

UNIVERSITY of HOUSTON | UH ENERGY

The Energy Workforce: Return to Work during COVID-19

Authored by UH Energy in collaboration with the
Center for Applied Psychological Research

UH Energy White Paper Series: No. 03.2020

White Paper Contributors

About the Authors

Christiane Spitzmueller

Christiane Spitzmueller, Ph.D., is Professor of Industrial Organizational Psychology at the University of Houston (UH), where she conducts research and teaches graduate and undergraduate courses in workforce diversity and engagement, work motivation, and training and development.

Her research has been published in top journals in her field, and her research on topics such as the work-family interface, mentoring and diversity has been cited more than 3000 times. Her work has been funded by NIH and NSF and she currently serves as the principal investigator on a National Academies of Sciences, Engineering and Medicine grant that examines mindfulness interventions as mechanisms to enhance the health, well-being and safety of offshore workers in the Gulf of Mexico. Her recently published book “Research Perspectives on Work and the Transition to Motherhood” examines work-family interface issues facing parents who attempt to reconcile work, family demands and their own health and well-being. Dr. Spitzmueller has worked on joint research projects with energy companies for more than 15 years, including projects with BP, Saudi Aramco, Baker Hughes, ExxonMobil and Diamond Offshore Drilling.

She served as the Managing Director for the NSF funded Center for ADVANCING UH Faculty Success (ADVANCE) from 2017-2019. The UH Center for ADVANCING Faculty success has contributed to UH benefitting from a highly diverse faculty workforce that aims to represent the diversity of the UH student body.

Dr. Spitzmueller received her Ph.D. in Industrial and Organizational Psychology from Bowling Green State University and joined the faculty of the University of Houston in 2003, becoming full professor in 2017. Recently, Dr. Spitzmueller also served as a committee member on a National Academies of Sciences, Engineering and Medicine consensus study on mentoring in STEM, with a focus on increasing mentoring access for students from historically underrepresented backgrounds. She currently serves on the editorial boards for three of the top journals in Human Resource Management: Journal of Organizational Behavior, Journal of Occupational Health Psychology and Organizational Research Methods.

Ramanan Krishnamoorti

Ramanan Krishnamoorti is the Chief Energy Officer at the University of Houston. Prior to his current position, Krishnamoorti served as interim vice president for research and technology transfer for UH and the UH System. During his tenure at the university, he has served as chair of the UH Cullen College of Engineering’s chemical and biomolecular engineering department, associate dean of research for engineering, professor of chemical and biomolecular engineering with affiliated appointments as professor of petroleum engineering and professor of chemistry. Dr. Krishnamoorti obtained his bachelor’s degree in chemical engineering from the Indian Institute of Technology Madras and doctoral degree in chemical engineering from Princeton University in 1994.

Rhona Flin

Rhona Flin, Ph.D, FBPsS, FRSE, is Professor of Industrial Psychology, Aberdeen Business School, Robert Gordon University and Emeritus Professor of Applied Psychology, University of Aberdeen. Her work examines human performance in high risk work settings focusing on safety, organisational culture, and non-technical skills. She was a member of the Safety Advisory Committee for the Military Aviation Authority of the UK Ministry of Defence, is currently a Board member of Step Change in Safety and a Trustee of the Clinical Human Factors Group. Her books include Safety at the Sharp End: A Guide to Non-Technical Skills (2008, with O’Connor & Crichton) and Enhancing Surgical Performance: A Primer on Non-Technical Skills (2015, with Yule & Youngson).

Josie Long

Josie Long (Process Performance Improvement Consultants LLC) is a pipeline safety professional focused on safety management systems and safety culture enhancing America's liquid and gas transmission pipeline and gas distribution systems. Ms. Long has worked with the Interstate Natural Gas Association of America and a number of mid-stream companies on industry guidance and regulations that ensure the safe and reliable operations of our nation's natural gas and liquid pipeline systems. Her work spans all major trades and operators with the ultimate goal of advancing pipeline safety.

Omolola Adepoju

Omolola Adepoju, PhD, MPH, is a Clinical Associate Professor at the University of Houston College of Medicine. Dr. Adepoju is responsible for teaching the Physicians, Patients, Populations course and directs research activities at the Humana Integrated Health System Sciences Institute. Her work uses advanced analytics and robust methodologies in uncovering patterns that promote individual and population health outcomes to alleviate cost, quality, and access to care issues in underserved communities. She earned a Master of Public Health degree from Emory University and a Doctoral degree in Health Services Research from Texas A&M University Health Science Center.

Valentini Pappa

Valentini Pappa, Ph.D. serves as the Assistant Director for Education at Texas A&M University's Energy Institute and as an Adjunct Professor in the Department of Biological & Agricultural Engineering. Dr. Pappa conducts research on biomass production; energy and sustainability; energy and the water supply chain and on the environmental impacts of energy production.

Acknowledgements

We would like to thank our industry and community partners: the Petroleum Equipment & Services Association (PESA), the Independent Petroleum Association of America (IPAA), and Pink Petro for supporting our initiative and for actively engaging industry stakeholders as survey participants. Our collaborative effort benefitted tremendously from their thought leadership, and we have each of them to thank for their valuable inputs and time. The authors especially thank Dr. Stephen J. Spann, Founding Dean of the UH College of Medicine, for helpful discussions and advise.



The Petroleum Equipment & Services Association (PESA) is the unified voice for the energy industry's services and equipment organizations, advocating for and supporting this sector's achievements in job creation, technological innovation and economic stability. PESA is a trusted resource, advancing member priorities on key industry issues.



The Independent Petroleum Association of America is the national trade association representing the thousands of independent crude oil and natural gas explorers and producers across the United States of America. It also operates in close cooperation with 44 unaffiliated independent national, state and regional associations, which together represent thousands of royalty owners and the companies that provide services and supplies to the domestic industry.



