

# The Oregon Way: Planning a Sustainable Economy in the American West

Journal of Planning Education and Research  
1–14

© The Author(s) 2015

Reprints and permissions:

sagepub.com/journalsPermissions.nav

DOI: 10.1177/0739456X15595866

jpe.sagepub.com



Robert F. Young<sup>1</sup>

## Abstract

This article explores Oregon's attempts to transcend the boom/bust cycles of its historically natural resource-based economy to establish a more diversified, resilient economy based upon advanced manufacturing and sustainable technology and practices. Drawing upon Fredrick Turner's and Harold Innis's theses of North American development, I explore Oregon's economic dynamics through state and federal data and Oregon's recent economic initiatives. Results reflect an Oregon still reliant upon natural resource and industrial commodities, leaving it highly vulnerable to global markets. Efforts toward "greening" the state's economy, although embryonic, show signs of setting Oregon on a more independent, self-reliant economic trajectory.

## Keywords

economic development, Frontier Thesis, New West, Oregon, staples thesis, sustainability, regenerative

## Introduction

Volatile economies in the western United States pose significant challenges to planners seeking to advance sustainable development. Many researchers posit the Old West, characterized by reliance on timber, fisheries, mining, drilling, grazing, and agriculture, is being replaced by a more diverse, cosmopolitan, and resilient economy based on services, information technology exports, recreation, and tourism. The relative decline of primary extraction and growth of high-tech, service sector, and amenity-based industries in the region broadly situated between the Rocky Mountains and Pacific Ocean, they argue, has given rise to a New West (Reibsame et al. 1997; Jackson and Kuhlken 2006). These changes are said to reflect a transformation in culture and policies favoring sustainable economic development over short-term extraction (Dagget 1998; MacDonnell 1999; White 2008). The result, researchers and advocates assert, is the emergence of a more stable New West economy capable of transcending boom/bust cycles of the region's past (Power and Barrett 2001; Swanson 2002; Darling 2005; Punke 2007).

Other researchers challenge this perspective. Noting the region's long history of urbanization, industrial development, population growth, cultural diversity, and persistent economic vulnerability, they call for a more informed historical approach in exploring regional economic dynamics and formulating policies guiding future development (Limerick 1987; Taylor 1998, 2004). One historian described the task: "instead of fantasizing about an Old West in Leadville or fashioning a New West in Aspen, we might try

the brave tactic of examining the West that has always been there" (Hyde 1998, 399).

Researchers critical of distinctions between an Old and New West argue that to meet the region's challenges effectively, planners must address its past and present together (Hyde 1998; Limerick, Travis, and Scoggin 2002; Robbins et al. 2009). In response, I explore potential for theories identified with development dynamics of the Old West to inform Oregon's contemporary economic underperformance.

Oregon has been a leader in both of what researchers characterize as the Old and New West. One of the earliest western territories to gain statehood, Oregon's economy was long characterized by the extractive industries of fur, timber, fisheries, and grazing. More recently, Oregon has sought to transition from a resource-based economy to one emphasizing high technology and services (Oregon State Archives 2013). An innovator in conservation measures including the nation's first statewide bottle bill and urban growth boundaries, Oregon has also placed particular focus on green development (Esteve 2009).

Despite this focus, Oregon currently has one of the highest unemployment rates in the nation. This present downturn

---

Initial submission, February 2012; revised submissions, June 2013, October 2014, and March 2015; final acceptance, April 2015

<sup>1</sup>University of Texas at Austin, Austin, TX, USA

## Corresponding Author:

Robert F. Young, University of Texas at Austin, 310 Inner Campus Drive  
B7500, Austin, TX 78712-1009, USA.

Email: ryoung@utexas.edu

is only the latest chapter in the state's history of economic underperformance in comparison to the nation as a whole (VanGordon 2010; Oregon Office of Economic Analysis 2010). For example, in the 1990s recession Oregon outpaced the nation in "high unemployment, widespread hunger and a diminishing safety net of social services" (McPherson 2010, 1). The state of Oregon is seeking to address this poor economic record by investing in an economy based on advanced manufacturing, sustainable technologies, and conservation.

In this article, I ask two questions:

1. Do classic development theories iconic to the experience of North American peripheral development provide a framework that can inform Oregon's contemporary economic underperformance?
2. Are Oregon's economic development strategies providing a transition to sustained economic development as identified by this framework?

To explore the first question, I compare Fredrick Turner's Frontier Thesis and Harold Innis's Staples Thesis. I use primary articles by the authors to identify regional development dynamics fundamental to each thesis and then explore their descriptive power in light of contemporary federal and state economic data for Oregon.

To investigate the second question, I compare this exploration's results with Oregon's economic development initiatives and consider whether Oregon's strategies to restructure its economy address these regional development dynamics.

Throughout the 2007–2009 recession and subsequent period of slow growth, Oregon remained among states hardest hit by job losses and underemployment. These numbers are especially acute when compared nationally, reflecting a more general history of Oregon's economic underperformance compared to the nation as a whole (Bureau of Labor Statistics 2010a).

Understanding Oregon's economic dynamics can inform policy makers and others engaged in economic development in the American West and similarly distressed regions. I approach this task from an interdisciplinary, historical perspective applied to an analysis of contemporary conditions and policy.

## Oregon's Present Economy

While official U.S. jobless rates remained below 10 percent throughout much of the Great Recession, Oregon's unemployment numbers began registering double digits in January 2009 (Bureau of Labor Statistics 2010b; Dao and Loungani 2010). These numbers take greater significance when economic dislocation is measured in terms of labor underutilization (Haugen 2009).

When expanded definitions of unemployment and underemployment are combined, as in the Bureau of Labor

**Table 1.** Alternative Measures of Labor Underutilization by State, Third Quarter of 2008 through Second Quarter of 2009 Averages (%).

State	Measure (%)					
	U-1	U-2	U-3	U-4	U-5	U-6
United States	3.2	4.6	7.6	8.0	8.8	13.7
Oregon	4.1	6.8	10.0	10.3	11.0	18.4

Source: Bureau of Labor Statistics (2009b).

Note: U-1 = persons unemployed fifteen weeks or longer, as a percentage of the civilian labor force; U-2 = job losers and persons who completed temporary jobs, as a percentage of the civilian labor force; U-3 = total unemployed, as a percentage of the civilian labor force (definition used for the official unemployment rate); U-4 = total unemployed plus discouraged workers, as a percentage of the civilian labor force plus discouraged workers; U-5 = total unemployed, plus discouraged workers, plus all other marginally attached workers, as a percentage of the civilian labor force plus all marginally attached workers; and U-6 = total unemployed, plus all marginally attached workers, plus total employed part-time for economic reasons, as a percentage of the civilian labor force plus all marginally attached workers.

**Table 2.** Labor Underutilization Rates of U.S. Adults in the Top Five and Lowest Five States, January to April 2009 (%).

Top Five	Underutilization Rate (%)	Bottom Five	Underutilization Rate (%)
Oregon	23.9	North Dakota	9.9
Michigan	22.9	Nebraska	10.5
California	22.4	Wyoming	11.1
Tennessee	21.6	Louisiana	11.2
South Carolina	21.2	Oklahoma	11.9
Average	22.4	Average	10.9

Source: Sum et al. (2009).

Statistics' alternative measures of labor utilization, Oregon's employment situation worsens considerably (see Table 1). When considering labor underutilization as defined by the Bureau (see footnote 1) from the second half of 2008 through the middle of 2009, the U.S. figures break double digits (13.7 percent), while Oregon's average rate of economically induced labor dislocation rises to 18.4 percent, registering 23.9 percent for the first quarter of 2009 (see Table 2).

The rapidity of this decline is reflected in Oregon's position of national leadership in posting the largest percentage increase in labor underutilization rates (11.3 percent) for any state from the first quarter of 2008 to the first quarter of 2009 (see Table 3).

Understanding Oregon's relative economic weakness is an important point of departure for administrators, planners, and citizens interested in achieving long-term economic sustainability. However, gaining such understanding requires more than reviewing forecasts and figures or prescribing formulaic economic development strategies (Turok 2009; Teitz 2009). Oregon's experience of chronic "boom/bust" cycles and lagging economic performance suggest investigating

**Table 3.** The Eleven States with the Largest Percentage Point Increases in Labor Underutilization Rates from January–April 2008 to January–April 2009 (%).

State underutilization rate increase (%)	
Ohio	7.7
Rhode Island	7.7
North Carolina	8.0
Alabama	8.2
Nevada	8.4
Arizona	8.7
Tennessee	8.9
California	8.9
South Carolina	9.5
Hawaii	10.5
Oregon	11.3

Source: Sum et al. (2009).

deeper, historical analyses as frameworks for understanding Oregon's longer-term development issues.

