Steve Soychak Bio I share to students

- **Military Brat (Father Stationed in France, Germany, New York, Vietnam, New Hampshire, and Oklahoma)**

- **Graduated from University of Oklahoma with a Petroleum Engineering Degree in 1979**

- **Started work in 1979 in the DJ Basin outside of Denver with Amoco Production Company for 3 years (Supervised my first Hydraulic Fracturing treatment in the Wattenberg Field in 1979)**

- **Worked for Champlin Petroleum (AKA Union Pacific Resources) for 17 years in Denver, Texas, and Wyoming**

- **District Manager/Director for Barrett Resources/Williams/WPX (Williams Energy purchased Barrett in 2001) for 15 years.**

- **Started SJKS VENTURES LLC, consulting Oil and Gas company in late 2014. Worked for the County in late 2014 and early 2015 on draft Federal SEIS on Roan Plateau.**

- **Total Experience of 38 years in the industry (Over 29 years in the Rocky Mountains – Wyoming, Colorado, and Utah). Also Adjunct Prof at CMU for 7 years 2008 to 2014 in the Energy Management/Landman program. Program Director/Faculty for past 5 years.**

- **Personal – Married with 3 daughters (all attended CU), enjoy ice hockey, Alpine boarding, Mountain biking, Fly fishing, and Lake Powell.**
Projective Demand of World Energy

- Globally, Oil consumption is projected to grow by 17%, Natural Gas by 40%, and Renewables by 72% by 2040.
- Total Energy consumption is projected to go up by 28%.
- Renewables go from 13% to 17% of total share.
• US is projected to continue to import Oil (40%) in the future.
• US is projected to export more gas from 1% to 19% of its production by 2040. This will be done by Liquefaction of Natural Gas (LNG) to -260 degrees F then transporting via insulated vessels.
USGS Updates Mancos Shale Gas Assessment
USGS Estimates 66 Trillion Cubic Feet of Natural Gas in Colorado Format
Of the 2.27 Billion acres of Land from the US, 28% or over 600 million acres is controlled by the Federal Government (mostly in the west). This includes BLM, USFWS, NPS, BIA, USFS, and USACE. White shows mostly private land or 72%.
Past CMU graduates with a concentration in EMGT/Landman

• Many of our students will get positions as a Landman with Brokerage firms, energy companies, pipelines, and utilities.

• Other student grads have gone to work with energy service companies, environmental/regulatory compliance, accounting, finance, marketing/transportation, and field positions in different capacities.
What is a Landman?

- A landman is a trained professional who performs work for energy companies, particularly oil and gas companies and coal companies.
- A landman performs one or more of these functions:
  - Negotiating for the acquisition or divestiture of mineral rights.
  - Negotiating business agreements that provide for the exploration for and/or development of minerals.
  - Determining ownership in minerals through the research of public and private records.
  - Reviewing the status of title, curing title defects and otherwise reducing title risk associated with ownership in minerals.
  - Managing rights and/or obligations derived from ownership of interests in minerals.
  - Unitizing or pooling of interests in minerals.
For whom does a Landman work?

- Oil and gas companies
- Pipeline companies
- Coal companies
- Wind energy companies
- For land brokers who provide service to any of the above
- Independent – own business and properties
- Advising individuals concerning agreement
- Starting salaries for entering Landmen range from $58K to $74K
Where does a Landman work?

- In offices of companies
- In the field talking to land owners
- In courthouses reviewing title
- Visiting other companies to negotiate agreements
Other Landman Opportunities

- Management of resources
- Line management
- Alternative energy fields
Other Energy Management Opportunities

- Servicing energy companies (marketing products and services)
- Environmental and Regulatory Compliance (mitigating impacts from energy development and permitting of energy projects)
- Accounting and Finance (oil&gas accounting, procurement, etc.)
- Marketing/Transportation (sale of Oil&Natural gas, hedging, and midstream/downstream opportunities)
• Program
  – 4-year program

  – Bachelor of Business Administration
    • Concentration 30 hours
      – Landman/Energy Management

  • Syllabi available
    – Alignment of curriculum with AAPL standards

    – Also offer a certificate in the program which requires 4 courses or 12 credit hours with another degree.
• EMGT 101 – Introduction to basic concepts of energy management. Instructor Steve Soychak
• EMGT 201 – Introduction to basic concepts of land management and practices. Instructor Steve Soychak
• **EMGT 340 Energy Industry Fundamentals**
  
  Provides energy literacy through a survey of the sources, distribution and uses of energy, including the evolution of energy from wood fires to coal to oil to the current mix of coal, oil, natural gas, nuclear, hydroelectric, wind, geothermal, biomass, solar and ocean currents and tides. Future energy policy, sources, uses and case studies will be discussed as well as alternative energy sources. Instructor Steve Soychak
Climate Change was driving Energy Policy to reduce CO2 emissions, but Americans do prioritize it differently based on Politics.

