KBOR-DOL Crosswalk: Transitions to the Labor Market and Implications for Policy

For Presentation at:

Kansas Board of Regents

Donna K. Ginther

Professor Department of Economics

Director, Center for Science, Technology & Economic Policy

at the Institute for Policy & Social Research

Patricia Oslund, IPSR

Background

- States are developing longitudinal data in large part, funded by the US Department of Labor's Workforce Data Quality Initiative.
  - States with current projects include Maryland, Virginia, and Arkansas
- Our project links data from Kansas Board of Regents to Kansas Department of Labor records to examine:
  - Employment, earnings and occupation match

Goals of Study

- Link characteristics of 2008-2010 KBOR institution graduates to labor market outcomes
- Analyze earnings of recent graduates by degree type and major
- Explore whether graduates are using their degrees in their employment
- Discuss the strengths and weaknesses of these data for policy-makers.

Data Sources—Employment & Earnings

- KBOR data:
  - Graduates by year, institution, major, and degree level

- Kansas Department of Labor records:
  - Quarterly wages, employer, industry, and time span employed.
  - KDOL data do not include occupation or hours worked.

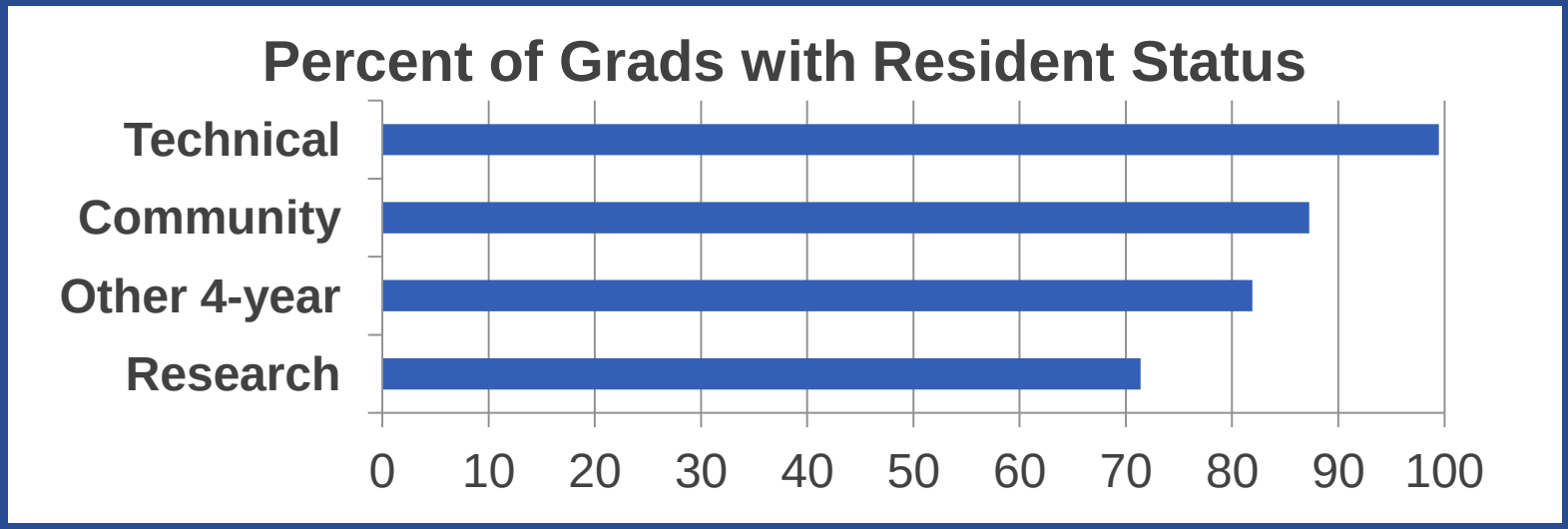
Data Sources—Matching Degree & Occupation

- US Department of Labor cross-walk that maps postsecondary majors to likely occupations and industries.

- American Community Survey data:
  - Individual-level data with information on undergraduate major, occupations, industry, wages, and demographics.