## Methodology

I use Patrick Geddes's regional survey approach as the methodological framework for this article. Geddes argued that by exploring a region's past and present planners could effectively determine its future possibilities: "To realize the geographic and historic factors . . . is thus the first step to comprehension of the present, one indispensable to any attempt at the scientific forecast of the future" (Geddes 1904, 115). Augmenting the "preliminary survey of geographic environment and historic development," Geddes called for regional economic data focused on "the present condition of its people, their occupation and real wages" (Geddes 1904, 115). These steps enable an examination of what he termed the "civic future," allowing planners to address the immediate as well as "remoter and higher issues" facing a region (Geddes 1904, 115).

I chose two classic theses to explore Oregon's present economic issues and policies: the Frontier Thesis (Fredrick Turner) and the Staples Thesis (Harold Innis). Both theses were postulated to address peripheral development in North America and, though disputed and defended by critics and advocates alike, are still fundamental to debates surrounding western North America. Turner's ideas remain central to public perceptions of the region's progress and among academics engender "pitched battles among 'Turnerians,' 'anti-Turnerians,' 'neo-Turnerians' and 'post-Turnerians' with the only point of agreement being his enormous impact on historical scholarship and the American mind" (Citizendum 2009). Likewise, Innis's Staples Thesis, "even under attack . . . continues to be the mechanism of historical synthesis against which all others must compete" (Canadian Encyclopedia 2009).

I then draw upon federal and state economic data tracking Oregon's unemployment, per capita income, poverty, entrepreneurial activity, and investment rates. To test these theses' descriptive ability in relation to Oregon's contemporary economy. Next, I review Oregon's present economic development strategies in the context of this analysis.

## Theory

### *Underdevelopment and the Rediscovery of Place*

In the decades following Turner and Innis's exploration of North American peripheral development, regional ideas were subsumed within more generalized development theories (Rostow 1960; Schumpeter 1961; Sombart 1928). However, disruption of traditional colonialism and subsequent rise of Third World nationalism prompted policy makers, academics, and activists to reinitiate critical investigations into the political economy of development. These investigations revived the importance of regional perspectives in addressing chronic economic underperformance (Roxborough 1979; Chilcote 1984; Kay 1993).

While acknowledging the analytical power of modern, classical, and neo-classical economics, these perspectives criticized such totalizing theories as myopic regarding vital elements of local history and experience. This brought many to argue for the necessity of understanding regional dynamics in analyzing underdevelopment and searching for viable development alternatives (Baran 1952; Prebisch 1986; Cardoso, Faletto, and Urquidi 1979; Sunkel 1973; Frank 1975; Amin 1976).

This critical break generated a vast literature and variety of schools of thought regarding theories of development and underdevelopment (Roxborough 1979; Chilcote 1984; Kuhnen 1987; Wilbur 1988; Kay 1993; Sinha 1999; Seligson and Passe-Smith 2009). Although encompassing a range of (sometimes opposing) viewpoints regarding the nature and causes of underdevelopment, they embraced the central importance of local history and experience in formulating the dynamics of regional economies (Chilcote 1984; Seers 1980).

The widespread economic disruptions of the global 2007–2009 recession and subsequent period of sluggish growth have prompted many planners to seek new development strategies to strengthen local and regional economies. The argument I propose in this article is that to do so effectively, planners and policy makers would benefit from rooting their efforts in the history of their region as well as its present experience.

### *Imperatives of Place: Ecology and Society in the Development of North America's Periphery*

*The Frontier Thesis—Fredrick Turner.* Fredrick Turner (1861–1932) first presented his thesis, "The Significance of the Frontier in American History," at the Columbian Exposition

in Chicago in 1893. Turner's thesis, which won the Pulitzer Prize in 1933, has been described as "the single most influential piece of writing in the history of American history" (Faragher 1994, 1). Although it has engendered considerable critique, its iconic status as a narrative of western development remains. As John Lauritz Larson noted on the centenary of its publication: it "stands secure among American historical writings as the source of some of our most original, most fruitful, most controversial, and most enduring scholarly debates." (Larson 1993, 241). As several of Turner's critics concede, "No alternative to the frontier thesis has overturned it" (Popper, Lang, and Popper 2000, 98).

Turner rooted the character of the periphery's development in the continent's historic landscape: "There is not *tabula rasa*. The stubborn American environment is there with its imperious summons to accept its conditions" (Turner 1986, 19). These conditions, he contended, prescribed the process of western development that "followed the arteries made by geology" and articulated itself "like the steady growth of a complex nervous system" (Turner 1962, 14–15). The unique character of growth in America's hinterlands, he posited, arose from contact with its vast resources and opportunities for exploitation: "The existence of an area of free land, its continuous recession, and the advance of American settlement westward explain American development" (Turner 1986, 1).

While this settlement process subordinated the landscape and indigenous cultures to the imperatives of frontier society, Turner proposed pioneers' social systems were themselves transformed. This dialectic transfigured the continent's indigenous ecology and cultures as well as the cultures colonizing them. The subsequent emergence of new institutions, he noted, "is a history of the evolution and adaptation of organs in response to changed environment" (Turner 1962, 205).

The new settler society resulting from this adaptation was marked by growth and innovation: "By this application, a new environment is suddenly entered, freedom of opportunity is opened . . . and new activities, new lines of growth, new institutions and new ideals, are brought into existence" (Turner 1962, 205). Turner maintained that waves of westward expansion drove this process toward increasing economic and social independence. In fact, it "grew more and more independent" the further west one traced it: "Thus the advance of the frontier has meant . . . a steady growth of independence on American lines" (Turner 1962, 4).

Although Turner expressed concern over loss of "free" frontier resources driving such change, he saw the new institutions' character carrying over to shape society's post-frontier, metropolitan phase: "The peculiarity of American institutions is, the fact that they have been compelled to adapt themselves to the changes . . . developing . . . out of the primitive economic and political conditions of the frontier into the complexity of city life" (Turner 1986, 2). Through this adaptation, Turner insisted, "a new society has emerged

from its contact with the backwoods" (Turner 1994, 62). Even Turner's critics, who argue frontier rural and urban spheres emerged simultaneously, concede this synergy in western metropolitan development (Cronon 1991).

This new society did not lose its frontier characteristics with the frontier's closing. Rather, path dependency carried the Old West into the New: "Gradually this society loses its primitive conditions, and assimilates itself . . . but it bears within it enduring and distinguishing survivals of its frontier experience" (Turner 2010, 159). "Here . . . the West took on its distinguishing features, and transmitted frontier traits and ideals to this area in later days" (Turner 1994, 62).

In its cosmopolitan context, Turner proposed, the nation was "thrown back upon itself," intensifying, if redirecting the dynamic: "The test tube and the microscope are needed rather than ax and rifle" and "in place of old frontiers of wilderness, there are new frontiers of unwon fields of science" (Turner 1962). Innovation, conservation, and the solidarity of self-reliance as "in the spirit of the pioneer's 'house raising'" were key to answering this new stage of development in the West. (Turner 1994, 9).

In sum, Turner proposed an evolutionary theory of western North American development where social and ecological forces forged a new continental society. The tendency of this society toward increased innovation and independence grew more acute, he proposed, as it moved west, carrying these attributes into the society's metropolitan future. Thus, according to Turner's thesis, former frontier regions in the American west should exhibit independent, innovative, self-reliant economies derivative of their frontier experience.

*The Staples Thesis—Harold Innis.* Harold Innis (1894–1952) proposed an alternative interpretation of North American development. Like Turner's Frontier Thesis, Innis's Staples Thesis, typified in essays such as "The Fur Trade in Canada: An Introduction to Canadian Economic History" (1930), became the basis for subsequent generations of scholars and policy makers and his legacy still influences contemporary policy and research (Francis 2009; Hutton 2009; Acland and Buxton 1999; Berger 1976).

Innis developed his Staples Thesis by analyzing Canada's regional economies. In contradistinction to intellectuals such as Goldwin Smith, author of "Canada and the Canadian Question" (1891) who argued in favor of North America's development along a north-south axis, Innis, like Turner, saw North America's natural lines of development leading west shaping its regional economies. "The present Dominion," Innis famously declared, "emerged not in spite of geography but because of it" (Innis 1995, 13).

He saw in this geography, however, a very different process of regional development. In opposition to Turner, Innis saw the periphery caught in a dynamic of dependent development resulting from "a great competitive east-west trading system . . . one end of which lay in the metropolitan centres

of western Europe and the other in the hinterland of North America” (Creighton 1957, 105).

While Innis and other advocates of this “Laurentian” perspective joined Turner in contending North America’s ecological imperatives significantly influenced settler society, they argued each region’s development was shaped by exploitation of its resources as staples for distant metropolises (Careless 1954). Innis “understood the staple to be a giant organizing mechanism of society in a frontier economy” whose serial extraction and export decisively shaped each region’s cultural, political and economic development (Easterbrook and Watkins 1984; Drache 1995, xlv). As Innis argued, “Cheap water transportation favored the rapid exploitation of staples to more highly industrialized areas in terms of fur, lumber, and finally wheat, pulp and paper, and minerals” (Innis 1995, 135).