Pink Petro™ is the leading resource and community creating an inclusive energy workforce for the future. The global community has a presence in 120 countries in nearly 1000 companies across energy in oil and natural gas, utilities and renewables. Our Global Corporate Council connects the energy industry to resources and best practices and is a neutral platform for dialogue and actions to address equality and inclusive culture.

TABLE OF CONTENTS

Executive Summary	5
Situation Overview: Return to Work in the United States	7
Current Study: Energy Workers’ Perspectives on the Return to Work	7
Method I: Energy Workforce COVID-19 Outlook – Industry Partners Associations	8
Method II: Survey Development Using Published Scales and SME-Derived Content	8
Method III: Study Participants – Workforce Experiences and Demographics	8
Results 1.1: Study Participants – COVID-19 Infection Status	9
Results 1.2: Study Participants – Pre-Existing Health Concerns	9
Results 2: What Are Employees’ Expectations for the Return to Work? What Mechanisms and Policies will Result in Employees’ Viewing the Return to the Office as Safe and Well-Planned	9
Results 3.1: What Individual Risk Factors Play a Role in Determining Employee Perspectives About the Return to Work? What Groups of Employees are Most Concerned About Returning to Work?	10
Results 3.2: What Policies Can Facilitate an Effective Transition and Increase Employees Feeling Comfortable with the Return to their Physical Workspace?	11
Results 4: What Health, and Especially Mental Health Challenges, have Energy Employees Experienced in the Last Month, What are Key Drivers and What Levers Should Employers Use to Mitigate their Impact on Workforce Well-Being and Productivity?	12
Results 5.1: What Policies and Practices can Energy Employers Implement to Facilitate the Health, Well-Being and Productivity of their Workforce	13
Results 5.2: What are the Implications of Lay-Offs on the Health and Well-Being of Energy Workers?	13
Conclusion	14
References	15

EXECUTIVE SUMMARY

Background and Methodology

Low oil prices and the onset of COVID-19 cases in the United States has depressed energy demand and has dramatically altered the employment situation for almost all energy workers: A majority of energy workers who usually work in office settings worked from home. At this point (early May 2020), companies are starting the return to a new, unprecedented normal. UH Energy has partnered with PESA, the Petroleum Equipment and Services Association; Pink Petro, which focuses on advancing women and environmental challenges facing the industry; IPAA, the Independent Petroleum Association of America and the Energy Management Institute at Texas A&M University – to gather data on expectations for the return to work from 448 energy workers from April 27, 2020 to May 5, 2020. 81% of those surveyed usually work from an office, 11% had been laid off or furloughed, and the rest of the respondents are either working in the field/offshore or in another capacity. Analyses reported here focus on employees who had been working from home since mid-March 2020, but energy workers in the two other groups were included in analyses around health and well-being.

Highlights

- Access to testing continues to be a concern for energy workers, and pre-existing conditions put almost a quarter of the surveyed energy workers at risk of complications from COVID-19. 6.6% of respondents had experienced COVID-19 symptoms but reported they were unable to obtain testing. Three respondents tested positive for COVID-19. Among energy workers, approximately 25% indicated they had been diagnosed with pre-existing conditions that put them at increased risk of complications from COVID-19.
- Over 70% of workers indicated they would prefer to continue to work from home if their office reopened in the next month. When asked separately about a furlough option, 20% were willing to take an unpaid furlough to avoid a physical return to their office space. Employees who had concerns about childcare reported a higher reluctance to return. Energy workers living in multi-generation households were more concerned about returning to work than others. Older workers and workers with long industry tenure were more likely to want to return to work than younger workers. In terms of workplace factors, if employees believed their supervisors would effectively work to mitigate COVID-19 infections (through enforcing physical distancing, sanitation rules) they were less reluctant to return.
- Employees who were confident that their employers would implement enhanced cleaning protocols and would provide PPE were less concerned about the return to work than employees who did not feel PPE would be provided or supplemental cleaning would be put in place. Employees generally expected a phased return to work but did not expect to see resources available to quarantine exposed employees or undertake effective electronic contact tracing protocols.
- Respondents reported continued good physical health with only a small number noting that their physical health was impaired in the last 30 days. In contrast, mental health issues were prevalent, with total health impairment over the last 30 days exceeding pre-COVID-19 national norms. Job insecurity and work-family interface issues predict mental health among energy workers during COVID-19.

Policy Implications

Workers' perspectives regarding the return to their physical workspaces vary widely, but the majority of workers are hesitant to return and would prefer the opportunity to continue working from home for at least the near-term future. Flexible policies accommodating worker perspectives are likely to be most effective in enhancing employee productivity and well-being. For workers with children, concerns about childcare need to be addressed to avoid alienating parents, particularly women energy workers. First-line supervisors' strategies in mitigating workplace infections will play a critical role in addressing employee concerns about the return to work at the office. Employees living in multi-generation households may more urgently need dispensation from returning to their physical work environment. Interestingly, employees with pre-existing conditions were not more likely to want to continue working from home than others.

Securing access to PPE (masks, gloves, sanitizer) and providing PPE to employees, as well as implementing and communicating the presence of enhanced workspace cleaning protocols are likely to be effective organizational strategies in mitigating return concerns. If contact tracing is required and implemented wherein health and temperature scans are recorded, organizations should be prepared to carefully explain and communicate the rationale for their implementation and the efforts to ensure privacy.

Normalization of discussion of mental health issues needs to be prioritized given the prevalence of mental health issues among energy workers during the pandemic. HR departments and EAP programs may want to consider integrating first line supervisors in efforts to identify employees who may need mental health support to prevent mental health issues from affecting long-term health and productivity. Addressing work-family conflict and job insecurity through flexible work arrangements and clear communication and crisis management can function as another source of support for employees experiencing mental health issues. Further attention is needed with regards to the mental health needs of laid off energy workers, who in terms of mental health have suffered the most during the COVID-19 pandemic. The energy industry is likely to undergo several more rounds of job cuts over the next few months and therefore employers should consider addressing mental health issues as part of the separation and reductions package.