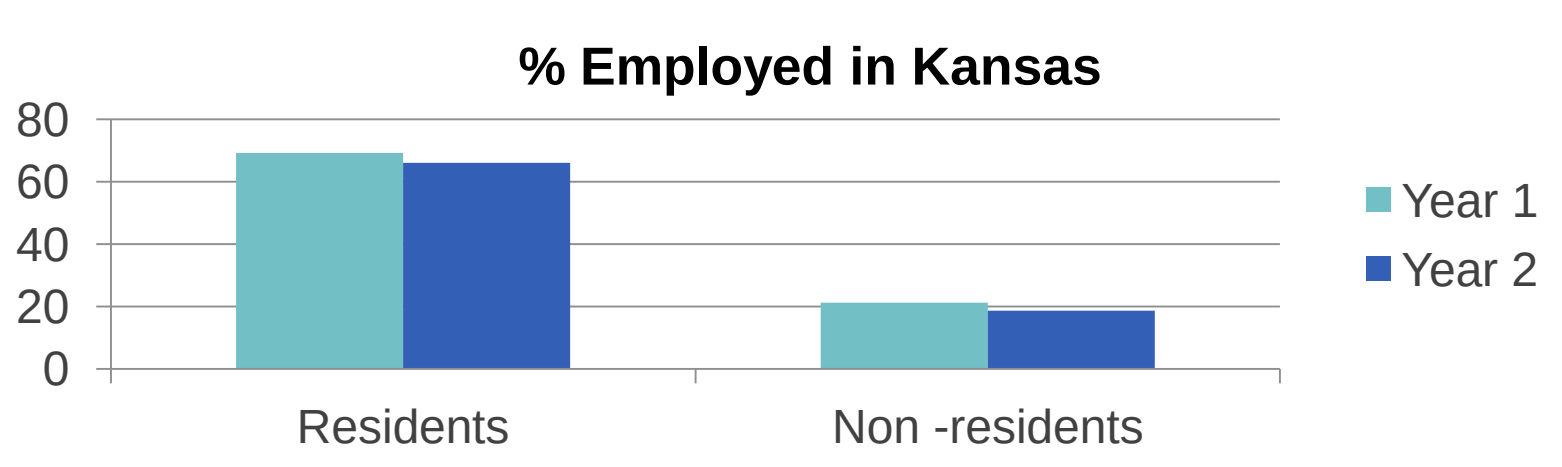
Overview of Graduates: Most Recent Degree 2008-2010 by Residency Status

Type of Institution	Total	Resident	Non-Resident	Unknown	% Resident
Research University	29,984	21,404	7,189	1,391	71.4
Other 4-year University	19,462	15,943	3,184	335	81.9
Community Colleges	30,673	26,768	2,991	914	87.3
Technical Colleges	9,638	9,587	23	28	99.5



Overview of Labor Market Outcomes Most Recent Degree 2008-2010 Four-Year Institutions

Residency Status	Percent Employed in Kansas	
	1 Year after Graduation	2 Years after Graduation
Resident	69.3	66.1
Non-Resident	21.2	18.7