While Turner saw western development producing increasingly independent, self-reliant communities, Innis contended that reliance on staples resulted in an economy built upon unstable foundations: “especially weakness in other lines of development, dependence on highly industrialized areas for markets and for supplies of manufactured goods, and the dangers of fluctuations in the staple commodity” (Innis 1995, 127).

Innis proposed that these factors created path dependencies distorting regional development even as the economy diversified in its later metropolitan phase. The advent of industrialization and nation building did not deliver these regions from their frontier beginnings. Rather, for Innis, “there was too much evidence of continuity between the old staples order and the new industrial age” (Drache 1995, xxvii).

The shift from raw materials to industrial commodities did not result in economic self-reliance but, more frequently, he argued, in externally led development yielding weak internal markets, vulnerability to larger business cycles, and rigidities in technology and skills that made labor demand highly volatile and reduced domestic entrepreneurship. Innis asserted that these weaknesses made such regions “storm centers to the modern international economy” (Innis 1995, 34). As a result, he stated, “Industrialism has provided an abundance of goods but not the first luxury of security” (Innis 1995, 226).

In sum Innis, like Turner, proposed ecological and social forces shaped development in North America’s periphery and that a region’s frontier development deeply influenced its later metropolitan character.

Unlike Turner, however, he saw the region’s role as staple supplier of natural resource and industrial commodities yielding a more limited spectrum of development opportunities. Rather than the independent, self-reliant, innovative economy Turner posited for the West, Innis saw the creation of dependent regional economies characterized by high employment volatility, low wages, and a stunted internal market and entrepreneurial class. I use contemporary state and federal data and subsequent analysis of the structure of

Oregon’s economy to test the power of these theses to describe Oregon’s present economic position.

## Findings

### *Oregon: Frontier State or Plundered Province?*

As noted above, Oregon’s economy featured one of the nation’s highest unemployment and labor underutilization rates during the recent recession. Oregon’s high rate of unemployment relative to the nation during this period is not unique. Since World War II, Oregon has undergone at least nine periods of severe, prolonged, comprehensive job loss (Kaylor 2009). For example, from 1996 to the present, unemployment in Oregon consistently outpaced the nation. During this period, Oregon’s unemployment rate averaged more than 25 percent above the national average (Bureau of Labor Statistics 2010a). Accompanying weak performance in employment, Oregon consistently exhibited 5–10 percent lower overall per capita income to the nation as a whole (OPB 2009). Aggravating Oregon’s weak per capita income is Oregon’s poverty rate that has averaged just below 12 percent of the state’s overall population over the past fifteen years (Byerly and Jurjevich 2013; OPB 2009).

Oregon’s high employment volatility and poverty rate and relatively low per capita income depress the potential strength of Oregon’s internal economy. The percentage of Oregon workers covered by unemployment insurance who earn below 150 percent of the federal poverty threshold for a family of four reflects the weakness of Oregon’s domestic consumer market. More than 60 percent of Oregon’s workers earn less than this federal poverty benchmark (OPB 2009). In addition to Oregon’s high unemployment and poverty rates and low per capita income and wage rates, Oregon’s economy is one of the nation’s least diversified. Diversity within Oregon of all industrial sectors reflects that Oregon’s economy remains focused on a relatively narrow productive base (OPB 2009).

While Oregon’s economy exhibits low diversification, it also includes a high level of entrepreneurial activity. Measuring this activity ranks Oregon among the top ten in new employer creation and top third in venture capital investment in the nation (OPB 2009).

### *The Structure of Oregon’s Economy*

Reviewing developments in Oregon’s economy sheds light on the state’s persistent economic underperformance. Oregon’s historically natural resource-based economy suffered badly during the 1980s recession. In response, the state attempted to diversify to manufacturing and services with a focus on high technology (Oregon State Archives 2013). Public officials and boosters often cite Oregon as a leader in this transition to a new economy. However, exploration of the state’s underlying economic structure reflects Oregon’s

**Table 4.** Oregon Location Quotients, 1997–2012.

	1997	2012
Old West economic sectors		
Farming	1.66	2.02
Forestry and Logging	5.92	6.05
Agriculture and Forestry Support Services	1.73	2.08
Mining	0.30	0.29
Fisheries	2.72	2.65
New West economic sectors		
Information	0.86	1.02
Arts, Entertainment and Recreation	1.03	1.10
Accommodation and Food Services	1.04	1.02

Source: Bureau of Economic Analysis (2013).

transition from staples to a new economy as less complete and more complex, providing perspective on the state's weak performance in employment, wages, and diversification.

*Ski slopes or six guns? Seeking Oregon's New West economy.* A New West economy, researchers argue, is typified by declining extraction-based and rising high-tech, service, and amenity-based industries. The result, they posit, is a more stable economy focused on sustainable economic development. In a general overview of these categories, employment in Agriculture, Forestry and Logging, and Fisheries in Oregon declined from 1997 to 2012 while employment in other Old West industry sectors such as mining and agriculture and forestry-related support activities increased. The location quotient of several of these industries rose during the 1997–2012 period, reflecting increasing concentration relative to the nation as a whole, while those of Mining and Fisheries declined (see Table 4) (Bureau of Economic Analysis 2013).

Oregon's New West sectors reflected similarly diverse trajectories. While employment in Information; Arts, Entertainment and Recreation; and Accommodation and Food Services rose during the period from 1997 to 2012 they often experienced volatile fluctuations. Location quotients for the Information and Arts, Entertainment and Recreation industries also rose over the same period while Accommodations and Food services' declined. However, by 2012, the concentration of these industries only approximated national averages (Bureau of Economic Analysis 2013). Thus, an initial look at Oregon's industrial makeup reflects no clear winner regarding its character as an Old or New West economy. Given this binary characterization's inability to describe Oregon's economic dynamics, a more detailed analysis is required.

*The forest for the trees: Oregon's staples industries.* Despite significant economic hardships, Oregon's staples and

staples-related industries continue to play an important role in both the state's and national economies. Between 1940 and 2007, Oregon resource-based industries' location quotient rose from 1.1 to 1.7 while between 1980 and 2007, location quotients earnings for Oregon's farm, forestry, fishing, and mining industries have doubled (Beyers 2009).

Most significantly, agriculture remains a fundamental part of Oregon's economy. While the number of U.S. farms has continued its decades-long decline, Oregon's steadily increased from 31,892 in 1992 to 38,300 by 2011. Cattle, hay, and wheat are three of the top five commodities generated by this productive base (OSU 2010). Oregon agriculture contributes twice as much to the state's GDP and 30 percent more to its workforce than agriculture does nationally (JPMorgan Chase 2012). Statewide, 19.4 percent of Oregon's employment is based upon direct full- and part-time, indirect, or induced engagement with the agricultural sector providing 17.6 percent of the state's total economic output. Four Oregon counties have been identified as "agriculture dependent" (OSU 2011; Rural Policy Research Institute 2004). Despite record production, as recently as 2007, two-thirds of Oregon farms reported net losses (OSU 2011; USDA 2012). However, analysts project that growing demand from Asia will "offer the potential to revitalize an industry that is slowly being recognized as having an increasing role in Oregon's economic future" (OSU 2011, 21).

Oregon's forest products industry also holds a significant position in the state's economy despite its reduced status since the 1980s. While the number of mills has declined, Oregon still leads U.S. lumber production and, providing \$12.7 billion in total industrial output, remains one of the largest traded sectors for the state (Oregon Forests Resources Institute 2013). Oregon's forest and forest-related activities contribute two and a half times as much to the state's workforce than forestry nationally and represents almost 6 percent of national forestry employment with a location quotient of 4.65 (Oregon Office of Economic Analysis 2013; Rural Policy Research Institute 2004). This sector represents approximately 7 percent of the state's total economic base; however, in counties outside metropolitan Portland, it averages 11 percent and in twelve counties makes up between 15 and 30 percent of the local economic activity. Despite its leading role in U.S. lumber production, Oregon's forest industry lost fourteen thousand jobs and \$527 million of income between 2007 and 2012. As with agriculture, analysts are focusing on increased exports to Asian manufacturers as central to the industry's growth (Oregon Forests Resources Institute 2012).