Contact

Ramanan Krishnamoorti, Ph.D.

Chief Energy Officer

ramanan@uh.edu

+1 (713) 743 4307

Christiane Spitzmueller, Ph.D.

Center for Applied Psychological Research

cspitzmu@central.uh.edu

+1 (281) 610 9099

The Energy Workforce: Perspectives on the Return to Work during COVID-19

Situation Overview: Return to Work in the United States

During the first week of May 2020, in spite of encouraging signs of “flattening the curve”, the risk of community-based COVID-19 infections has not been eradicated as yet. Still, energy workers in the United States are being informed that their state is either partially reopening, reopening soon or is continuing their shutdown and restrictions.

For energy employers and employees alike, the return to work poses significant challenges, with the continued risk of infection from COVID-19 being a significant cause for concern. Industries that continued to operate throughout the pandemic fared well in some cases but were linked to outbreak clusters in other cases.¹ The return to work brings a lot of unknowns for both employers and employees, highlighting the need for systematic data collection around some key return to work issues.

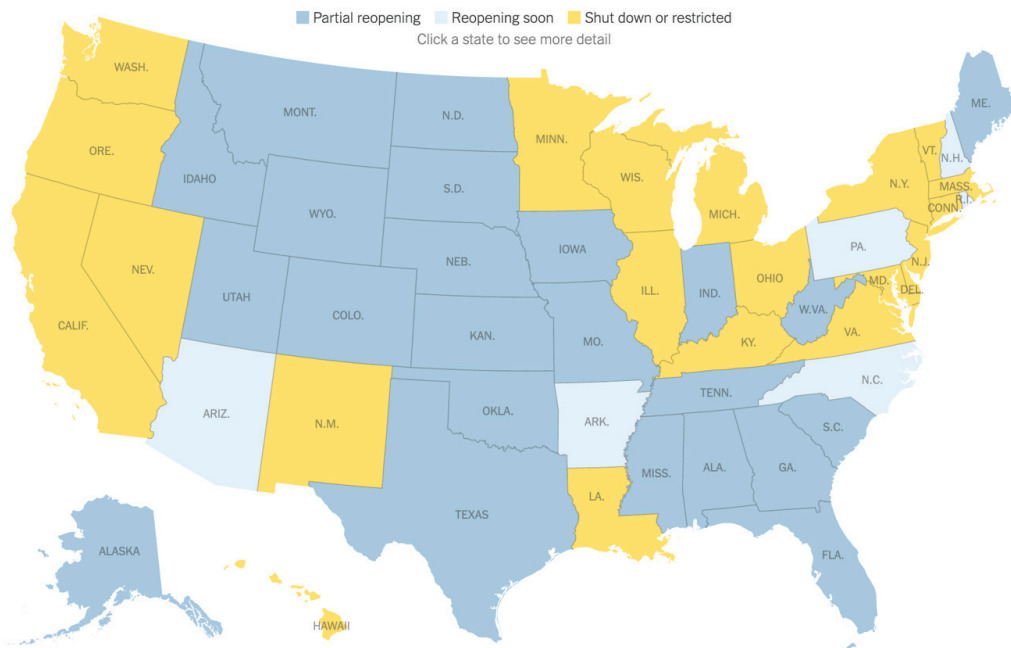
Although medical² and public health³ research on COVID-19 are progressing rapidly, rigorous human resource and social science research are needed to inform the return to work⁴. This study contributes to closing that research gap by examining energy workers’ perspectives on the return to work, as well as the consequences of the pandemic on their health and well-being. The results of the study inform company policies to improve the return to work experience for employees and employers.

Current Study: Energy Workers’ Perspectives on the Return to Work

Human resource, safety and management professionals in the energy industry are in a position where they have to make decisions about the return to work without necessarily having access to data on their employees’ perspectives. Hence, UH Energy partnered with the University of Houston’s College of Medicine’s public health and epidemiology experts to understand employee concerns, hopes and expectations for the return to work.

1. What are employees’ expectations for the return to work? What mechanisms and policies will result in employees’ viewing the return to the office as safe and well-planned?
2. What individual risk factors play a role in determining employee perspectives about the return to work? What groups of employees are most concerned about returning to work? What are drivers of their concerns and what policies can facilitate their effective transition and return?
3. What health, and especially mental health challenges, have energy employees experienced in the last month? What are key drivers and what levers should employers use to mitigate the impact of health challenges on workforce well-being and productivity?
4. What policies and practices can energy employers implement to facilitate the health, well-being and productivity of their workforce?

Figure 1: New York Times Overview of Reopening by State, May 5, 2020



Source: New York Times.

Method I: Energy Workforce COVID 19 Outlook – Industry Partner Associations

In order to provide a current perspective and gather timely data during the first week when companies started re-opening offices, we collected data from April 27 to May 5 from 448 energy workers. UH Energy constitutes an umbrella organization within the University of Houston dedicated to generating independent, cutting edge, third party knowledge to inform policies, research, and innovation in the energy industry. Altogether, in partnership with four industry and academic partners, we gathered data from a broad cross section of energy workers. The partners for the current study were (1) IPAA, the Independent Petroleum Association of America; (2) PESA, the Petroleum Equipment and Services Association, and (3) Pink Petro, an energy industry association focused on advancing women and environmental challenges facing the industry and (4) Texas A&M University’s Energy Management Institute. These organizations contacted their members with invitations to participate in our study. We further contacted respondents who had participated in our first, earlier study at the end of March.⁵ Responses were anonymous. Similar to the first study, we again obtained approval for the data collection from the University of Houston’s Institutional Review Board, an ethics board governed by federal regulations for protecting human participants in research. Thus, data collected for this study cannot be accessed through Freedom of Information Act requests, protecting individual level data from being released at any point in time.