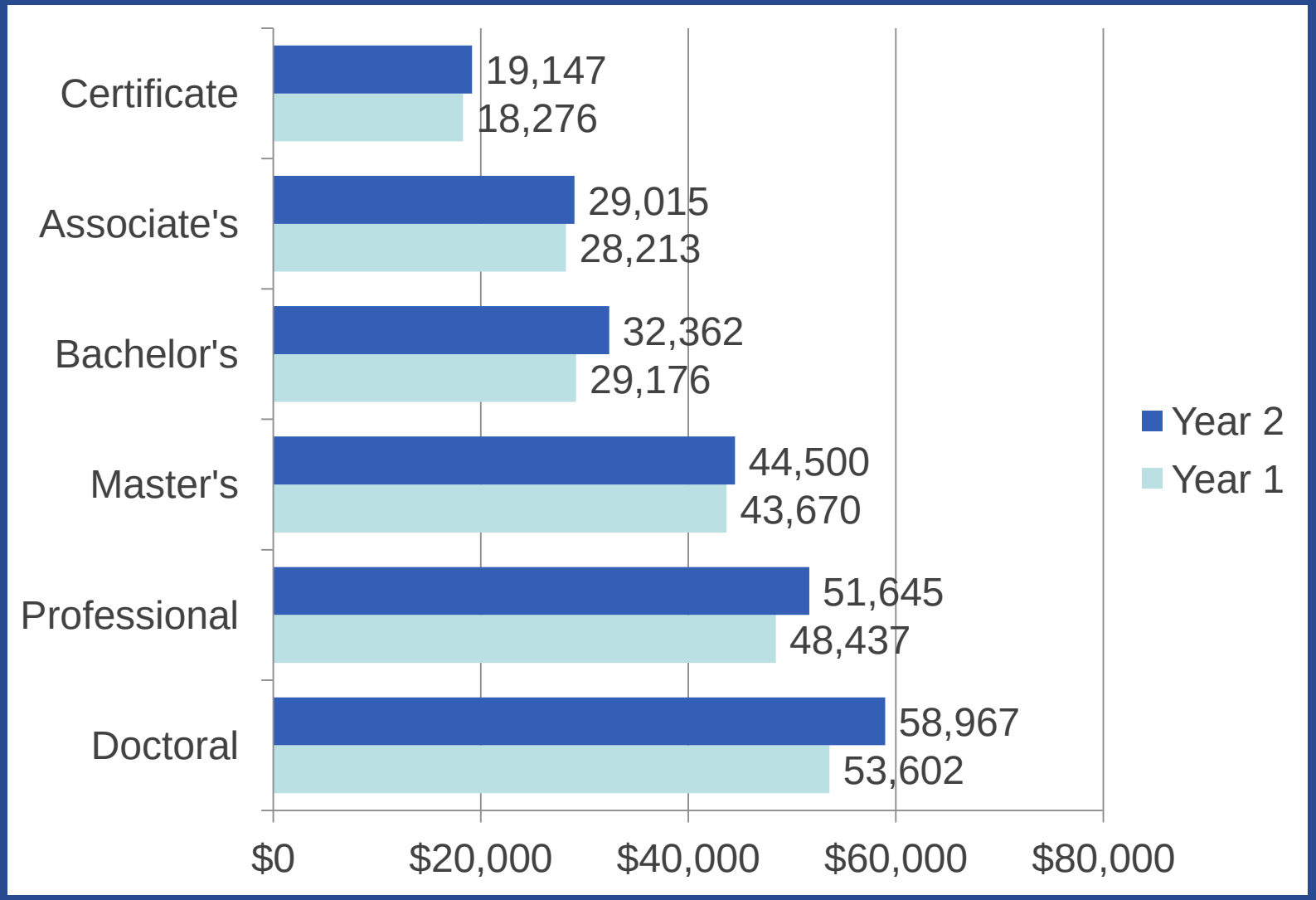
Overview of Labor Market Outcomes Employment Outcomes by University Type

Type of Institution	% Employed in Kansas	
	1 Year after Grad.	2 Years After Grad.
Research Univ.	50.9%	47.5%
Other 4-Year Univ.	69.6%	67.0%
Community Coll.	72.1%	69.7%
Technical Coll.	82.5%	78.8%

Overview of Labor Market Outcomes Most Recent Degree 2008-2010 by Degree Type

- Labor market analysis limited to graduates who did not re-enroll in school and who did not earn additional degrees in the two years following graduation.
  - Those who re-enroll may not be available for full-time employment.
  - Those with additional degrees might end up in the wrong institution or degree category.
  - All earnings are reported in 2013 dollars.

Median Earnings by Degree Type 2008-2010 KBOR Graduates Employed in Kansas



Do Graduates Use Their Degrees?

- Three Indicators of the match between degree and employment.
- Indicator 1: Is the graduate earning wages comparable to others with the same degree type?
  - Used estimates of wages by degree type from the ACS data for people ages 20-30 in Midwest states.
  - If the person earns at least 30% (or more) of ACS respondents with degree type, the person is categorized as using the degree.

Do Graduates Use Their Degrees?