Global Warming Is a Much More Important Issue to Liberal Democrats Than to Other Registered Voters; It Is the Least Important Issue for Conservative Republicans

<table>
<thead>
<tr>
<th>Rank by</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Healthcare</td>
</tr>
<tr>
<td>2</td>
<td>The economy</td>
</tr>
<tr>
<td>3</td>
<td>Social Security</td>
</tr>
<tr>
<td>4</td>
<td>Gun policies</td>
</tr>
<tr>
<td>5</td>
<td>Abortion</td>
</tr>
<tr>
<td>6</td>
<td>Improving roads, etc.</td>
</tr>
<tr>
<td>7</td>
<td>Environmental protection</td>
</tr>
<tr>
<td>8</td>
<td>Federal budget deficit</td>
</tr>
<tr>
<td>9</td>
<td>Immigration reform</td>
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<tr>
<td>10</td>
<td>Crime reform</td>
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<tr>
<td>11</td>
<td>Russian election interference</td>
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<tr>
<td>12</td>
<td>Income gap</td>
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<tr>
<td>13</td>
<td>Developing clean energy</td>
</tr>
<tr>
<td>14</td>
<td>Global warming</td>
</tr>
<tr>
<td>15</td>
<td>Disaster relief</td>
</tr>
<tr>
<td>16</td>
<td>Disinvestment in public transportation</td>
</tr>
<tr>
<td>17</td>
<td>Same-sex marriage</td>
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<tr>
<td>18</td>
<td>Criminal justice reform</td>
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<tr>
<td>19</td>
<td>Energy independence</td>
</tr>
<tr>
<td>20</td>
<td>Abortion</td>
</tr>
<tr>
<td>21</td>
<td>Foreign policy</td>
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<tr>
<td>22</td>
<td>Abortion</td>
</tr>
<tr>
<td>23</td>
<td>Campaign finance reform</td>
</tr>
<tr>
<td>24</td>
<td>War or peace</td>
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<tr>
<td>25</td>
<td>International trade</td>
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<tr>
<td>26</td>
<td>Wall Street reform</td>
</tr>
<tr>
<td>27</td>
<td>Legalizing marijuana</td>
</tr>
<tr>
<td>28</td>
<td>Income gap</td>
</tr>
</tbody>
</table>

How important will the following issues be when you decide who you will vote for in the 2016 Presidential election? Base: Registered American Voters 18+. March 2016.

Most Liberal Democrats Say Global Warming Will be a Very Important Issue When Deciding For Whom to Vote in the 2018 Congressional Election

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<tr>
<td>1</td>
<td>Global warming</td>
</tr>
<tr>
<td>2</td>
<td>Income gap</td>
</tr>
<tr>
<td>3</td>
<td>Developing clean energy</td>
</tr>
<tr>
<td>4</td>
<td>Abortion</td>
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<td>5</td>
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</table>

How important will the candidates' positions on the following issues be when you decide who you will vote for in the 2018 Congressional election? March 2018. Base: Registered American Voters.
In 1895 to 1900 Arrhenius predicted that the Earth would warm due to increase in CO2 due to primarily to Coal burning. As Arrhenius predicted, both carbon dioxide levels and temperatures increased from 1900–1999. However, carbon dioxide in the atmosphere has increased much more quickly than he expected, but the Earth hasn't warmed as much as he thought it would.

Arrhenius published “By the influence of the increasing percentage of carbonic acid in the atmosphere, we may hope to enjoy ages with more equable and better climates, especially as regards the colder regions of the earth, ages when the earth will bring forth much more abundant crops than at present, for the benefit of rapidly propagating mankind.” (p63)
European Electricity Rates versus Installed Wind/Solar per capita (compare to US)


Also added estimated US and California electricity rates versus Wind/Solar installed per capita.


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**Europe Electricity Price v Installed Wind + Solar Capacity**

![Graph](image-url)
• **EMGT 350 Energy Development, Transportation, and Markets**

• Overview of the energy industry domestic and worldwide. Basic energy industry drilling and production terminology, concepts and terms introduced and utilized throughout the course. Issues surrounding business models, upstream, midstream and downstream discussed in detail. Instructor Steve Soychak
• **EMGT 355 Landman Geo-Petroleum Engineering**

• Petroleum engineering fundamentals. Properties of reservoir rock, single phase fluid flow through porous media, surface forces, fluid saturation, and completion technology. Evaluation of petroleum reservoir field data. Instructor Steve Soychak
Energy Management/Landman Curriculum – Required Courses

• EMGT 355 Landman Geo-Petroleum Engineering
• **EMGT 360 Real Property, Oil and Gas Law**

  • The body of case law surrounding oil and gas leases and leasehold interests, mineral titles, concurrent ownership and split estates, and governmental regulation of mineral development, including pooling and unitization of oil and gas leases.