Method II: Survey Development Using Published Scales and SME-Derived Content

UH Energy developed a Qualtrics-based, web-based survey tool that was launched April 30 and closed May 5. Completion time for the survey ranged from seven to twelve minutes. We used raffle incentives during the first three days of data collection, consistent with survey research standards to attain high survey response rates^{4,5} and data quality, with comparable raffles being used for employee surveys across industries⁶⁻⁸. During the last day of data collection, we offered participants individual \$10 Amazon.com cards to ensure broad representation of relevant demographics. In collaboration with faculty members in medicine and the Dean of the newly established University of Houston College of Medicine, we created a preliminary set of questions for pilot testing. Survey questions were sourced from validated scales published in peer-reviewed journals, prior CDC studies and through discussions with subject matter experts, including health, safety and environment (HSE) experts and industry associations. Overall, the survey captured employees’ perspectives on the return to work, safety culture items adopted to fit the COVID-19 context, items measuring work-family interface challenges and job insecurity, and measures tapping employee health, well-being and pre-existing conditions. Where validated scales were not available, we developed item content through work with HSE experts. We pilot-

tested the survey to ensure items were at an 8th grade reading level and survey length was appropriate.

Method III: Study Participants – Work Experiences and Demographics

Among the study participants who were currently employed (n=336), the majority worked in oil and gas (66.1%), and 8.3% in power and utilities, with the remainder working across other subsectors of the energy industry (including alternatives, water, and geothermal). Sample job titles are listed in Table 1. On average, participants had 14 years of work experience in the energy industry (range: 1 to 48 years). The largest proportion of the surveyed energy industry employees worked in technical or engineering roles. On average, participants were 42 years old (sd=14 years), and 58.7% of the sample were female. We again oversampled women and energy workers from racial minorities in order to be able to examine specific challenges facing the segments of the energy industry that are expected to grow in the future. Respondent ethnicity is displayed in Figure 2.

Figure 2: Sample Participant Ethnicity

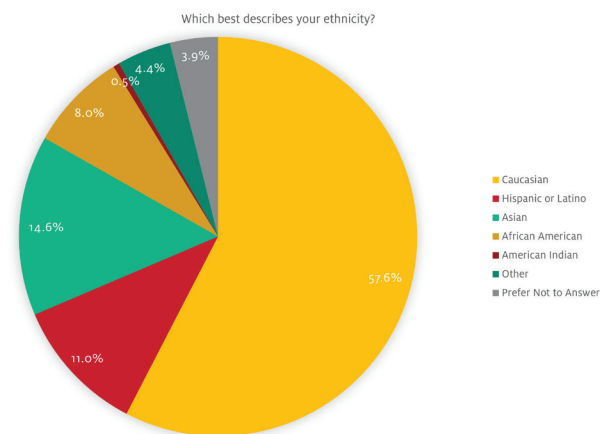


Table 1: Sample Job Titles for Survey Participants

Electrical Engineer	Technical Director
Energy Market Analyst	Quality Engineer
Reservoir Engineer	Operations Manager
Senior Safety Specialist	Mechanical Engineer
Senior Service Delivery Coordinator	Oil and gas chemicals sales
Geologist	Marine and energy broker

Results 1.1: Study Participants – COVID-19 Infection Status

Finding: 6.6% of surveyed energy workers reported COVID-19 consistent symptoms, but were unable to obtain testing. Pre-existing conditions linked to risks of COVID-19 complications were present in about 25% of workers.

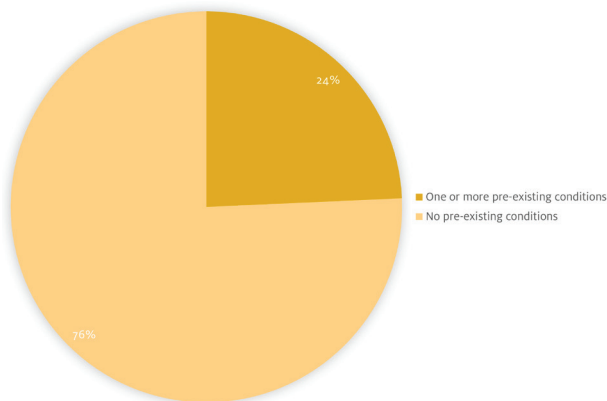
Implications & Recommendation: As workers return to work, development of options to test symptomatic workers within their work context may be needed since other testing options continue to fall short of reaching all who need testing.

Given approximately 5 weeks had passed since our earlier data collection⁵, we examined whether access to testing had become easier for energy workers, and whether indeed all who needed testing had indeed received testing. In the previous survey (conducted late March/early April, 2020) 5.4% had reported COVID-19 symptoms, but were unable to get testing. During this wave of data collection, this number increased slightly to 6.6%. Three of the respondents had experienced a COVID-19 infection, and 1.8% of respondents had experienced symptoms but tested negative. The data support the notion that testing access is still challenging for energy workers.

Results 1.2: Study Participants – Pre-existing health conditions

Energy workers provided information about pre-existing health conditions that can put them at heightened risk for COVID-19 complications. Approximately one quarter of employees reported they had a pre-existing condition that could be linked to complications from COVID-19. In other words, approximately 25% may experience health-based concerns that may influence their attitudes towards return to work.

Figure 3: Pre-Existing Conditions (in %)



Results 2: What are employees' expectations for the return to work? What mechanisms and policies will result in employees' viewing the return to the office as safe and well-planned?