*Made in Oregon: Expanding manufacturing in the beaver state.* In the wake of the 1980s recession, Oregon's economic development planners placed increasing emphasis on developing a diversified manufacturing economy. This strategy, which particularly emphasized bringing high-technology industries to Oregon, has met with limited success. In

2011, Oregon's manufacturing sector's share of total gross state product was 28.7 percent and employed 10.2 percent of Oregon's overall non-farm labor (NAM 2013). These numbers, however, reflect a strong reliance on the state's forest products and agricultural industries. While Oregon's location quotient for manufacturing is 1.15, its location quotients for fabricated metals, machinery, transportation equipment, and nondurable goods are all significantly less than 1, while its location quotients for its woods products and food industries are 4.65 and 1.3, respectively (Oregon Office of Economic Analysis 2013). In fact, woods products, food, and paper industries make up three of Oregon's top four manufacturing sectors (NAM 2013).

True to Oregon's new economy efforts, computers and electronics make up the largest manufacturing sector in the state. With a location quotient of 2.66, this sector generated more than 70 percent of the total economic output of Oregon's manufacturing (Oregon Office of Economic Analysis 2013). Clearly, high technology is leading Oregon's efforts to shift its economic base. However, employment in Oregon's high-technology sector reached its upper limits in 2001. During the 2001–2003 recession, the sector experienced a 20.5 percent decline in employment. After a limited expansion (6.7 percent) between 2003 and 2006, it retracted again, losing an additional 9.1 percent of its workforce by 2009. Between 2008 and 2010, employment fell an additional 7.1 percent to 53,800 jobs, the lowest level of high-technology employment in the state since 1996 (Cuyler-Crook 2011).

These numbers reflect the vulnerabilities of Oregon manufacturing. Although the state's manufacturing sector outpaced the nation during the economic expansions of the first decade of 2000, by the close of 2010, Oregon witnessed a 28 percent drop in manufacturing employment, returning the number of nonfarm jobs to where it began at the beginning of the decade. The Governor's Balanced Budget report noted, "The 1930s is the only decade on record when [Oregon] income gains were slower" (Governor's Balanced Budget 2011, A-1; JPMorgan Chase 2012).

By 2011, new gains in manufacturing positioned Oregon as the second-fastest growing state in the nation. However, this advance was on a narrow front. In 2010, high technology accounted for 96 percent of Oregon's growth in durable goods while in 2011 durable goods accounted for 83 percent of Oregon's overall advance in GDP. Oregon analysts attributed the majority of this durable goods expansion to the state's computer sector and this, in turn, to a single company: Intel, a California-based semiconductor manufacturer (Young 2012). The recovery's scope is also spatially limited. In 2010, overall, 87 percent of the workers in Oregon's computer industry were employed in metropolitan Portland (Cuyler-Crook 2011).

Further narrowing the resilience of Oregon's manufacturing sector is its heavy reliance on the production of a single commodity: semiconductors. In 2010, nearly 75 percent of Oregon's high technology workforce engaged in

their production (Cuyler-Crook 2011). While semiconductors are the nation's second largest export, between 2005 and 2009, U.S. capacity declined 11 percent as production facilities relocated overseas (Center for Public Policy Innovation 2010).

Internal dynamics in the semiconductor industry drove this shift: increasing development costs are standardizing mainstream production, resulting in semiconductors' further commodification. The outcome, industry analysts note, is that the "semiconductor industry is undergoing a fundamental change in structure that will leave only a few companies producing devices at the leading edge, as more of them utilize common shared foundry processes due to the exorbitant cost of maintaining or building new state-of-the-art fabrication facilities" (McCormack 2010, 1). As a result of industry restructuring, the United States currently leads the world in semiconductor fabrication facility closures. In 2009, fifteen of twenty-seven factories closed worldwide were in the United States. In 2008, the United States also claimed the majority of fifteen plants shuttered globally (McCormack 2010).

In addition to rationalization in the semiconductor industry, changing markets also threaten Oregon's Intel-dependent manufacturing base. Declining personal computer sales (which represent approximately 80 percent of the market for Intel's product) and Intel's absence in the rapidly growing tablet and smartphone market has placed persistent downward pressure on the company's annual revenue growth (Rogoway 2013).

Intel's countercyclical investment in new facilities in Oregon temporarily helped boost the state's economic numbers. However, some of that growth reflected Intel's restructuring in the face of declining sales as it closed other branch plants in Massachusetts, New Mexico, and Washington, consolidating some of that workforce in Oregon. In addition, industry analysts expressed skepticism about sufficient demand for Intel's expanded production capacity in Oregon (Rogoway 2012, 2013).

As a result of these trends, by 2013 Oregon's growth rate again began to sag while wages remained stagnant (Young 2014). Intel's oversized influence on Oregon's economic picture, while briefly leveraging Oregon's position nationally, impacts the state's GDP numbers "in such a way that they don't reflect the average Oregonian" (Young 2012, 1). Oregon's per capita personal income has been in decline relative to the rest of the nation since 1996. While Oregon's minimum wage exceeds the national average, manufacturing and higher-end professional services are paid less, pulling down the state's per capita personal income and further hampering the state's capacity to maintain robust economic growth (Beleiciks 2014).

While many Oregon manufacturers place their hopes in exporting goods to Asia, the state faces a double-edged sword: threat of production capacity relocating overseas and the future uncertainties of Asian economies. As the

Governor's Balanced Budget report reflects, "Longer-term, Oregon faces a good deal of risk associated with the overvalued Chinese currency and future Asian demand conditions. The local impact of the Asian financial crisis during the 1990's highlights this risk, with Oregon now even more closely tied to Asia than it was at that time" (2011-13 Governor's Balanced Budget: The Economic and Revenue Environment).

*Earth and sky: Growing Oregon's green industries.* In 2006, Oregon Governor Kulongoski (2003–2011) announced a new direction in state economic development efforts: make sustainability Oregon's top business and economic development priority, positioning it as a world leader in sustainable development. His motivation, he noted, was a renewed effort to address "the boom-and-bust cycles that Oregon goes through in recessions" (Giegerich 2011, 1). This strategy garnered considerable popular support, particularly among organizations focused on increasing Oregon's workforce skills:

In some ways the opportunity presented by the greening of the economy is not unlike the one presented in the mid-1980s, when the high tech industry created Oregon's silicon forest. What is different is that this new approach to economic development is built on the concept of long-term sustainability, which could be the key to stabilizing Oregon's economy. (Oregon Workforce Partnership 2009, 1)

In support, the governor signed a series of sustainability-oriented legislation focusing on climate change, energy efficiency, and renewable energy. These included greenhouse gas emissions reporting and content standards for out-of-state energy, increasing energy efficiency building codes, authorizing local bonding authority for energy efficiency projects, launching a limited feed-in tariff for new solar capacity, and requiring the blending of biodiesel into state-wide diesel fuel (Climate Solutions 2009).

To frame these efforts, Kulongoski's administration also passed legislation defining green jobs as "a service or produc[ing] a product that: increases energy efficiency; produced renewable energy; prevents, reduces or mitigates environmental degradation; cleans up and restores the natural environment; or provides education, consultation, policy promotion, accreditation, trading and offsets or similar supporting services" (Oregon Workforce Partnership 2009, 1).

To fund these green economy programs, Kulongoski refocused Oregon's limited public investments, committing more than \$1 billion in tax breaks for green energy projects through the controversial business energy tax credit rewarding energy efficient development, and dedicating a significant portion of state lottery monies toward sustainable enterprises (Giegerich 2011; Sickinger 2011). Responding to the federal American Recovery and Reinvestment Act (ARRA), Kulongoski created the Oregon Way Advisory Group (OWAG) composed of twelve "public and private sector leaders with expertise in

sustainability," including the author (Portland Business Journal 2009, 1).

OWAG's charge was to respond to Oregon's economic downturn by assisting "state agencies, local governments, non-profits, and private firms to seek, through public/private partnerships, competitive federal stimulus funding that will create sustainable quality jobs for Oregonians" (The Oregon Way 2009a, 3). OWAG's mandate in pursuing ARRA funds was to lay the groundwork for the state's "short-term stimulus and longer-term economic recovery" (The Oregon Way 2009, 1). The governor's office directed OWAG to assess potential "signature" projects by their ability to meet criteria that in addition to job creation, included sourcing from Oregon-based companies, workforce skills development, renewable energy, carbon reduction, green development goals, and targeting Oregon-based systems-level innovation (The Oregon Way 2009, 1).

However, Kulongowski's reallocation of public investment did not always meet approval, especially among businesses outside the newly identified green sector. As the president of LaPorte and Associates, the Pacific Northwest's largest independently owned insurance agency noted, "I don't think you'd find many businesses who'd think [Kulongoski]'s leaving the state in better shape unless they're in green industries. He's helped decimate most of the industries that used to support the state, like timber and high-tech, so we can become the new green center of the United States" (Giegerich 2011, 2).

Still, state and federal investments significantly increased Oregon's green energy generation, establishing it as a leader in renewable energy production and consumption. Wind power's contribution to Oregon's energy portfolio rose from 1 to 10 percent between 2002 and 2012 (Levesque 2013). During the same period, installed solar electric capacity in Oregon jumped from approximately 1 to 35 megawatts (Sherwood 2008).

