Syndrome as an Environmental and Socially Contested Disease
- Reflexive Modernization and "Risk Society" Ulrich Beck, Germany; Anthony Giddens, UK)
- Environmental Illness and Contested Disease (Steve Kroll-Smith and H. Hugh Floyd)
- "Popular" Epidemiology and the Politics of Disease (Phil Brown, Brown University)

## Related Activities:

- CFCO Radio Program with Nina Pierpont, MD, PhD
- Slide Presentation – Michael A. Nissenbaum, MD ~ Report from Mars Hill, Maine
- Guest Presentation - Acoustical Consultant on Wind Turbine Noise
- WebSurf: SAVE Montague, "Living with Wind Turbines." SAVE Montague is one of many Michigan-based websites developed by citizens in response to proposed or existing wind energy developments. "Living with Turbines" presents testimonials of wind farm residents in the United States, Canada, and beyond, documenting health and economic impacts to citizens who live in the "footprints" of industrial wind installations.
- Extra Credit Field Trip to Harbor Theater, Muskegon to view Windfall
- Extra Credit Field Trip to Ubly, Michigan, Huron County to tour John Deere industrial wind energy generation zone and speak with citizens living amidst the turbines in the "footprint" of the project.

# CONCLUSION:

Wind industry proposals for off-shore and land-based wind "farms" have sparked emotionally-charged and hotly contested debates among citizens and communities of West Michigan. Proponents and opponents of such developments draw on wide ranging forms of evidence to advance their positions.

The two-part curriculum offers students an opportunity to review and evaluate evidence advanced from different sides of the debate, while cultivating the capacity to interpret and evaluate knowledge claims critically. Ideally, the experience enables students to transcend the hype and "happy talk" of wind industry social marketing perspectives, in order to evaluate and scrutinize evidence about wind energy policies, politics and impacts from an informed position.