- Indicator 2: Is the graduate working in an occupation that is closely linked to the major degree?
  - The Bureau of Labor Statistics publishes information linking majors to (multiple) occupations.
  - Using ACS data we linked wages to occupations.
  - If the person earns as much as at least 30% of people in the linked occupations, then the student is categorized as using the degree.

Do Graduates Use Their Degrees?

- Indicator 3: Is the graduate working in an industry that is closely associated with her or his major?
  - The Bureau of Labor Statistics publishes information linking majors to (multiple) industries.
  - Kansas DOL data indicates industry of employer.
  - If the person works in a linked industry, then the person is categorized as using the degree.

Do Graduates Use Their Degrees?

- We determined that a person is using their degree if one of these three indicators is true:
  - Indicator 1: Is the graduate earning wages comparable to others with the same degree type?
  - Indicator 2: Is the graduate earning wages that are comparable to typical wages for the occupations linked to her or his major and degree?
  - Indicator 3: Is the graduate working in an industry that is closely associated with her or his major?

Employment and Wages Two Years After Graduation By Selected Major: Certificates

Major	# Grads	% Grads Employed in KS	% of Employed Using Degree	Median Wage Using Degree
Nursing assistant	5,356	75.1	62.6	19,627
Health aides	2,023	81.2	81.7	20,607
Transportation equipment operator	1,719	37.8	70.8	32,363
LPN	1,042	85.3	89.9	33,774
Auto and other transport equip tech	863	74.78	67.1	29,819
Medical, clinical, other health assistants	559	52.4	78.8	25,908
Engineering technology	519	76.4	66.8	33,611
Construction/Building trades	453	75.9	76.5	31,608

Employment and Wages Two Years After Graduation By Selected Major: Associate's

Major	# Grads	% Grads Employed in KS	% of Employed Using Degree	Median Wage Using Degree
Humanities and Liberal Arts	5,012	57.8	46.9	32,008
Nursing (RN)	2,283	81.2	93.5	46,410
Medical, clinical, other health assistants	597	71.2	84.5	37,243
Business, Accounting, Finance	461	67.5	64.0	32,520
Auto and other transport equip tech	452	73.5	76.5	36,932
Computer and Information Technology	287	77.7	67.3	36,576
Engineering technology	279	76.0	75.0	39,980

Employment and Wages Two Years After Graduation By Selected Major: Bachelor's

Major	# Grads	% Grads Employed in KS	% of Employed Using Degree	Median Wage Using Degree
Business, Accounting, Finance	3,715	60.8	76.8	40,176
Education K-12 and Adult	2,650	78.3	90.8	34,778
Social Sciences	2,384	53.1	53.6	37,046
Communications and Journalism	2,088	49.6	61.4	34,577
Engineering	1,788	49.0	86.1	59,389
Humanities, Liberal Arts	1,442	56.9	44.3	35,682
Psychology, Behavioral Science	1,413	57.3	39.8	35,201
Nursing (BSN)	1,315	72.3	92.6	46,971