The subsidies and regulatory changes also yielded high-profile business development results, drawing several international and out-of-state renewable energy companies to Oregon. For example, Vestas (Denmark), the world's largest wind turbine producer, and Iberdrola Renewables (Spain), one of the largest wind farm operators, moved their North American headquarters to Oregon, and SolarWorld (Germany) opened North America's largest solar cell production facility near Portland. In addition, Sanyo and Panasonic (Japan) joined PV Powered/Advanced Energy (Colorado) and Solaicx (California) in locating plants in the state alongside smaller Oregon-based firms such as PV Trackers, Oregon Crystal, Grape Solar, and Peak Sun Silicon (Hsuan 2009; Jacklet 2008). These recruitments made Oregon a top U.S. solar panel producer.

However, the larger structural result of the state's emphasis on developing a green economy is less clear. The Bureau of Labor Statistics has created new categories such as solar panel installer (74 Oregon jobs in 2010) and wind turbine

service technician (976 Oregon jobs in 2010) to track changes in green jobs; however, most remain within more mainstream job categories (Bureau of Labor Statistics 2013). The state of Oregon's independent attempt to determine the size and scope of its green economy acknowledges this obstacle: "We refer to this as the 'greening of Oregon's workforce.' Rather than a separate green industry, most green jobs are integrated into the existing economy" (Oregon Employment Department 2012, 4).

In 2010, according to the Oregon Employment Department (OED), approximately 3 percent of Oregon jobs (43,148) were identified as green. Forty-two percent of these jobs were identified within the construction and natural resources and mining sectors, each historically vulnerable to business cycles. An additional 13 percent of green jobs were located within local and state government. Only 12 percent of green jobs were identified within the manufacturing sector, and in Oregon's manufacturing sector as a whole, only 3 percent of jobs were identified as green (Oregon Employment Department 2012). In addition, the OED projects the number of total green jobs in Oregon to decline by 1 percent to 42,550 jobs over the next two years (Oregon Employment Department 2012).

While Oregon's economy is not exhibiting overall green jobs growth, the export-driven branch plants anchoring Oregon's renewables industry are exhibiting vulnerability as renewables transform from a niche to a global commodity industry. Increased international competition driving down prices of solar cells and inputs such as polysilicon, causing several Oregon-based solar firms to close, reduce workforces, transfer operations overseas, or consider bankruptcy.

In 2012, the Oregon Energy Department foreclosed on Peak Sun Silicon, Inc., a polysilicon producer in Albany, Oregon, when it defaulted on a \$14-million Oregon economic development loan (Read 2012). Japanese-based Panasonic Corporation, responding to global price-cutting, announced it would close its Oregon solar wafer facilities, transferring them to Malaysia (Watanabe 2013). German-based SolarWorld, suffering from increased competition and declining solar cell prices, laid off 30 percent of its Oregon workforce and is contemplating bankruptcy while Oregon's \$42 million investment in SolarWorld is at risk (Read 2013). Meanwhile, Oregon-based Grape Solar, capitalizing on disruptions in vertically integrated solar firms, buys "cells made in Taiwan, the Philippines and South Korea, shipping them to China for assembly into panels and importing the completed modules to the United States," thereby avoiding tariffs set to stabilize the domestic solar industry while eschewing a domestic production model (Read 2012, 1).

Despite these setbacks, John Kitzhaber, who took office as Oregon's Governor in 2011, maintained support for green jobs and renewable energy, labeling them vital components of any future economy (OIT 2011). His administration's economic development strategy included supporting renewables

as a specific industrial cluster (Oregon Business Plan 2010). Additionally, the strategy emphasized a combination of conservation, supply-chain coordination, public infrastructure investment, and training to increase retention and circulation of capital the traded sector brings into the state (Kitzhaber 2010).

Two important components of this strategy are the state's ten-year energy plan and a regional approach to infrastructure planning. Kitzhaber's energy plan produced a long-desired integrated energy strategy for Oregon, coordinating public investments in energy-related development and infrastructure. Noting Oregon loses a significant portion of the \$14 billion it spends each year on energy, the plan concentrates on conservation, further development of renewable energy-generating capacity, and reducing reliance on fossil fuels (Kitzhaber 2013). In pursuing these objectives, Kitzhaber emphasized increasing supply-chain connections between Oregon firms to further capital retention and circulation in Oregon as well as encouraging the further enhancement of energy-related skills in the state (Kitzhaber 2010).

A regional approach to infrastructure development was another Kitzhaber administration effort to enhance the state's economic resilience. The administration's "Oregon Leads" proposal sought to capitalize on the region's diverse ecology through promoting an ecosystems services business development cluster. In doing so, Oregon became the first state in the nation to incorporate ecosystem services into its mainstream economic development strategy (Kitzhaber 2010).

The Pacific Northwest Regional Infrastructure initiative is a further component of this effort. The initiative's objective is to expedite infrastructure projects such as "renewable energy generation, electricity transmission, broadband, pipelines, ports and waterways, and water resource development" (DOI 2013, 1; Rodin and Kitzhaber 2013).

These and other initiatives make up what Governor Kitzhaber labeled an "economy of innovation" focused on advanced manufacturing, energy and materials efficiency, renewable energy production, conservation, and regional coordination (Esteve 2011). Although too early to measure their impact, they offer some insight into the trajectory of Oregon's efforts to plan for a sustainable economy.

## Discussion

In this article, I explore whether development theories iconic to North America's Old West provide a framework that informs Oregon's contemporary economic underperformance. Standard classifications of Old and New West economies provide limited and at times contradictory evidence regarding Oregon's economic dynamics. However, a review of recent Oregon economic data and economic development strategies reflect that, on the whole, Innis's Staples Thesis offers more powerful means for describing Oregon's contemporary economy. Innis predicted staples economies

would exhibit significant continuity between a region's historic staples order and its industrial transformation. For Oregon, this is true on several fronts. Staples still play a significant and sometimes growing role in Oregon's overall economy. Agriculture and forestry continue to make large contributions to employment and exports, especially in communities outside Portland's metropolitan area. In addition, a large segment of the state's manufacturing base is tied to these staples industries, and a considerable percentage of Oregon's newly identified "green" jobs are directly tied to or dependent upon the state's staples economy as well. Furthermore, Oregon's transition to high technology and renewable energy manufacturing center on the production of industrial commodities such as semiconductors and solar cells (staples of the present information and green economies), each of which, like forest and farm commodities, suffer from vulnerability to global fluctuations in the value and demand. Each has expressed hope that increased exports to Asia can revive their sector.

Innis also predicted the externally led, branch plant nature of staples regions' industrialization and dependence on "distant metropolises" makes them "storm centers to the international economy." Indeed, out-of-state and international firms opening branch plants in Oregon have driven much of its high technology and renewables development. Although providing some diversification, these firms, the commodities they produce, and their reliance upon global markets have largely replicated the boom/bust pattern of Oregon's original natural resource-based economy. Their history reflects that the monikers "information age" and "green" have little meaning if they keep a region dependent on external capital and markets.

As a result, high levels of poverty, low wages, and per capita income stagnating in an undiversified economy continue to describe much of Oregon's economic reality. This is a far cry from the independent, self-reliant society Turner predicted frontier settlements at the end of the Oregon Trail would produce. Rather, Oregon's development has led to a life that, for many Oregonians, has risen barely above the poverty line.

Oregon's present economy appears, then, to approximate much more closely the type of development Innis predicted postfrontier, peripheral regional economies would generate. Dependence upon a narrow base of industries, vulnerability to larger economic cycles, and a stunted internal market make it difficult for Oregon's economy to accumulate wealth, skills, or economic power necessary for long-term sustainable growth.

However, despite the apparent success of Innis's Staples Thesis in characterizing Oregon's economic dynamics, Turner's thesis appears to be alive in several areas. As noted, Innis and Turner viewed westward expansion as a dialectical relationship between settler culture and the environment. Turner posited a positive synthesis, a "frontier of hope" where democratic self-reliance would replace Old World norms of dependency and deference (Library of Congress 2010).

This ethos permeates Oregon with particular force. Since first European contact through to the present era, settlers and immigrants have repeatedly described Oregon and especially the Willamette Valley as an ecological paradise where social independence and environmental harmony could be achieved (Kopp 2009). This cultural vision of positive social and ecological unity has been an influential, recurring factor guiding Oregon's economic development policies toward innovation, conservation, green jobs, and renewable energy (Kitzhaber 2012; Kulongoski 2005; Oregon Historical Society 2008).

