

Notes of the Expert Panel Meeting Representing Industry February 22, 2018

National Assessment Governing Board Ad Hoc Committee on Measures of Postsecondary Preparedness

As part of meeting the charge of the Ad Hoc Committee on Measures of Postsecondary Preparedness, HumRRO organized and facilitated a meeting with industry experts. The purpose of this meeting was to get input from leaders and experts in industry about (a) the jobs that will exist in 2030, (b) the skills that these jobs will require, and (c) the measures/indicators that would be needed to provide a status of elementary and secondary students with respect to these skills.

We were fortunate to assemble an exceptional panel of experts and leaders. The panel members included **Ms. Paula Collins**, Texas Instruments, **Mr. Marcelino Ford-Livene**, Intel Corporation, **Dr. Scott Heimlich**, Amgen Foundation, **Dr. Chauncy Lennon**, JPMorgan Chase, and **Mr. Reginald McGregor**, Rolls-Royce Corporation.

The meeting was held on February 22, 2018 in Alexandria, Virginia. An overview of the National Assessment Governing Board and the charge of the Ad Hoc Committee on Measures of Postsecondary Preparedness, along with the agenda and logistical information for the meeting were sent to the panelists in advance.

Thanos Patelis (HumRRO) opened the meeting and after quickly informing the group of some logistics, Terry Mazany provided an overview and led the attendees through introductions. Then, Thanos Patelis facilitated the meeting around the three areas of inquiry involving (a) the jobs of 2030, (b) the skills that they will require, and (c) the measures/indicators that will be important to provide. Finally, Terry Mazany offered some concluding comments. The agenda and the list of all attendees is in Appendix A.

The purpose of this document is to provide information on the themes and comments made by the panelists. The information in this report is meant to provide insight into the rich conversation and comments provided by the expert panelists.

The Future of the Workplace and Work

- The titles of the jobs in 2030 cannot be predicted. However, the jobs of the future will require many skills and will be driven by globalization, artificial intelligence, and “big data”.
 - Globalization will change the workplace, from the types of jobs available (i.e., global competition for jobs) to working on cross-cultural teams.
 - Workplace integration will increase (e.g., working across disciplines instead of in silos by discipline).
 - The pace of automation and existence of the internet enable rapid access to information which will affect what employees do on the job and their job descriptions. The use of the internet and automation will only increase.
 - Employers should embrace new methods of communication, driven by the next generation. For example, hiring managers may not be familiar or may be uncomfortable with the latest communication modes of those applying for jobs. Rather than allowing that to impact negatively on job applicants, employers should

- acknowledge the differences as innovation or trends to monitor. Job applicants may also need to be attuned to this dynamic.
- Technology will be at the forefront. For example, JP Morgan Chase is a “tech company that also loans money”; they do not consider themselves primarily a financial institution.
 - Complicated tasks can be handled by automation (which will replace some jobs). Employees of the future will need to work with automated equipment and employees will be needed to design and service the automation.
 - Complex tasks will take human thought (and these types of jobs will remain and additional ones will be added in the future).
- There is and likely there will continue to be a duality in the job descriptions of the future: academic skills and college degree required versus high school diploma and training and apprenticeship experience required. Panelists noted they come from the academic skills track and although they acknowledge the diploma-training track, they suggested consulting with experts in that area for a more detailed picture of what the future holds for those not following the 4-year college track.
 - Need to hire the person with the right skill set, not the person with the most qualifications (who may be overqualified and a poor fit for the work). This is sometimes a tendency when college-graduate hiring managers put more emphasis on college degree, the background they come from and perspective they bring to their job, than is warranted by the demands of the job being filled.
 - Most jobs that do not require a 4-year college degree, will require additional training, such as a 2-year college degree, technical training, or post-secondary education and/or training leading to certification.
 - Employer provides job skills (e.g., specific knowledge and procedures), while employee brings workplace competencies to the job (see competencies in the skills needed in the future). More job-related training will be provided by the employer, such as in-house mini-MBA programs provided by large corporations.
 - Continuous learning will be required to keep up with change. The employer will support or provide the training or education; the employee must participate to keep pace.
 - Panelists indicated the need for initiatives to empower students, especially those who are “at-risk” and do not have role models, with an understanding of the labor market and expose them to employment options. Suggestions for empowering students so they are ready for post-secondary steps to meet their goals:
 - Help them define pathways to jobs.
 - Assist in setting goals; define an individual’s “*north star*”.
 - Employer/employee relationships will change.
 - More contract work will emerge, which allows workers to dictate own schedule and/or workplace.
 - Office space will be different.
 - For example, if employees come to the office, they will use a laptop and choose a work space area plugging into the network. The exact location may vary and will be more fluid than today.