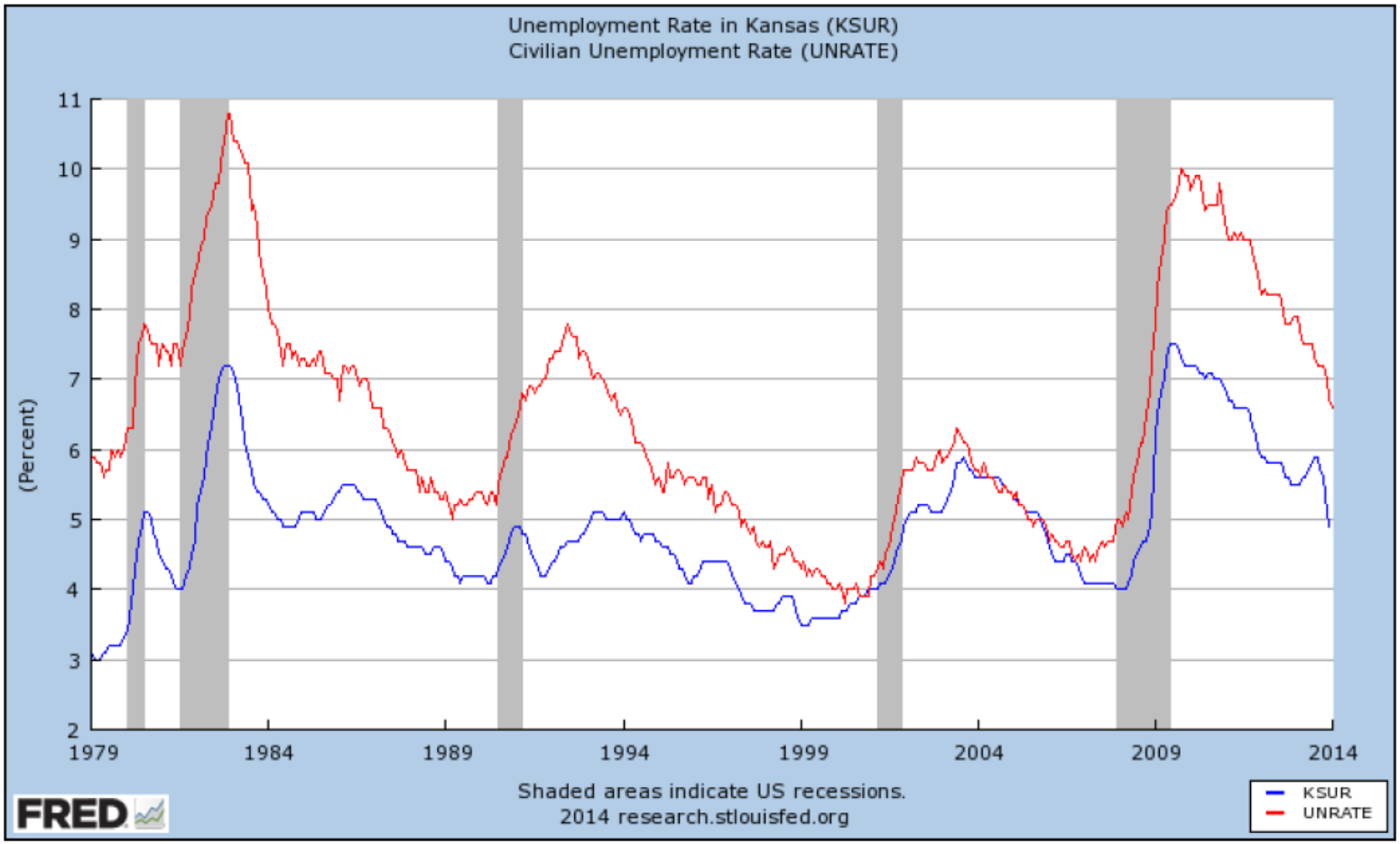
Evaluating the Quality of Employment Data

- Good measure of those working in Kansas.
  - Missing those who may live in Kansas but employed across state line.
  - For example, using KU Alumni data, over 36% of 2008-10 alumni live in the Kansas City metro area (over 80% on Kansas-side). No reliable data on how many work in MO but live in KS and vice versa.
  - Missing federal employees and self-employed.