  Instructor Nate Keever
• **EMGT 410 Energy Regulation and Compliance**

• The body of law surrounding governmental regulation of mineral development, including environmental liability, diligent and prudent operations, contractual risk allocation, and regulatory case studies. Instructor Steve Soychak
EMGT 440 Energy Land Practices I

Imparts mastery of the fundamental concepts and terminology related to real property law. Application of concepts to situations occurring in the energy environment as land is found, purchased and developed for use. Instructor Bryan Hotard.
• **EMGT 450 Energy Land Practices II**

• Imparts mastery of the fundamental concepts and terminology related to real property law. Application of concepts to situations occurring in the energy environment as land is found, purchased and developed for use. Instructor Bryan Hotard.
• **EMGT 494 Energy Senior Seminar**
  
  • Legal, economic, environmental, and national security issues surrounding the energy industry. Alternative energy sources and other current issues in energy management. Prerequisite: EMGT 340. Instructor Dave Ludlam
• Strength of program
  – Proximity to multiple energy sources
  – Within two hours........

  – Piceance Basin (Natural Gas deposit is World Class Asset and Oil Shale Deposit is largest in the world)
  – Coal Mining (NW CO and the North Fork Valley)
  – 5th largest Uranium deposit in US
  – Solar Power (GJ and Rifle)
  – Wind Farms (Outside of Walsenburg 5 hours)

• Numerous energy student tours
Advisory Board Members

- Chuck Shear, CPL
- Dennis Randleman, CPL
- Stephen Smith, Landman/Business owner
- Jim Colosky, JD
- David Ludlam, WSCOOGA
- Steve Soychak, Program Director, PE
- Dr. Stephen Norman, Head of Business Dept.
CMU Landman/Energy Management was accredited by AAPL in September 2017
For Energy Management/Landman

[Image of a group of people posing for a photo with an AAPL accreditation certificate]

[Text on a screen stating: America's Landmen, The American Association of Professional Landmen has Approved, Colorado Mesa University, Department of Business, Energy Management/Landman Program, Grand Junction, CO, as an AAPL Accredited Petroleum Land Management/Energy Management Program. This includes the Program's administrative staff and students with all the privileges that come with AAPL Association. 2017]
AAPL Accredited Programs

- Oklahoma City University: Master of Science: Energy Management, Master of Science: Energy Legal Studies
- University of Calgary: Energy Management Program
- University of Louisiana: Professional Land & Resource Management Program
- The University of Tulsa: Undergraduate Energy Management Program, Masters of Energy Business Program
- Texas Tech University: Energy Commerce Program
- Marietta College: Land and Energy Management Program
- The University of Texas at Austin: Energy Management Program
- Penn State University: Energy Land Management Program
- Western State Colorado University: Energy Management Program
- The University of Wyoming: Professional Land Management Program
- University of Wyoming: Landman Energy Management Program
- Colorado Mesa University: Department of Business

AAPL - America's Landmen

COLORADO MESA UNIVERSITY
Learning curves
By John Benton, VP and GM, Black Hills Exploration & Production

Steven Soychak, program director of the Energy Management/Landman program at Colorado Mesa University, and four of his students recently toured one of our Mancos horizontal well-pads near Debeque, Colorado, the Pueblo Airport Generating Station and the Busch Ranch Wind Farm.

“It was truly an eye-opening and educational experience for all of us,” Soychak said. He also said the students gained a much better understanding of each primary source of electricity and how they interact to provide consumers with affordable energy, as Black Hills works towards meeting the Colorado mandate of a 30 percent renewables portfolio by 2020.

The bachelor’s degree in Energy Management/Landman allows Colorado Mesa University to play an integral role in the developing energy industry worldwide. Students will have the opportunity to acquire business knowledge and skills, as well as a basic understanding of geology, engineering, environmental sciences, marketing, energy management and Landman.

This program was initiated in 2007. Today, 56 students are enrolled in the Energy Management/Landman program. The majority of graduates are employed in the oil and gas industry, with some in renewables and utilities. The faculty’s practical and field experience contributes to the students receiving a hands-on education that will help prepare the students for the challenges that lie ahead for the energy industry.