While Innis's bleaker perspective predicted that the evolution of an export-led, staples economy would result in a weak entrepreneurial class, the data indicate that the "frontier" spirit of innovation remains in Oregon's leading position in new business start-ups and venture capital investment. This aspect of Oregon's economy is reflected in Governor Kulongoski's focus on innovation with ARRA funding as well as Governor Kitzhaber's emphasis on enhancing an "economy of innovation" by removing financial and regulatory barriers for Oregon-based companies.

Turner's thesis that peripheral economies would exhibit greater independence and self-reliance is answered in part by Oregon's increasing levels of renewable energy generation and, depending on its character, growing agricultural base. The Kitzhaber administration's focus on increasing capital retention, meeting new energy needs through conservation, and efforts to coordinate regional infrastructure planning reflect these attributes as well. In addition, inclusion of ecosystem services in Oregon's overall economic development strategy reflects both innovation and an attempt to develop a greater portion of the state's economy within the region itself.

These types of import substitution initiatives are rooting Oregon's economy in place, providing opportunities to lessen dependency on the exigencies of global markets and capital flows. In doing so, they are connecting with a revival of import substitution strategies central to freeing regional economies from dependency on global market mandates (Markusen and Schrock 2009; Sunkel 1973). Through such means, a number of Oregon's initiatives add a deeper meaning to "green" development. While these initiatives are set within an otherwise difficult economic picture, they remain important potential avenues for Oregon's development to take a new turn toward the type of innovative, independent, self-reliant society Turner postulated for western North America. Together, they contain the potential to redefine the planning of a sustainable economy.

## Future Research

Situating Oregon within the dynamics of dependent, peripheral economies opens up important avenues of research relevant not only to Oregon but similar economies as well. The weak ability of Old/New West classifications to describe Oregon's economic dynamics suggests research into obstacles blocking transitions to a New West economy and whether, once achieved, such an economy can deliver on the

wages and overall economic stability it is purported to produce. It also begs the question if a “new” Old West economy might be emerging around sustainable agriculture and forestry practices, recycling, and indigenous renewable energies such as biogas. Also, critical analyses of the true value of green industries in contributing to state and regional economic self-reliance will be important.

In addition to questions of production, issues of policy and governance offer valuable veins to follow. With time, it will be possible to investigate the effectiveness of specific green business development policies in establishing a more sustainable economy in Oregon and similarly situated states. Comparative studies of state and regional best practices and cross-state, cooperative efforts to free peripheral regions from boom/bust economic cycles will be of particular interest to policy makers. Also, from a sociological perspective, more in-depth explorations of regional cultural narratives underpinning economic development policies can identify discourses available to economic development innovators wishing to guide their regions toward more robust, less dependent economies. These and a range of other research projects will be necessary if a sustainable or possibly even regenerative economy is to be achieved in the American West.

### Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author received no financial support for the research, authorship, and/or publication of this article.

### References

- Acland, C., and W. Buxton. 1999. *Harold Innis in the New Century: Reflections and Refractions*. Montreal: McGill-Queens University Press.
- Amin, S. 1976. *Unequal Development: An Essay on the Social Formations of Peripheral Capitalism*. New York: Monthly Review Press.
- Baran, P. 1952. *The Political Economy of Underdevelopment*. New York: Monthly Review Press.
- Beleiciks, N. 2014. “Why Oregon’s Personal Income Trails the Nation.” <http://www.qualityinfo.org/olmisj/ArticleReader?itemid=00007431> (accessed October 9, 2014).
- Berger, C., ed. 1976. “Harold Innis: The Search for Limits.” In *The Writing of Canadian History*, 97–100. Toronto: Oxford University Press.
- Beyers, B. 2009. *Recession and Recovery: Current Impacts and Future Opportunities for the Pacific Northwest*. Pacific Northwest Regional Economic Conference, Vancouver, Washington.
- Bureau of Economic Analysis. 2013. “Regional Economic Accounts.” <http://www.bea.gov/regional/index.htm> (accessed October 16, 2013).
- Bureau of Labor Statistics. 2010a. “Unemployment Rate: The Percent of the Labor Force That Is Unemployed, Not Seasonally Adjusted.” [http://www.google.com/publicdata?ds=usunemploymentandmet=unemployment\\_rateandidim=state:ST410000a&ndq=Oregon+unemployment+rates#met=unemployment\\_rateandidim=state:ST410000andtdim=true](http://www.google.com/publicdata?ds=usunemploymentandmet=unemployment_rateandidim=state:ST410000a&ndq=Oregon+unemployment+rates#met=unemployment_rateandidim=state:ST410000andtdim=true) (accessed February 2, 2011).
- Bureau of Labor Statistics. 2010b. “Local Area Unemployment Statistics: Alternative Measures of Labor Underutilization for States, 2010 Annual Averages.” <http://www.bls.gov/lau/stalt.htm> (accessed January 5, 2009).
- Bureau of Labor Statistics. 2013. “May 2012 State Occupational Employment and Wage Estimates Oregon.” [http://www.bls.gov/oes/current/oes\\_or.htm](http://www.bls.gov/oes/current/oes_or.htm) (accessed May 31, 2013).
- Byerly, J., and J. Jurjevich. 2013. “New Census Data Show Poverty on the Rise in Oregon and Nationwide” (Population Research Center, Portland State University). <http://mkn.research.pdx.edu/2013/02/new-census-data-show-poverty-on-the-rise-in-oregon-and-nationwide/> (accessed October 9, 2014).
- Canadian Encyclopedia. 2009. “Harold Adams Innis.” <http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCEandParams=A1ARTA0004004> (accessed September 10, 2010).
- Cardoso, F., E. Faletto, and M. Urquidi. 1979. *Dependency and Development in Latin America*. Berkeley: University of California Press.
- Careless, J. 1954. “Frontierism, Metropolitanism, and Canadian History.” *Canadian Historical Review* 35 (1): 1–12.
- Center for Public Policy Innovation. 2010. “The Decline of Semiconductor Manufacturing in the US.” <http://cpponline.org/docs/The-Divide-of-Semiconductor-Manufacturing.pdf> (accessed May 30, 2013).
- Chilcote, R. 1984. *Theories of Development and Underdevelopment*. Boulder, CO: Westview.
- Citizendium. 2009. “Fredrick Jackson Turner.” [http://en.citizendium.org/wiki/Frederick\\_Jackson\\_Turner](http://en.citizendium.org/wiki/Frederick_Jackson_Turner) (accessed January 14, 2011).
- Climate Solutions. 2009. “Governor Kulongoski Signs Climate Change Legislation into Law.” <http://climatesolutions.org/news/governor-kulongoski-signs-climate-change-legislation-into-law> (accessed May 30, 2013).
- Creighton, D. 1957. *Harold Adams Innis: Portrait of a Scholar*. Toronto: University of Toronto Press.
- Cronon, W. 1991. *Nature’s Metropolis: Chicago and the Great West*. New York: Norton.
- Cuyler-Crook, J. 2011. “Oregon’s High-Tech Employment Trends—What Is High Tech?” (Oregon Employment Department). <http://www.qualityinfo.org/olmisj/ArticleReader?itemid=00004893> (accessed May 30, 2013).
- Dagget, D. 1998. *Beyond the Rangeland Conflict*. Flagstaff, AZ: Good Steward Project.
- Dao, M. and P. Loungani. 2010. *The Human Cost of Recessions: Assessing It, Reducing It*, IMF Staff Position Note SPN/10/17. Washington, D.C.: International Monetary Fund.
- Darling, E. 2005. “The City in the Country: Wilderness Gentrification and the Rent Gap.” *Environment and Planning A* 37 (6): 397–426.
- DOI (Department of the Interior). 2013. “Secretary Jewell Signs Agreement with Pacific Northwest States to Expedite Review, Permitting of Energy Infrastructure.” <http://www.doi.gov/news/pressreleases/secretary-jewell-signs-agreement-with-pacific-northwest-states-to-expedite-review-permitting-of-energy-infrastructure.cfm> (accessed June 4, 2013).