Evaluating the Quality of Earnings Data

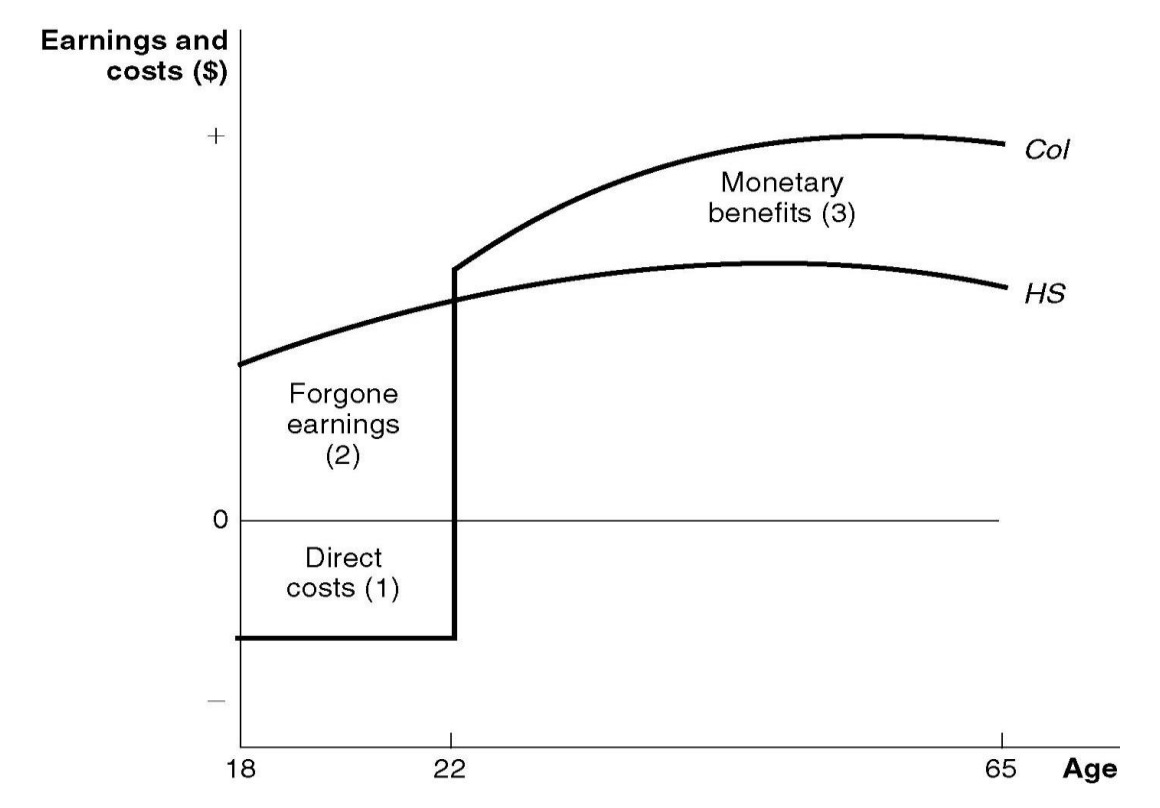
- Initial earnings may or may not reflect the impact of degree on earnings.
  - Questionable Labor Market
  - Return on the Human Capital Investment

Questionable Labor Market



2008-2010 KBOR Graduates confronted the worst labor market in a generation.