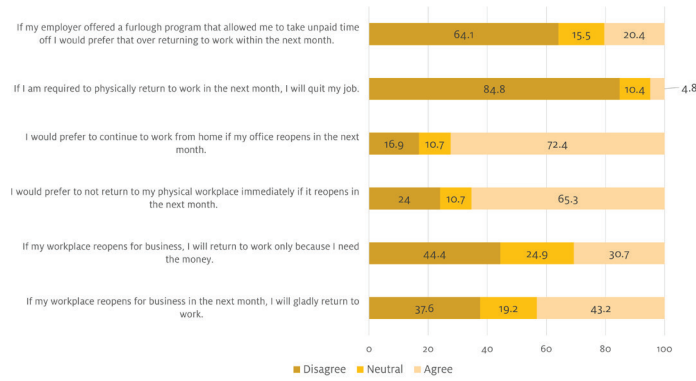
Finding: Over 70% of workers indicated they would prefer to continue to work from home if their office reopened in the next month. 20% of these workers went even further, and expressed that they were willing to take an unpaid furlough to avoid a physical return to their office space. Concerns about the unavailability of childcare and supervisors' potential inability to effectively reduce the likelihood of COVID-19 transmission in their immediate workspace were linked to reluctance to return. Energy workers living in multi-generation households were more concerned about returning to work than others.

Implications & Recommendation: Workers' perspectives regarding the return to their physical workspaces vary widely, but the majority of workers are hesitant to return and would prefer the opportunity to continue working from home for at least the near-term future. Flexible policies accommodating worker perspectives are likely to be most effective in enhancing employee productivity and well-being. For workers with children, concerns about childcare need to be addressed. Such measures are particularly important for women energy workers. First-line supervisors play a critical role in mitigating employee concerns about the return to work at the office. Employees living in multi-generation households may more urgently need dispensation from returning to their physical work environment.

We examined the perspectives of energy workers who had been working from home since mid-March to gain an understanding the readiness of energy workers to return to their company office or work spaces.

Respondents indicated their agreement/disagreement to six items that assessed their perspectives on the return to the office (Figure 3). When asked about their preferences, more than 70% of workers expressed a preference for continuing to work from home, making them potential reluctant returners. Over 20% indicated they would prefer an unpaid furlough over a return to their physical workspace in the next month, and close to 5% indicated they would consider leaving their jobs if they had to return to their physical workspaces.

Figure 4: Return to Physical Workspace Perspectives



Research on working from home and flex-space arrangements is abundant. In fact, a 2007 meta-analysis identified 46 studies that had examined the outcomes of remote work.⁶ Overall, the results are encouraging and support the notion that working from home is likely to have more beneficial than detrimental outcomes. Remote work was linked to improved worker autonomy, lower work-family conflict. Interestingly, the quality of workplace relations were not negatively affected by remote work. The meta-analysis further found small but statistically significant effects on job satisfaction and performance. In sum, research evidence supports that negative outcomes of remote work are less prevalent than commonly believed, and that companies that follow their employees' preferences may reap small but significant benefits.

Results 3.1: What individual risk factors play a role in determining employee perspectives about the return to work? What groups of employees are most concerned about returning to work?

We conducted correlation and multiple regression analyses, and examined safety culture, work-family interface issues, and health issues as predictors of employees' hesitation to return to work. Findings suggest that the strongest factors that determine employees' concerns about the return to their physical workplace are:

- *Childcare concerns* – employees who were worried about not having adequate childcare were significantly more concerned about returning to the office (regression-based).
- *COVID-19 safety culture as it pertains to direct supervisor* - Employees who felt their supervisor would strongly support and enforce protocols intended to mitigate the likelihood of COVID-19 transmission (regression-based) were more willing to return.
- *Pre-existing health conditions* that are linked, according to public health and medical research, to higher risks of developing COVID-19 conditions were **not** linked with reluctance to physically return to the workspace (regression-based).

- *Age and tenure in the industry* – employees who had worked in the industry for longer reported lower reluctance to return to their physical workspace (correlation-based).
- *Concerns about the financial impact of a COVID-19 infection* – employees with significant concerns about the possible costs of a COVID-19 hospitalization were more reluctant to return to work at the office.
- *Living in a multigeneration household* – employees who lived with children and older family members were significantly more hesitant to return to work than those who had different living arrangements.