- Drache, D., ed. 1995. "Introduction." In *Staples, Markets, and Cultural Change: Selected Essays*, by Harold Innis, xiii–liv. Montreal: McGill-Queen's University Press.
- Easterbrook, W., and M. Watkins. 1984. "The Staple Approach." In *Approaches to Canadian Economic History*, edited by W. Easterbrook and M. Watkins. Ottawa, ON: Carleton Library Series, Carleton University Press.
- Esteve, H. 2009. "Economic Experts Disagree on Where Oregon's Economy Is Heading." *The Oregonian*. [http://www.oregonlive.com/politics/index.ssf/2009/04/economic\\_experts\\_disagree\\_on\\_w.html](http://www.oregonlive.com/politics/index.ssf/2009/04/economic_experts_disagree_on_w.html) (accessed April 10, 2009).
- Esteve, H. 2011. "Governor Kitzhaber Says Small Business, 'Economy of Innovation' Will Lead Oregon out of Recession." *The Oregonian*. [http://www.oregonlive.com/politics/index.ssf/2011/04/kitzhaber\\_says\\_small\\_business.html](http://www.oregonlive.com/politics/index.ssf/2011/04/kitzhaber_says_small_business.html) (accessed June 4, 2013).
- Faragher, J. 1994. "Introduction." In *Rereading Frederick Jackson Turner: "The Significance of the Frontier in American History," and Other Essays*. New York: H. Holt.
- Francis, D. 2009. *The Technological Imperative in Canada: An Intellectual History*. Vancouver: UBC Press.
- Frank, A. 1975. "Development and Underdevelopment in the New World: Smith and Marx vs. the Weberians." *Theory and Society* 2 (Spring): 431–66.
- Geddes, P. 1904. *Civics: As Applied Sociology*. <http://www.gutenberg.org/ebooks/13205> (accessed February 7, 2012).
- Giegerich, A. 2011. "Kulongoski Leaves Unknown Legacy." *Portland Business Journal*. <http://www.bizjournals.com/portland/print-edition/2011/01/07/kulongoski-leaves-unknown-legacy.html?page=all> (accessed May 30, 2013).
- Governor's Balanced Budget Report. 2011. "2011–2013 Governor's Balanced Budget: Economic and Revenue Environment." [http://www.oregon.gov/gov/docs/priorities/budget\\_economic\\_revenue\\_environment.pdf](http://www.oregon.gov/gov/docs/priorities/budget_economic_revenue_environment.pdf) (accessed May 30, 2013).
- Haugen, S. 2009. "Measures of Labor Underutilization from the Current Population Survey" (Bureau of Labor Statistics Working Papers 424, United States Department of Labor, Washington, DC).
- Hsuan, A. 2009. Sanyo Electric Opens New Solar Panel Plant in Salem. *The Oregonian*. [http://www.oregonlive.com/business/index.ssf/2009/11/sanyo\\_solar\\_plant\\_opens\\_with\\_o.html](http://www.oregonlive.com/business/index.ssf/2009/11/sanyo_solar_plant_opens_with_o.html) (accessed May 31, 2013).
- Hutton, T. 2009. *Contours of the Post-staples State: The Reconstruction of Political Economy and Social Identity in 21st Century Canada*. Vancouver: Center for Human Settlements, University of British Columbia.
- Hyde, A. 1998. "Nothing New under the Sun: Continuities in the West." *Pacific Historical Review* 47 (3): 393–99.
- Innis, H. 1995. *Staples, Markets, and Cultural Change: Selected Essays* (Innis Centenary Series), edited by Daniel Drache. Montreal: McGill-Queen's University Press.
- Jacklet, B. 2008. "The Rise of Oregon's Solar Industry." *Oregon Business Journal*, June. <http://www.oregonbusiness.com/articles/25-june-2008/406-the-rise-of-oregons-solar-industry> (accessed May 31, 2013).
- Jackson, P., and R. Kuhlken. 2006. *A Rediscovered Frontier: Land Use and Resource Issues in the New West*. Lanham, MD: Rowman & Littlefield.
- JPMorgan Chase. 2012. *Oregon Economic Outlook*. New York: JPMorgan.
- Kay, C. 1993. *Latin American Theories of Development and Underdevelopment*. London: Routledge.
- Kaylor, C. 2009. "Oregon's Recessions: A History." Worksource Qualityinfo.org, Oregon Employment Department. <http://www.qualityinfo.org/olmisj/ArticleReader?itemid=00006417#Graph%201> (accessed December 24, 2010).
- Kitzhaber, J. 2010. *Jobs for Today. Jobs for Tomorrow: A Strategy for Oregon's Economic Prosperity*. Salem, OR: John Kitzhaber for Governor.
- Kitzhaber, J. 2013. "10-Year Energy Action Plan." [http://www.oregon.gov/energy/Ten\\_Year/Ten\\_Year\\_Energy\\_Action\\_Plan\\_Final.pdf](http://www.oregon.gov/energy/Ten_Year/Ten_Year_Energy_Action_Plan_Final.pdf) (accessed July 11, 2015).
- Kitzhaber, J., and J. Rodin. 2013. "Raising the Grade on Infrastructure: Money, Methods and Message." <http://www.governing.com/blogs/view/col-raising-grade-infrastructure-money-methods-message.html> (accessed July 11, 2015).
- Kopp, J. 2009. *Eden within Eden*. Corvallis, OR: Oregon State University Press.
- Kuhnen, F. 1987. Concepts for the Development of the Third World: A Review of the Changing Thoughts between 1945 and 1985. *Quarterly Journal of International Agriculture* (Germany) 26 (2): 157–67.
- Kulongoski, T. 2005. "Governor and Attorney General to Announce Distribution of \$14 Million in Energy Assistance for Low Income Oregonians and Launch New Online Energy Saving Resource." [http://archivedwebsites.sos.state.or.us/Governor\\_Kulongoski\\_2011/governor.oregon.gov/Gov/p2005/press\\_112105c.shtml](http://archivedwebsites.sos.state.or.us/Governor_Kulongoski_2011/governor.oregon.gov/Gov/p2005/press_112105c.shtml) (accessed October 9, 2014).
- Larson, J. 1993. "Grasping the Significance of the Turner Legacy: An Afterward." *Journal of the Early Republic* 13 (2): 241–49.
- Levesque, C. 2013. "Wind Now 10% of Electricity in Nine States, Over 20% in Iowa, South Dakota." *RenewableEnergyWorld.com*. <http://www.renewableenergyworld.com/rea/news/article/2013/03/wind-now-10-of-electricity-in-nine-states-over-20-in-iowa-south-dakota> (accessed May 31, 2013).
- Library of Congress. 2010. "How Have American Historians Viewed the Frontier?" <http://www.loc.gov/rr/european/mofc/whitehead.html> (accessed October 9, 2014).
- Limerick, P. 1987. *The Legacy of Conquest: The Unbroken Past of the American West*. New York: Norton.
- Limerick, P., W. Travis, and T. Scoggin, eds. 2002. *Workshop Report: Boom and Bust in the American West*. Boulder, CO: Center of the American West, University of Colorado.
- Markusen, A., and G. Schrock. 2009. "Consumption-Driven Regional Development." *Urban Geography* 30 (4): 1–24.
- MacDonnell, L. 1999. *From Reclamation to Sustainability: Water, Agriculture, and the Environment in the American West*. Niwot, CO: University Press of Colorado.
- McCormack, R. 2010. "U.S. Becomes a Bit Player in Global Semiconductor Industry: Only One New Fab under Construction in 2009." *Manufacturing and Technology News* 17:3.
- McPherson, M. 2010. "Portland's Economy." *Mark McPherson's Geography 321-Portland, Oregon* (blog). from [http://geog-321portland.blogspot.com/2010\\_09\\_01\\_archive.html](http://geog-321portland.blogspot.com/2010_09_01_archive.html)
- Oregon Business Plan. 2010. "About Oregon's Industry Clusters." <http://www.oregonbusinessplan.org/Industry-Clusters/About-Oregons-Industry-Clusters.aspx> (accessed June 4, 2013).
- Oregon Employment Department 2012. *Greening Oregon's workforce: Jobs, wages, training*. Salem, Oregon: State of Oregon.
- Oregon Forests Resources Institute. 2012. "The 2012 Forest Report: An Economic Assessment of Oregon's Forest and Wood Products Manufacturing Sector." Oregon Forests Resource Group.