Return on the Four-Year Human Capital Investment

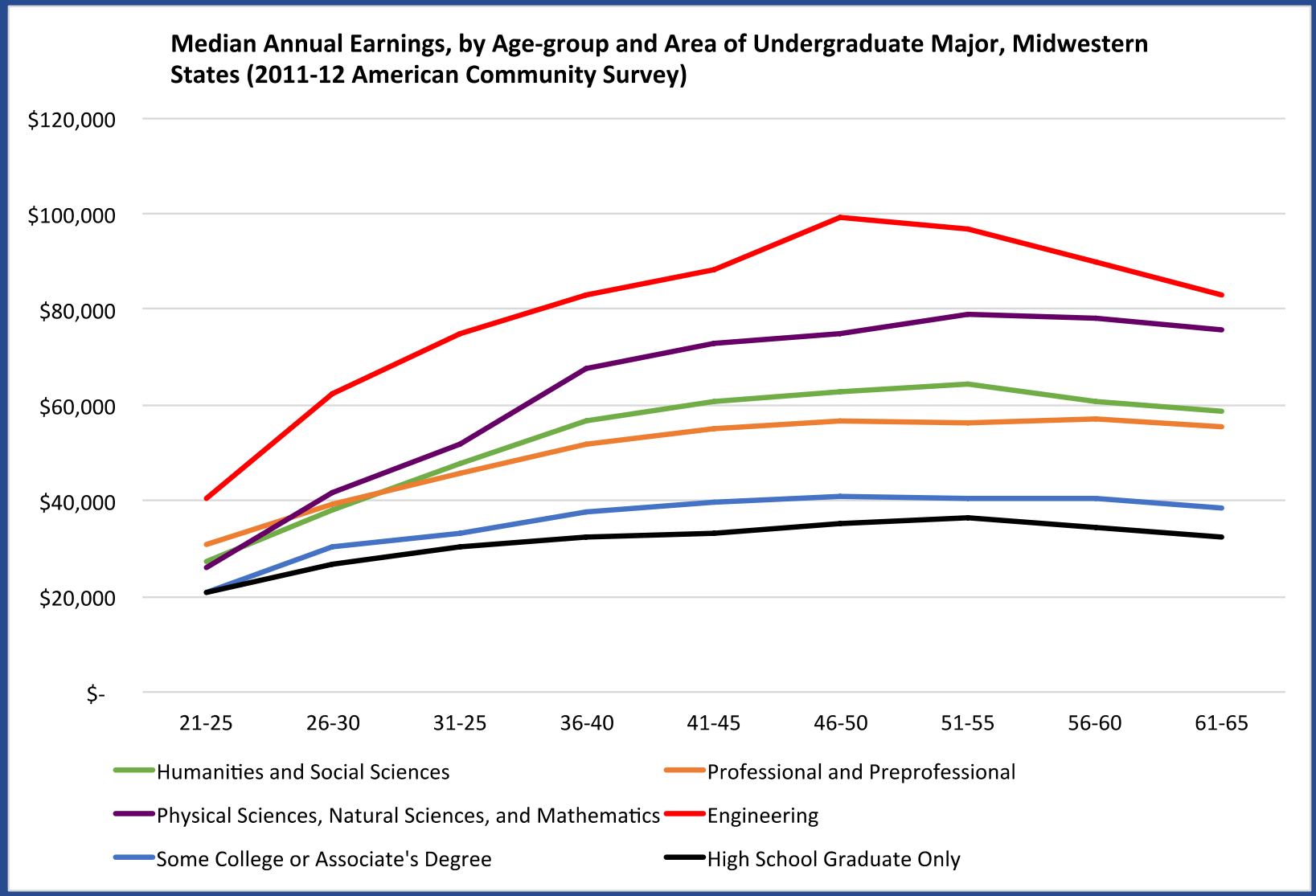


Human capital is an investment where individuals choose to attend postsecondary schooling and major as a function of abilities and ability to pay.