Figure 5: Care Concerns and Reluctance to Return to Office-based Work

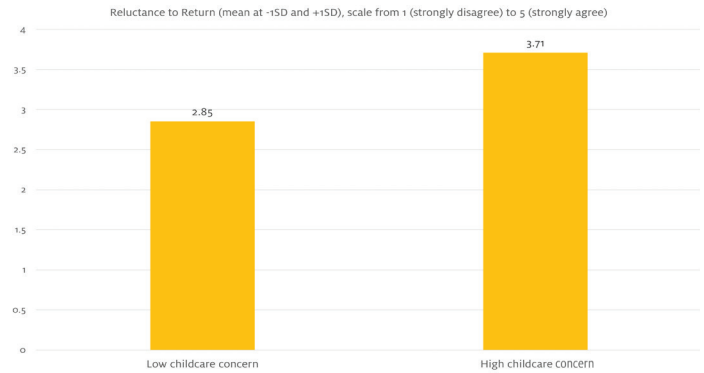


Figure 6: Concern about Financial Impact of COVID-19 Infection

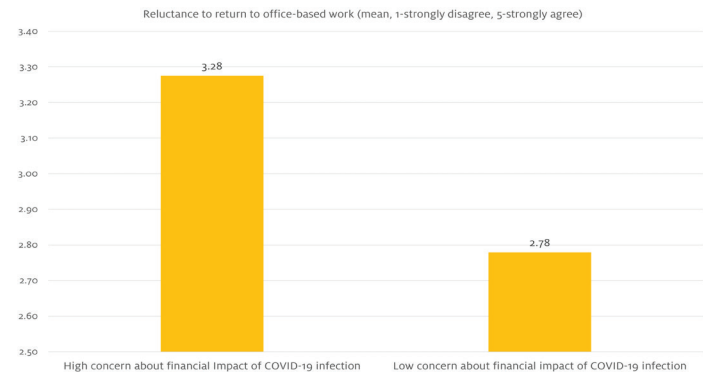
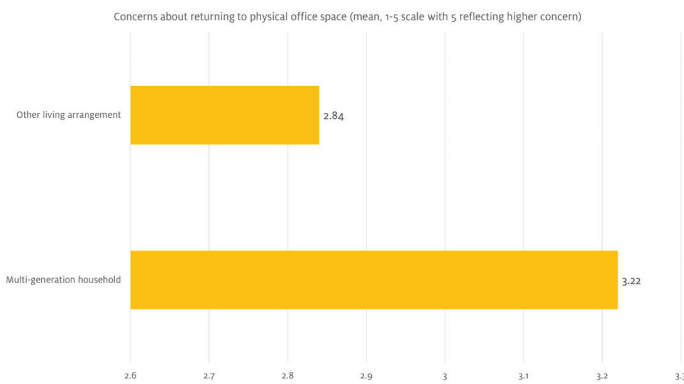


Figure 7: Return to Office - Employees Living in Multigeneration households versus others.



Results 3.2: What policies can facilitate an effective transition and increase employees feeling comfortable with the return to their physical workspace?

Finding: Employees who were confident that their employers would implement enhanced cleaning protocols and would provide PPE were less concerned about the return to work than employees who did not feel PPE would be provided or supplemental cleaning would be put in place. Employees generally expected a phased return to work but did not expect to see resources to quarantine exposed employees or electronic contact tracing systems.

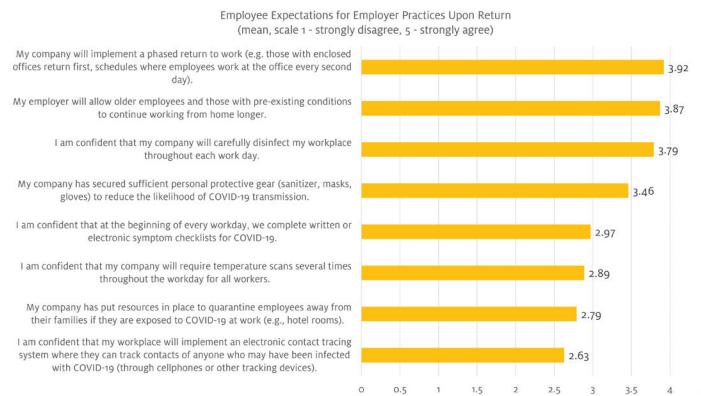
Implications & Recommendation: Securing access to PPE (masks, gloves, sanitizer) and providing PPE to employees, as well as implementing and communicating the presence of enhanced workspace cleaning protocols are likely to be effective organizational strategies in mitigating return concerns. If contact tracing including health and temperature scans, is implemented, organizations should be prepared to carefully explain and communicate the rationale for their implementation.

We analyzed whether the anticipated use of temperature scans, daily COVID-19 symptom checklists, electronic contact tracing systems, PPE provision and enhanced cleaning protocols were linked to reduced reluctance to return to physical workspaces. Interestingly, employees’ reluctance was only linked to cleaning protocols and PPE – their anticipation of health checks, contact tracing systems and temperature scans were not related to their reluctance to return to their physical workspace. In contrast, careful disinfection protocols implemented throughout the day and the provision of sufficient PPE was important to employees when they contemplated a return to work.

In terms of expectations for the return to work, there were practices a large number of respondents expected for their return to work, while other practices were not viewed as realistic or something employers would put in place. Respondents generally expected a phased return to work, with those working in offices returning first, or alternating day schedules. Many also expected policies allowing employees with pre-existing conditions to return to the office later than employees with no increased risk of COVID-19 complications.

On average, employees did not expect to see contact tracing systems, quarantine resources, temperature scans or even daily health symptom checkers (Figure 8).

Figure 8: Expected Organizational Practices for the Return to Work



Results 4: What health, and especially mental health challenges, have energy employees experienced in the last month, what are key drivers and what levers should employers use to mitigate their impact on workforce well-being and productivity?

Finding: Respondents reported continued good physical health with only a small number noting that their physical health was impaired in the last 30 days. In contrast, mental health issues were prevalent, with total health impairment over the last 30 days exceeding pre-COVID-19 national norms. Job insecurity and work-family interface issues predict mental health issues among energy workers during COVID-19.

Implications & Recommendation: Normalization of discussion of mental health issues needs to be prioritized. HR departments and Employee Assistance Programs (EAP) may want to consider integrating first line supervisors in efforts to identify employees who may need mental health support to prevent mental health issues from affecting long-term health and productivity.

Physical and mental health are critical components of employee well-being, and precursors of employee productivity and performance.⁷ Hence, we measured both physical and mental health through the CDC’s daily health measures. The daily health measures are comprised of one item that asks participants about the number of days during the last 30 days that they were impaired by physical health issues. It further asks about the number of days when they experienced mental health issues, such as stress. Research on the CDC measures suggests combining the two into overall health measures, with normative data being available. As can be seen below (Figure 9), the average unhealthy days per month for Texas in 2003 norms were between 5 and 5.9. In our data, we see elevated levels of ill health, with respondents on average reporting a total of 7.8 total days per month. Notably, the majority of days of ill health reported by respondents were related to mental health issues. Energy workers only reported an average of 1.90 days of physical ill health, but indicated they had experienced an average of 5.90 days of mental ill health. Overall, 28% of energy workers (across subgroups of our sample) experienced six or more days of mental ill health in the last 30 days (Figure 10).

Mental health is difficult to address in workplace settings, and it is frequently left up to employees to contact EAP programs. Given the prevalence of mental health issues in the current study and the prospective impact of COVID-19 on mental health⁸, we recommend mental health issues be considered a systematic issue

energy companies need to address given more than a quarter of employees have been affected for six or more days during the last month. We recommend first-line supervisors be equipped with training resources to ensure they are able to discuss mental health with their direct reports, along with tools to ensure they can make appropriate referrals to EAP resources where needed.