Black Hills employees helping to arrange and coordinate the visit were John Benton, Chris Burke, Kevin Hall, Paul Hanna, Gary Stripling and George Tatar.
900 acre Solar Farm in Pueblo, Colorado, 126 MW produces at about a 27% CF
## Power Density results from different power sources in Colorado

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Power Density (W/M^2)</th>
<th>Colorado Power Density Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vaclav Smil</td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>200--2,000</td>
<td>1700-4000</td>
</tr>
<tr>
<td>Coal</td>
<td>100--1,000</td>
<td>560</td>
</tr>
<tr>
<td>Solar (concentrating)</td>
<td>4--10</td>
<td></td>
</tr>
<tr>
<td>Solar (PV)</td>
<td>4--9</td>
<td>9</td>
</tr>
<tr>
<td>Wind</td>
<td>0.5--1.5</td>
<td>40</td>
</tr>
<tr>
<td>Wood</td>
<td>0.5--0.6</td>
<td></td>
</tr>
</tbody>
</table>
Be careful what you ask for when increasing renewables on Public lands
(used to be 13 wind turbines provided the same amount
of energy/power as 1 gas well equiv in mid 2000s)

Approximately 16 Gas wells off of I-70 in the Parachute area with less than 2 acres disturbance which produce as much energy as wind power below.

Power Density by Vaclav Smil

Approximately 200 wind turbines in California outside of Palm Springs

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<tr>
<td>Solar (PV)</td>
<td>4.9</td>
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<tr>
<td>Wind</td>
<td>0.5-1.5</td>
</tr>
<tr>
<td>Wood</td>
<td>0.5-0.6</td>
</tr>
</tbody>
</table>
Reclamation reduces footprint of 40 well pad & road from 13 acres to 5 acres
Comparison of gas well disturbance on 400 acres w/new pad drilling

400 acres with 20 acre surface disturbance
Old Style Rigs

400 acres with 40 well pad
New Flex Rig 4S

Black Hills Natural Gas Combined Cycle Power Plants outside of Pueblo
• **Landman Energy Management Club meets once every month. Some past and upcoming events for the Club.**

• Recent Club events were Colorado Oil and Gas Energy Summit past August, NAPE Conference in Houston on February 6th-9th networking with energy companies on Prospects and setting up CMU Energy Management/Landman Booth.
• LEM Club
  – Recognized Club on campus
  – Active Club
  – Meets monthly
  – Fundraises to allow students to attend industry events
    • Trap Shoot
    • Golf Tournament
  – Guest speakers
  – Recruits new LEM students
  – Facilitates networking industry events (WSCOGA annual banquet, NAPE, Beaver Creek)
• President – Kelly Smallwood
• Vice President – Travis Vineyard
• Secretary – Kelsey Pyle/Toni Booth
• Treasurer – Clayton Harrison
• WSCOGA Rep/Alum – Kasey Emrich
• Recruitment Chair – Ryan Smallwood – Advisor Steve Soychak & Dr. Morgan Bridge
Recent EMGT/Landman Student Events


Global Energy Forum, Beaver Creek, Jan. 2017
Recent EMGT/Landman Student Events

NAPE Conference, in Houston on February 12th through 15th
CMU Landman/Energy Management Program Hosts:

Thomas Hager

Friday, February 23rd at 12-1:30 PM in room 213, 2nd floor of the University Center

Come meet and interact with Oregon resident and renowned author Thomas Hager. Hager has published 11 books and has more than 100 published articles and features in popular media sources. Hager will discuss one of his most popular books: The Alchemy of Air, of which has been nominated for many awards and was named one of the “Best Books of the Year” by Kirkus Reviews.

Admission: LEM Club Students, invited Business faculty, invited Students (Chemistry and Engineering) and invited Chemistry/Engineering faculty. Please note this event is invite only. PIZZA provided for Lunch.
LEMC Club sponsored Steve Goreham in February & is looking into Judith Curry in Fall 2019

Steve Goreham is a speaker, author, and researcher on environmental issues, and an independent columnist. He's the Executive Director of the Climate Science Coalition of America, a non-political association dedicated to informing Americans about the realities of climate science and energy economics. Goreham is the author of three books, including his latest, Outside the Green Box: Rethinking Sustainable Development. More than 100,000 copies of his books are now in print.

ENERGY, CLIMATE CHANGE, AND PUBLIC POLICY
PRESENTED BY STEVE GOREHAM
February 21, 2019 • 6–8pm
Colorado Mesa University
University Center, Meyer Ballroom
970.248.1245
ericduhan@coloradomesa.edu
Recent EMGT/Landman Student Events

Recent AAPL/DAPL meeting in Denver this past June/Oct 2018

Field Trip last year in Parachute of Helmrich & Payne Flex Rig 4-S
Scholarships Awarded past semester and future for this semester

- AAPL awards (due to accreditation last year)
  - 2 Scholarships last year and 6 awarded this year.

- 2 Energy Scholar Award (Shear Family)

- Energy Scholar Award (Athletic award WSCOOGA)

- Women in Energy Scholar Award.

- **Increased Scholarships $22,000 to $44,000 per school year (2 semesters)**
Questions?

• Contact Steve Soychak, sssoychak@coloradomesa.edu, 248-1246, DH 301H