- Oregon Forests Resources Institute. 2013. "Poised to Rebound." <http://www.theforestreport.org/economic-contributor.php> (accessed May 29, 2013).
- Oregon Historical Society. 2008. "Governor Tom McCall." <http://www.ohs.org/education/focus/governor-tom-mccall.cfm> (accessed October 9, 2014).
- OIT (Oregon Institute of Technology). 2011. "University System Launches State's Largest Solar Project, Governor Kitzhaber Breaks Ground at Oregon Tech." 08-18 2011/university\_system\_launches\_state\_s\_largest\_solar\_project\_governor\_kitzhaber\_breaks\_ground\_at\_oregon\_tech.aspx (accessed June 4, 2013).
- Oregon Office of Economic Analysis. 2010. "State of Oregon." [http://www.oregon.gov/DAS/OEA/economic.shtml#Most\\_Recent\\_Forecast](http://www.oregon.gov/DAS/OEA/economic.shtml#Most_Recent_Forecast) (accessed February 8, 2011).
- Oregon Office of Economic Analysis. 2013. "2011 Manufacturing Location Quotients." <http://oregoneconomicanalysis.wordpress.com/2012/07/06/2011-manufacturing-location-quotients/> (accessed May 29, 2013).
- OPB (Oregon Progress Board). 2009. <http://benchmarks.oregon.gov/> (accessed January 5, 2010).
- Oregon State Archives. 2013. "Oregon Blue Book." <http://blue-book.state.or.us/facts/economy/economy01.htm> (accessed May 29, 2013).
- OSU (Oregon State University). 2010. *Agriculture and the Oregon Economy*. Corvallis: Oregon State University Extension Service.
- OSU (Oregon State University). 2011. *Oregon Agriculture and the Economy: An Update*. Corvallis: Oregon State University Extension Service.
- Oregon Workforce Partnership. 2009. "Building a Greener Workforce: Better Skills, Better Jobs, and Greener Industries for Oregon's Economy." <http://oregonwfppartnership.org/wp-content/uploads/2010/03/owpgreenwhitepaper08.12.091.pdf> (accessed May 30, 2013).
- Popper, D., R. Lang, and F. Popper. 2000. "From Maps to Myth: The Census, Turner and the Idea of the Frontier." *Journal of American and Comparative Culture* 23 (1): 91–102.
- Portland Business Journal. 2009. <http://www.bizjournals.com/portland/stories/2009/03/16/daily43.html> (accessed March 20, 2009).
- Power, T., and R. Barrett. 2001. *Post-Cowboy Economics: Pay and Prosperity in the New American West*. Washington, DC: Island Press.
- Prebisch, R. 1986. "Address Delivered by Dr. Raul Prebisch at the Twenty-First Session of ECLAC." *Cepal Review* 29.
- Punke, M. 2007. *Last Stand: George Bird Grinnell, the Battle to Save the Buffalo, and the Birth of the New West*. New York: Smithsonian Books/Collins.
- Read, R. 2012. "Peak Sun Silicon Falls Hard as State Begins Foreclosure." [http://www.oregonlive.com/business/index.ssf/2012/09/peak\\_sun\\_silicon\\_falls\\_hard\\_as.html](http://www.oregonlive.com/business/index.ssf/2012/09/peak_sun_silicon_falls_hard_as.html) (accessed July 12, 2015).
- Read, R. 2013. "SolarWorld to Lay Off 100 in Hillsboro as Chinese Manufacturers Continue Cutting Prices." [http://www.oregonlive.com/business/index.ssf/2013/07/solarworld\\_to\\_lay\\_off\\_100\\_in\\_h.html](http://www.oregonlive.com/business/index.ssf/2013/07/solarworld_to_lay_off_100_in_h.html) (accessed July 11, 2015).
- Reibsame, W., J. Robb, H. Gosnell, and D. Theobald. 1997. *Atlas of the New American West: Portrait of a Changing Region*. New York: Norton.
- Robbins, P., K. Meehan, H. Gosnell, and S. Gilbertz. 2009. "Writing the New West: A Critical Review." *Rural Sociology* 74 (3): 356–82.
- Rogoway, M. 2012. "Intel Makes a Bet on the Future, and Oregon with Massive Hillsboro Expansion." [http://www.oregonlive.com/silicon-forest/index.ssf/2012/10/intel\\_makes\\_a\\_bet\\_on\\_oregon\\_an.html](http://www.oregonlive.com/silicon-forest/index.ssf/2012/10/intel_makes_a_bet_on_oregon_an.html) (accessed October 7, 2014).
- Rogoway, M. 2013. "Intel Laments 'Tough Environment,' Reports Flat 3rd Quarter Sales." [http://www.oregonlive.com/silicon-forest/index.ssf/2013/10/intel\\_reports\\_third-quarter\\_re.html](http://www.oregonlive.com/silicon-forest/index.ssf/2013/10/intel_reports_third-quarter_re.html) (accessed October 7, 2014).
- Rostow, W. 1960. *The Stages of Economic Growth: A Non-communist Manifesto*. Cambridge: Cambridge University Press.
- Roxborough, I. 1979. *Theories of Development and Underdevelopment*. New York: Macmillan.
- Rural Poverty Research Center 2004. *Place matters: Addressing rural poverty*. Columbia, Missouri: Rural Poverty Research Institute.
- Schumpeter, J. 1961. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. New York: Oxford University Press.
- Seers, D. 1980. "The Cultural Lag in Economics." In *The Relevance of Economic Theories*, edited by J. Pajestka and C. H. Feinstein, 3–16. New York: St. Martin's.
- Seligson, M., and J. Passe-Smith, eds. 2009. *Development and Underdevelopment: The Political Economy of Global Inequality*. Boulder, CO: Lynne Rienner.
- Sherwood, L. 2008. *U.S. solar market trends 2008*. Latham, New York: Interstate Renewable Energy Council.
- Sickinger, T. 2011. "The Cost of Green: Huge Eastern Oregon Wind Farm Raises Big Questions About State, Federal Subsidies." [http://www.oregonlive.com/politics/index.ssf/2011/03/post\\_20.html](http://www.oregonlive.com/politics/index.ssf/2011/03/post_20.html) (accessed July 12, 2015).
- Sinha, D. 1999. "The Relevance of the New Growth Theory to Developing Countries." In *The Current State of Economic Science*, 5 vols., edited by S. B. Dahiya, 2457–66. Rohtak, Haryana, India: Spellbound.
- Sombart, W. 1928. *Der moderne kapitalismus: Historisch-systematische darstellung des gesamt-europäischen wirtschaftslebens von seinen anfängen bis zur gegenwart*. Munich: dtv.
- Sum, A., and Khatiwada, I. 2010. The nation's underemployed in the 'Great Recession' of 2007-09. *Monthly Labor Review*, 133(11), 3–15.
- Sunkel, O. 1973. *Past, Present and Future of the Process of Latin-American Underdevelopment*. Budapest: Center for Afro-Asian Research of the Hungarian Academy of Sciences.
- Swanson, L. 2002. The Flathead's Changing Economy: Assessing the Role of National Parks in the Economies of High Amenity, Non-metro Regions of the West." National Parks Conservation Association. <http://www.npca.org/northernrockies/gateway/swanson.pdf> (accessed March 20, 2010).
- Taylor, Q. 1998. *In Search of the Racial Frontier: African Americans in the American West, 1528–1990*. New York: Norton.
- Taylor, Q. 2004. "The Many Lives of the New West." *Western Historical Quarterly* 35 (2): 144–66.
- Teitz, M. 2009. "Planning and Economic Development: An Uneasy Partnership." *Intersight* 12 (9): 112–15.
- The Oregon Way. 2009. *Implementing "ARRA": Accelerating and Sustaining Oregon's Economic Recovery*. Salem, OR: Governor's Office, State of Oregon.
- Turner, J. 1962. *The Frontier in American History*. New York: Holt, Rinehart and Winston.
- Turner, J. 1986. "The Significance of the Frontier in American History." In *Frederick Jackson Turner: Wisconsin's Historian*

- of the Frontier*, edited by Martin Ridge. Madison: State Historical Society of Wisconsin.
- Turner, J. 1994. Rereading Frederick Jackson Turner: The "Significance of the Frontier in American History," and Other Essays. New York: H. Holt.
- Turner, J. 2010. *The Frontier in American History*. Bremen: Europaeischer Hochschulverlag GmbH and Co.
- Turok, I. 2009. "The Distinctive City: Pitfalls in the Pursuit of Differential Advantage." *Environment and Planning A* 41:13–30.
- VanGordon, S. 2010. "Plan for Oregon.com." <http://plan4oregon.com/?p=141> (accessed November 24, 2010).
- Watanabe, C. 2013. "Panasonic to End Solar Wafer Production at Oregon Factory." <http://www.bloomberg.com/news/articles/2013-05-23/panasonic-to-end-solar-wafer-production-at-oregon-factory> (accessed July 11, 2015).
- White, C. 2008. *Revolution on the Range: The Rise of a New Ranch on the American West*. Washington, DC: Island Press.
- Wilbur, C. 1988. *The Political Economy of Development and Underdevelopment*. New York: Random House.
- Young, M. 2012. "Oregon Economy Growing at Nation's Second Fastest Rate." [http://www.oregonlive.com/business/index.ssf/2012/06/oregon\\_economy\\_growing\\_at\\_nati.html](http://www.oregonlive.com/business/index.ssf/2012/06/oregon_economy_growing_at_nati.html) (accessed October 7, 2014).
- Young, M. 2014. "Oregon's Economic Growth, Once among the Fastest Slows in 2013." [http://www.oregonlive.com/money/index.ssf/2014/06/oregons\\_economic\\_growth\\_once\\_among\\_the\\_fastest\\_slows\\_in\\_2013.html](http://www.oregonlive.com/money/index.ssf/2014/06/oregons_economic_growth_once_among_the_fastest_slows_in_2013.html) (accessed October 9, 2014).

### Author Biography

**Robert F. Young** works as an assistant professor at the University of Texas at Austin in the fields of urban planning, sustainable economic development, and urban ecology.