Based on prior meta-analytic research, leadership can critically contribute to mental health issues, which can translate into reduced performance outcomes.⁷ Hence, positive changes in leadership and supervisor attention to mental health issues are likely to result in positive outcomes.

Figure 9: Norms for days with combined mental and physical health issues

Mean number of unhealthy days among adults by State—United States, Behavioral Risk Factor Surveillance System 2003

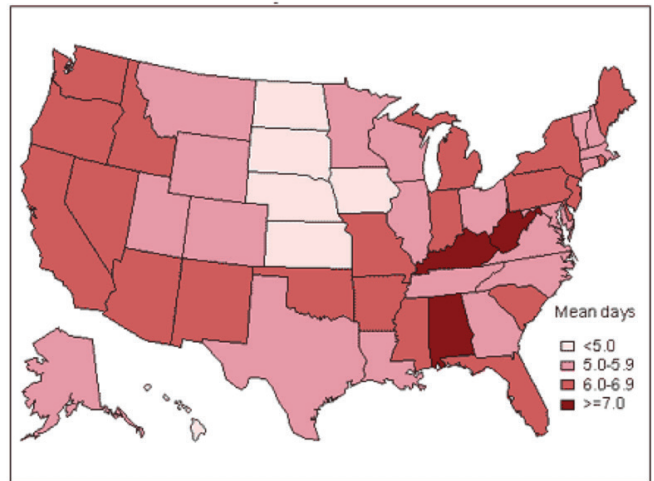
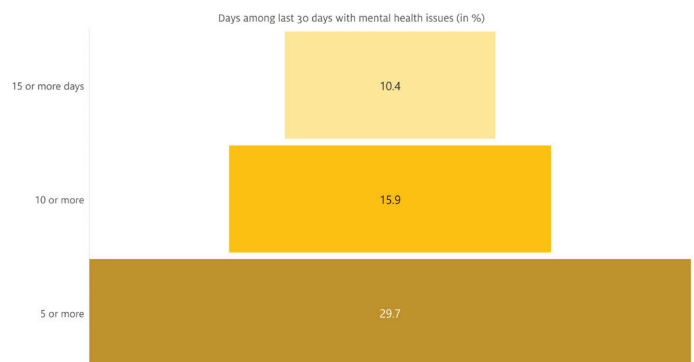


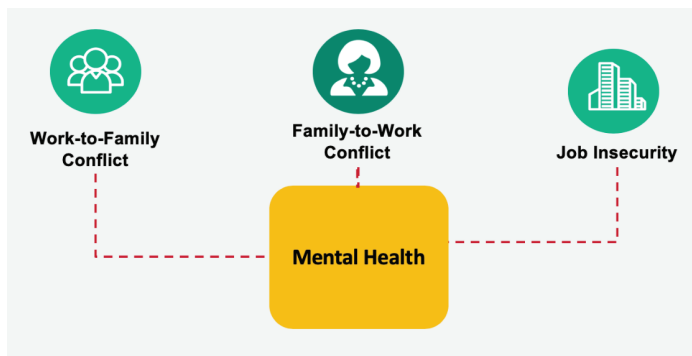
Figure 10: Days with mental health issues energy workers experienced within the last 30 days



Results 5.1: What policies and practices can energy employers implement to facilitate the health, well-being and productivity of their workforce?

We conducted correlational and regression analyses to determine factors linked to mental health during the COVID-19 pandemic. When analyzing predictors of mental health issues in the entire sample, work-family interface issues and job insecurity were the strongest correlates of mental health issues among energy workers. Work-to-family conflict had the strongest overall correlation with days of mental ill health, followed by family-to-work conflict and job insecurity. Job insecurity is strongly linked to transparent organizational communication regarding the crisis and business continuity during the crisis, an issue that can be proactively managed and addressed. Work-family interface issues are likely to be affected by supervisors' ability to provide employees with the needed flexibility to address their work and personal demands.

Figure 11: Drivers of days with mental health issues among energy workers during COVID-19



Mental health issues are some of the highest cost challenges facing organizations from a human resource perspective. Even though employers have invested heavily in employee assistance programs (EAPs) over the last decades, EAPs are oftentimes underused and many employees do not feel comfortable accessing them when facing mental health issues or a mental health crisis.⁹

However, organizations have options at their disposal that can assist employees facing mental health issues. For instance, a recent study on worker mental health issues showed that low-cost trainings for supervisors on addressing mental health issues and linking employees with EAPs showed promise: Employees whose supervisors had attended the mental health training were more likely to use mental health resources. Further, supervisors changed their actions vis a vis mentally ill employees significantly.⁹ In sum, current times may warrant a stronger organizational focus on mental health issues than previously seen, and short supervisor training programs may contribute.

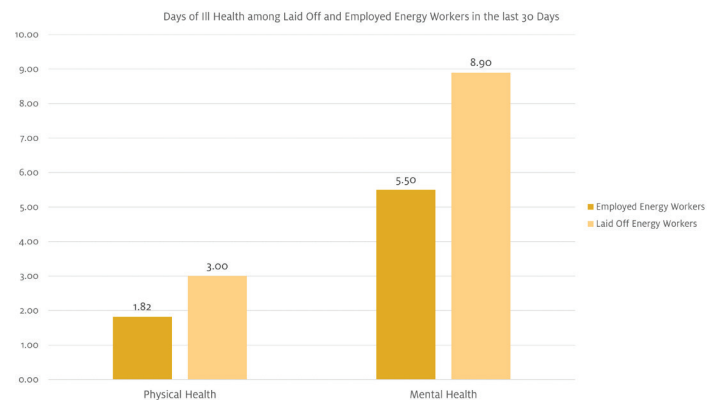
Results 5.2: What policies and practices can energy employers implement to facilitate the health, well-being and productivity of their workforce?