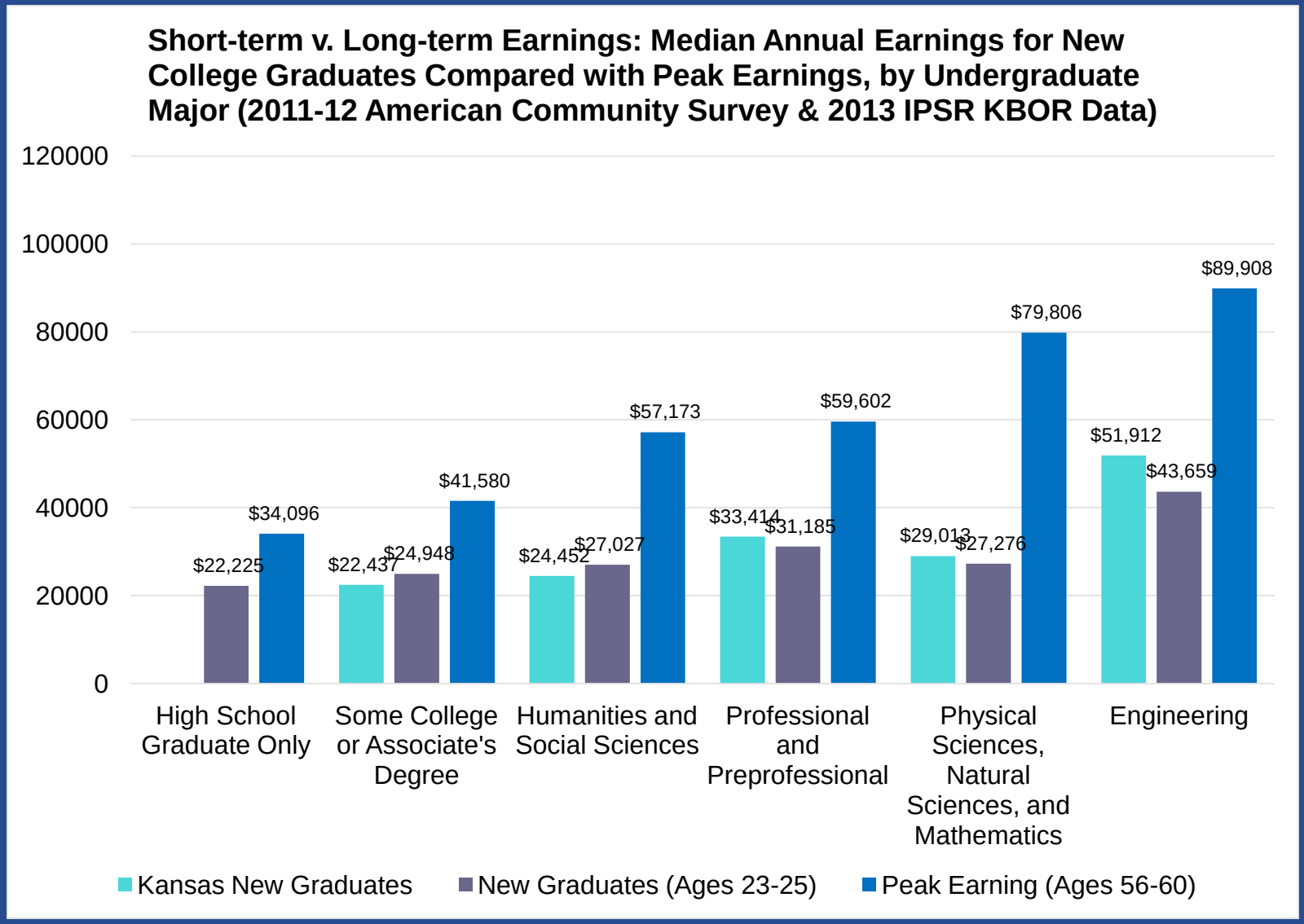
Human Capital Model

- Two types of Human Capital provided by KBOR Institutions
  - General—Four-year university degrees may or may not be closely related to occupation.
  - Occupation Specific—
    - Technical college training (e.g. Nursing, Welding)
    - Graduate/Professional programs (e.g. Medicine)
- Return on the Human Capital investment accrues over time.

Age-Earnings Profiles by Major



Earnings by Degree and Age



Evaluating the Quality of Occupation Match to Major Data

- Initial earnings may or may not reflect the impact of degree on earnings.
- Not all degrees map directly onto occupations.
  - Economics BAs are not practicing economists (54% of Social Science majors are using their degrees).
  - Engineering BS usually work as engineers (86% of engineering majors are using their degrees).

Evaluating the Quality of Occupation Match to Major Data

- Rational individuals maximize utility by choosing degree/major that earns the highest return conditional on individual abilities.
- We don't know the skills / occupations /careers of the future.
- Urge caution against picking "winners" and "losers" among degree programs.

Thinking About the Future

”It's in Apple's DNA that technology alone is not enough — it's technology married with liberal arts, married with the humanities, that yields us the result that makes our heart sing .” Steve Jobs

Conclusions

- Employment in Kansas:
  - About 19% of nonresidents with bachelor's degrees are employed in Kansas.
  - More than 65% of Kansas residents with bachelor's degrees are employed in Kansas.
- The mobility of graduates varies widely by type of institution.
  - Research-institution graduates are more likely to leave the state.

Conclusions

- New Kansas graduates have wages comparable to new graduates in surrounding states.
- Kansas graduates show wage progression, earning more in the second year after graduation than in the first.
- As expected, individuals with occupation-specific majors are more likely to be using their degrees in employment.

Conclusions

- Care must be taken with interpreting these data:
  - Good measure of employment in Kansas
  - Initial earnings do not reflect the full return on the human capital investment
  - Use of degree in employment is suggestive at best
- To improve quality of data, I recommend sharing it with individual institutions

Conclusions