Skills Needed in the Future

- Panelists described the need for employees to be able to apply skills, which defines competencies. Having a skill is not sufficient. Must know how to apply the skill to real world problems.
- The skills that were highlighted were as follows:
 - Ability to collaborate with people and machines, as the workplace incorporates more technology and automation as well as more collaboration.
 - Ability to interact with technology in jobs at all levels. Career Technical Education (CTE) can provide skills and certification for certain jobs.
 - Data skills are in demand - *data is the new oil*.
 - Less focus on job-specific content skills and more on workplace competencies:
 - Critical thinking, effective communication, collaboration, adaptability, problem solving, creativity, integrity, community/workplace citizenship, agility, learning disposition, persistence, attitude, interest.
 - Able to handle failure – *know what to do when the button fails*.
- Need power skills and experience, especially for at-risk students, to navigate the job market and succeed in entry-level positions – resume writing, oral communication, working on teams, basic reading/writing and mathematics ability.

Measures of Skills in the Future

- Consider measuring post-secondary readiness skills in grade 8.
- Maintain traditional knowledge measures (i.e., reading, mathematics).
 - Some went as far as to say that these measures of academic skills should not be removed and any other measures should be added.
- Design-build skills can be measured by persistence. Do you persist until object is built?
- Measure *application* of skills at grade 12. Can students demonstrate their skills (versus showing their knowledge of skills)?
- Add new measures tapping workplace requirements. Be creative in measuring skills (e.g., use certificates or credentials). Leverage CTE curriculum and measures.
 - In the interview process for candidates, hiring managers will give a problem to solve. Therefore, such metrics that demonstrate process and results of solving problems would be helpful.
- Need measures on collaboration, empowerment, and creativity.
- Tie relevancy of measures to industry and align with education. Do this regionally so that measures of preparedness are informative to:
 - students (do they have the skills needed for jobs in their community?),
 - industry (do local job applicants have the skills needed for jobs being offered in their community?),
 - educators (are they preparing students for post-secondary opportunities in their community?), and
 - policy makers (does the local workforce have the skills that industry in their community require?).
- While this may not be the Governing Board's responsibility, students should be given the ability to develop digital portfolios, including coursework and experiential activities, in school to demonstrate their skills and achievements. This would be helpful to employers.

- The measures must keep evolving as the type of work and required skills change over time.
- One interesting observation was that the panelists described job training interventions for at-risk youth with measures of program success embedded as artifacts of the experience. Did the participant build something? While the final product might not have been their initial design, the focus was on the creative process and the ability to troubleshoot problems as well as to persist in developing the final product.

Appendix A: Meeting Agenda and Attendees

Expert Panel Meeting National Assessment Governing Board Ad Hoc Committee on Measures of Postsecondary Preparedness

February 22, 2018 | Agenda

11:00 to 11:05 AM

Start Meeting

Thanos Patelis, Facilitator, HumRRO

11:05 to 11:15 AM

Welcome and Introductions

Terry Mazany, National Assessment Governing Board Member
Chair, Ad Hoc Committee on Measures of Postsecondary

Preparedness

11:15 AM to 12:00 PM

Work of the Future

Thanos Patelis, Facilitator, HumRRO

Guiding Questions:

- *What do you see as the type of jobs graduating high school seniors will have in 2030?*
- *Compared to jobs now, what kind of trends do you see emerging for jobs in 2030?*
- *Do you foresee any differences of jobs by industry or do you expect similar trends to occur for all jobs?*
- *What do you see as expectations of employers for these students?*
- *How do you envision the hiring process to be?*
- *What role will postsecondary institutions play in training and preparing students for these jobs?*

12:00 to 12:15 PM

Break to get lunch

12:15 to 1:00 PM

Skills for the Work of the Future

Thanos Patelis, Facilitator, HumRRO

Guiding Questions:

- *What types of skills will graduating high school seniors need to have in 2030 in order to get the jobs in 2030?*
- *What would you consider pre-requisite skills vs. skills that can be acquired on the job?*
- *What role will postsecondary institutions play in training these skills?*
- *What would a hiring manager in 2030 look for in prospective hires?*