We compared office workers who had been working from home to workers who had been laid off since the start of the COVID-19 pandemic to determine whether there were mental and physical health differences based on job loss. Note that research on job loss in other industries suggests a strong link between job loss and deleterious health outcomes. For example, prior research on job loss demonstrates an increased mortality risk in the 12-month period following job loss.¹⁰

Results show a strong increase in days of ill health among workers who recently lost their jobs, but the effects were entirely in the mental and not in the physical health domain. Note that this subsample was relatively small (n=22), but that the strength of the observed effects was substantial and due to the magnitude of the effects statistically significant.

Two differences are worth highlighting: First, laid off workers experienced more problematic mental health than physical health. With regards to physical health, differences between those who were laid off and those currently employed were not significant. Second, the overall number of days with ill health was substantially higher for laid off workers.

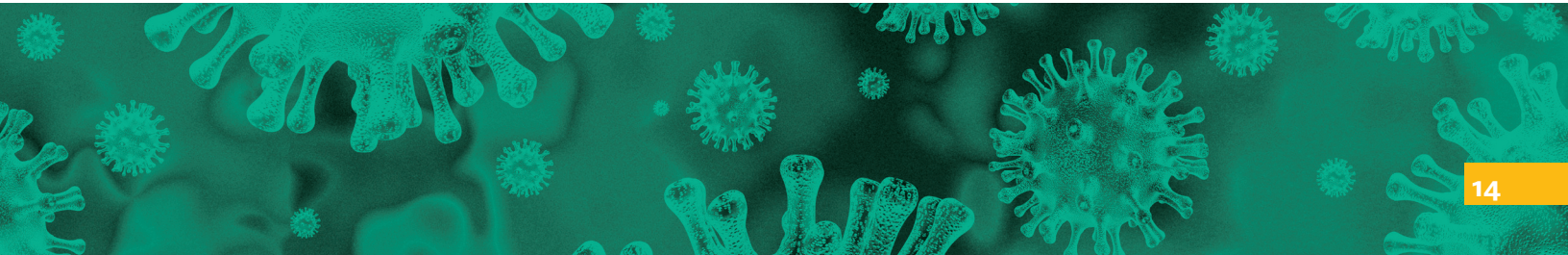
Figure 12: Health among employed and laid off energy workers



In light of these findings, we recommend professional associations in the industry, such as the Society for Petroleum Engineering (SPE), continue their outreach to members who lost jobs through programs such as SPE's "Members in Transition" program. These programs could potentially benefit from supplementing networking and job search resources with information on how laid off workers can deal with mental health issues they are experiencing during their transitions to new jobs. Moreover, the energy industry is likely to undergo several more rounds of job cuts over the next few months and therefore employers should consider addressing mental health issues as part of the separation and reductions package.

Conclusion

This study is the product of collaboration between academia and industry associations. Through the use of survey data collected during the transitional phase of reducing national pandemic control measures, we present data-driven recommendations for the energy workforce' return to work. Ultimately, we hope this white paper will allow industry decision makers to design a return to work that maximizes employee health and productivity while minimizing the risk for COVID-19 transmission. We invite dialogue with companies, regulators, and the public and encourage stakeholders to continue to use evidence-based practices in defining solutions for the energy workforce during the COVID-19 pandemic.



REFERENCES

- 1 – Coronavirus' business impact: Evolving perspective | McKinsey. <https://www.mckinsey.com/business-functions/risk/our-insights/covid-19-implications-for-business>.
- 2 – Berenbaum, M. R. PNAS and the pandemic. (National Acad Sciences, 2020).
- 3 – Wells, C. R. et al. Impact of international travel and border control measures on the global spread of the novel 2019 coronavirus outbreak. *Proc Natl Acad Sci USA* 117, 7504–7509 (2020).
- 4 – Van Bavel, J. J. et al. Using social and behavioural science to support COVID-19 pandemic response. *Nature Human Behaviour* 1–12 (2020).
- 5 – White Paper Series - University of Houston. <https://uh.edu/uh-energy/research/white-papers/>.
- 6 – Gajendran, R. S. & Harrison, D. A. The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology* 92, 1524–1541 (2007).
- 7 – Montano, D., Reeske, A., Franke, F. & Hüffmeier, J. Leadership, followers' mental health and job performance in organizations: A comprehensive meta-analysis from an occupational health perspective. *Journal of Organizational Behavior* 38, 327–350 (2017).
- 8 – Holmes, E. A. et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *The Lancet Psychiatry* (2020).
- 9 – Dimoff, J. K. & Kelloway, E. K. With a little help from my boss: The impact of workplace mental health training on leader behaviors and employee resource utilization. *Journal of occupational health psychology* 24, 4 (2019).
- 10 – Strully, K. W. Job loss and health in the U.S. labor market. *Demography* 46, 221–246 (2009). <stream/1496312627865/46fec8302a3871b190fed35fa8c09e449f57bf73bdc35e0c8a34c8c5c53c5986/shell-h2-study-new.pdf> (accessed January 2019).

About UH Energy

UH ENERGY

UH Energy is an umbrella for efforts across the University of Houston to position the university as a strategic partner to the energy industry by producing trained workforce, strategic and technical leadership, research and development for needed innovations and new technologies.

That's why UH is the Energy University.

Editorial Board

Ramanan Krishnamoorti
Chief Energy Officer,
University of Houston

Ed Hirs
Lecturer, Department of Economics,
BDO Fellow for Natural Resources

Greg Bean
Executive Director, Gutierrez Energy
Management Institute

Victor B. Flatt
Professor, Dwight Olds Chair in Law,
Faculty Director of the Environment,
Energy, and Natural Resources Center

Pablo M. Pinto
Associate Professor,
Department of Political Science

Contributors

CONTRIBUTING EDITOR
Jeannie Kever

PROGRAM DIRECTOR
Lauren Kibler

WEB DEVELOPER
Kyle Kinder