1:00 to 1:45 PM

Measures of these Skills Associated with Work of the Future

Thanos Patelis, Facilitator, HumRRO

Guiding Questions:

- *What measures do you see being used to represent these skills?*
- *What metrics would provide helpful information in the aggregate about the skills of graduating high school seniors?*

1:45 to 2:00 PM

Final thoughts and concluding remarks

Terry Mazany, National Assessment Governing Board Member
Chair, Ad Hoc Committee on Measures of Postsecondary
Preparedness

Attendees

Expert Panelists:

- Paula Collins, Texas Instruments
- Marcelino Ford-Livene, Intel Corporation
- Scott Heimlich, Amgen Foundation
- Chauncy Lennon, JPMorgan Chase
- Reginald McGregor, Rolls-Royce Corporation

Governing Board Members:

- Terry Mazany, Chair, Ad Hoc Committee on Measures of Postsecondary Preparedness
- Honorable James E. Geringer, Former Governor of Wyoming, Cheyenne, Wyoming
- Carol Jago, Associate Director, California Reading & Literature Project at UCLA, Oak Park, Illinois
- Dale Nowlin, Teacher and Mathematics Department Chair, Bartholomew Consolidated School Corporation, Columbus, Indiana
- Honorable Beverly Perdue, Former Governor of North Carolina, New Bern, North Carolina
- Linda P. Rosen, Chief Executive Officer, Change the Equation, Washington, DC
- Chasidy White, Director of Strategic Initiatives, Office of the Superintendent, Montgomery, Alabama

Governing Board Staff Members:

- Bill Bushaw, Executive Director
- Lisa Stooksberry, Deputy Executive Director
- Lily Clark, Assistant Director for Policy & Research
- Laura LoGerfo, Assistant Director for Reporting & Analysis
- Munira Mwalimu, Executive Officer & Contracting Officer
- Sharyn Rosenberg, Assistant Director for Psychometrics
- Angela Scott, Management & Program Analyst

HumRRO Staff Members:

- Monica Gribben, Senior Staff Scientist
- Deirdre Knapp, Vice President, Assessment and Evaluation in Education and the Workplace
- Jackson Millard, Research Associate
- Thanos Patelis, Principal Scientist

Expert Panelists

Paula Collins

Vice President, Worldwide Government Relations
Texas Instruments



Paula J. Collins is vice president of Worldwide Government Relations for Texas Instruments where she leads the Company's advocacy activities in the United States and abroad. She joined Texas Instruments in 1999 as Director of Government Relations and managed the Company's legislative and public policy activities on a wide range of issues, including immigration, funding for basic research and education.

Ms. Collins came to Texas Instruments with extensive government, corporate and business association experience. After serving as a legislative assistant on Capitol Hill, she joined American Express Company, where for ten years she directed the Company's legislative activities on a wide range of public policy issues including a number of trade initiatives. In

1993, she joined the Business Roundtable where she worked closely with corporate leaders to develop and implement public policy campaigns on international trade, budget and workforce initiatives. From 1995-1997, she directed international trade relations at Eastman Kodak Company and from 1997-1999 was a principal with The Fratelli Group, a strategic communications firm where she played an active role in the development and implementation of comprehensive public affairs strategies for several coalitions on trade and telecommunications issues.

Ms. Collins is a graduate of Yale University and attended the Program for Management Development at Harvard Business School. She is an active participant in her church and local civic organizations, and is a member of several professional organizations. She is a member of the Board of Directors and Executive Committee of the Information Technology Industry Council, and chairman of the Board of the Task Force on American Innovation.

Marcelino Ford-Livene

General Manager, Global Programs and Alliances
Intel Corporation



Marcelino Ford-Livene is the General Manager of Global Programs and Alliances for Intel's Worldwide Corporate Affairs Group. In this capacity, he leads the organization charged with designing the framework and strategic plan for identifying and prioritizing win-win strategic alliances, relationships and partnerships with various global industry, government and special interest groups that advance the strategic direction of Intel's Diversity and Inclusion Initiative. Prior to this role, Ford-Livene was the General Manger of New Channels and Advanced Advertising for Intel Media, where he led the organization charged with programming, licensing and distributing new format television channels and advertising-supported video-on-demand programming. He was also responsible for advertising sales, advertising operations, audience research and data analytics for Intel Media's OTT services. He also co-authored patents on TV viewership analytics and advanced advertising behavioral targeting. Prior

to Intel, he was a senior member of TV Guide's corporate development and planning team. He has also held senior positions with the U.S. Federal Communications Commission in Washington, DC. He served as Special Counsel for New Media Policy for Chairman William E. Kennard and as Senior Counsel and Director of Media Strategic Analysis for the FCC's Office of Strategic Planning under Chairman Michael Powell. Ford-Livene was the Division Chairman of the Interactive Media Division for the American Bar Association's Forum on the Entertainment and Sports Industries from 2006 to 2013. He also served for eight years on the board of the TV Academy, the organization that awards the prestigious Primetime Emmy for creative excellence in the television industry. He was also the TV Academy's Board Secretary and a member of its Executive Committee from 2010 to 2013. He is currently the Co-Chairman of the TV Academy's Diversity Committee and a founding board member of the Digital Diversity Network. Corporate boards that Ford-Livene has served on include Delivery Agent in San Francisco, CA and TRA Global, which was acquired by TiVo. Ford-Livene earned a B.A. in economics from UC San Diego, a J.D./M.B.A. from the University of Illinois and has completed an Executive Leadership Program at Harvard Business School.

Scott Heimlich

Vice President, Amgen Foundation



Scott M. Heimlich is vice president of the Amgen Foundation. He is responsible for the strategic management and direction of the Foundation's science education portfolio, including the development and oversight of key initiatives at the K-12 and higher education levels. He was the principal architect and continues to lead the Amgen Scholars Program, the Foundation's largest initiative providing undergraduates with access to research opportunities at premier educational and research institutions across the world. Under his leadership, the Amgen Biotech Experience transformed from a local program into a multi-site, international initiative bringing biotechnology lab experiences to over 80,000 secondary students a year. With these and many other initiatives, the Foundation's commitment to science education recently surpassed the \$125 million milestone.

Prior to joining Amgen in 2005, he served in positions at the University of California, Los Angeles, Los Angeles Pierce College, University of Southern California, and a junior high school in Japan. He holds a bachelor's degree, master's degree, and doctorate in education from the University of California, Los Angeles.

Chauncy Lennon

Managing Director and Head of Workforce Initiatives
Global Philanthropy
JPMorgan Chase & Co.



Chauncy Lennon leads JPMorgan Chase & Co.'s initiatives to promote economic opportunity through investments in workforce practice, innovation, and policy. These include New Skills at Work, a \$250 million global initiative to support demand-driven workforce systems that promote prosperity for workers and industries; New Skills for Youth, a \$75 million initiative to increase the number of young people who complete career pathways that begin in high school and end with postsecondary degrees or credentials aligned with good-paying, high-demand jobs; The Fellowship Initiative, a program providing young men of color with learning experiences that help them achieve their education and career potential; and a \$17 million investment in Summer Youth Employment Programs in US cities to help underserved youth obtain the skills necessary to build lasting careers.

He serves on the New York City Workforce Development Board, the College Promise Campaign Advisory Board, and the Neighborhood Trust Financial Partners Board.

He joined JPMorgan Chase from the Ford Foundation, where his grant-making focused on promoting economic advancement for low-income workers by improving access to workforce development and work support programs. Prior to the Ford Foundation, he was senior vice president for Asset Building at Seedco, a national workforce development intermediary. He also has extensive experience researching the mobility patterns of the working poor. He earned his Ph.D. in anthropology from Columbia University, master's degree from the University of Chicago and bachelor's degree from Williams College. He has taught urban studies at Columbia's School of International and Public Affairs and Barnard College.

Reginald McGregor

Manager, Research & Technology Strategy Group
Rolls-Royce Corporation



Reginald McGregor, Manager of Engineering Employee Development and STEM Outreach at Rolls-Royce Corporation. He is a Mechanical Engineer with over 15 years' experience in various engineering roles. He spent over 8 years in early career development managing the engineering co-op; high school internship and graduate development programs. Reginald holds BS in Mechanical Engineering, MBA and currently completing a MS in Technology Leadership and Innovation. He is very active in workforce development and STEM education and serving the community. Reginald enjoys reading, outdoor activities and spending time with family.

Reginald serves on several boards and committees including the Governor-appointed Region 5 Works Council, President of the Lawrence Township School Board, Indiana STEM Advisory Council, STEMx National Advisory Board, Purdue Engineering Education Industrial Advisory Council, Marion County Superintendents STEM Coalition, Indiana Chamber of Commerce K-12 and Workforce Committees, Million Women Mentor Steering Committee, Indiana Afterschool Network Board, and EmployIndy Youth Committee.