



Compete.

Council on
Competitiveness

Competing in the Next Economy

Sustainability: Pursuing Innovation with Purpose

Presented by

LOCKHEED MARTIN



Table of Contents

Framing Remarks	2
Thinking Systematically About Sustainability— Lessons from Lockheed Martin	3
Adoption of Sustainability Metrics and Stakeholder Capitalism	5
Sustainability, Productivity, and Value	6
Connecting the Innovation Ecosystem: National Laboratories and Universities	7
Investing in Sustainability	8
The Power of Partnerships	9
Concluding Thoughts—Pursuing Innovation with Purpose	10
Panelist Bios	11
About the Council on Competitiveness	16
Council on Competitiveness Members, Fellows and Staff	17

Session Summary

Framing Remarks

The Honorable Deborah L. Wince-Smith, President & CEO, Council on Competitiveness (Council), and Mr. Chad Evans, Executive Vice President at the Council, welcomed participants to the first *Competing in the Next Economy* webinar: “Sustainability—Pursuing Innovation with Purpose.” This is the first in a series of conversations, in partnership with Lockheed Martin, to build on the work of the Council’s National Commission on Innovation and Competitiveness Frontiers, and its year one report, *Competing in the Next Economy*.



Ms. Wince-Smith set the stage for the conversation by reflecting on the Council’s deep history and background in making the business case for sustainability, energy security, resiliency and innovation. She noted the sustainability imperative—growing so quickly in the United States—is a

global imperative, essential for not only preserving resources and protecting the environment, but also for ensuring the sustainment of communities, diversity and inclusivity and flourishing of society in general. Sustainability, in this broad context, is essential for businesses, cities, regions and countries, and the Council’s work during the last decade has consistently identified it as an issue driving competitiveness in the next economy. Manufacturing is already under-

Panelists

Mr. Joseph K. Goodwin
Strategic Initiatives Executive
Bank of America

Dr. Leo S. Mackay, Jr.
Senior Vice President of Ethics
and Enterprise Assurance
Lockheed Martin

Dr. Karl Mueller
Lab Fellow, Chief Science and Technology
Officer, Physical and Computational Sciences
Pacific Northwest National Laboratory

Dr. Al P. Pisano
Dean and Walter J. Zable Distinguished
Professor, Jacobs School of Engineering
University of California, San Diego

The Honorable Deborah L. Wince-Smith
President & CEO
Council on Competitiveness

Moderator

Mr. Chad Evans
Executive Vice President and Secretary
to the Board
Council on Competitiveness

going a seminal transformation from being “dirty, dumb, dangerous, and disappearing” to “sustainable, smart, safe, and surging.”

She also noted that a range of new technologies are emerging to help drive toward a zero-carbon, de-materialized innovation ecosystem that will be at the heart of the nation’s agenda for competitiveness, productivity, and national security. New technologies and emerging metrics and standards are being driven by business leaders—including Council Chairman Mr. Brian Moynihan, Chairman and CEO, Bank of America—and the financial industry is among those industries at the forefront of the sustainability agenda, along with the national laboratories and universities.

Thinking Systematically About Sustainability—Lessons from Lockheed Martin

In opening the panel, Mr. Chad Evans of the Council noted the public and private sectors are moving forward with aggressive new benchmarks and metrics for sustainability, reflecting a dramatic shift in public opinion during the past decade. He noted that nearly 90 percent of corporations now issue environmental, social, and governance (ESG) reports to shareholders outlining their sustainability efforts, compared to just 20 percent a decade ago,¹ and the percentage of Americans who believe climate change to be a threat to the United States has risen during the same time from 44 percent to 60 percent.²



Top row: Mr. Chad Evans, Executive Vice President and Secretary to the Board, Council on Competitiveness; the Honorable Deborah L. Wince-Smith, President & CEO, Council on Competitiveness; and Dr. Al P. Pisano, Dean and Walter J. Zable Distinguished Professor, Jacobs School of Engineering, University of California, San Diego. **Bottom row:** Mr. Joseph K. Goodwin, Strategic Initiatives Executive, Bank of America; Dr. Karl Mueller, Lab Fellow, Chief Science and Technology Officer, Physical and Computational Sciences, Pacific Northwest National Laboratory; and Dr. Leo S. Mackay, Jr., Senior Vice President of Ethics and Enterprise Assurance, Lockheed Martin.

- 1 <https://about.bankofamerica.com/en/making-an-impact/stakeholder-capitalism-metrics>.
- 2 How Americans see climate change and the environment in 7 charts, Fact Tank, Pew Research Center, April 21, 2020.

In the past year, **Deere & Company** has made major strides in its sustainability goals—reflected in its *2020 Sustainability Report*. For example, it recycled 78 percent of waste, produced 28 million pounds of material via recycled manufacturing, and sources 32 percent of its global electricity from renewables, contributing to a 19 percent reduction in greenhouse emissions



since 2017. Deere & Company also invested \$36.7 million in citizenship efforts as part of its community investment program. During the pandemic, Deere manufactured more than 400,000 face shields and provided work-from-home arrangements for 85 percent of its 69,600 employees around the globe.

Bank of America's most recent ESG report outlines its goals in economic and social progress, environmental sustainability, and its workforce, along with its progress in achieving them. It achieved its goals of purchasing 100 percent of its energy from renewable resources and becoming carbon neutral for Scope 1 and 2 emissions a year ahead of schedule, and also hit its

targets of reducing energy use by 40 percent and location-based GHG emissions by 50 percent. Bank of America has also achieved, or is on track to achieve, goals in financing low-carbon businesses, green buildings, water usage, paper reduction, and vendor engagement.



However, despite the growth in interest in sustainability issues, Mr. Evans reflected there remains no agreed upon set of metrics in the sustainability space.

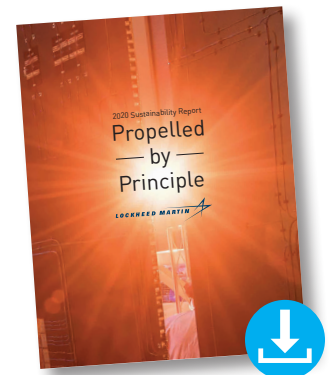
Turning to Dr. Leo Mackay of Lockheed Martin, Mr. Evans noted how Lockheed Martin has been recognized as a corporate leader in sustainability, receiving high marks from CDP, as well as from the Dow Jones Sustainability World Index for sustainability, for leading on environmental transparency and climate performance, and for providing capital markets with access to very detailed corporate sustainability performance data.

Mr. Evans asked Dr. Mackay to comment on these accomplishments and to share key findings from Lockheed Martin's new, annual sustainability report, *Propelled by Principle*, that details the company's accomplishments since 2015 and lays out an ambitious agenda through to 2025.

Dr. Mackay said that *Propelled by Principle* was a milestone for Lockheed Martin, as it sunset the company's "Sustainability Management Plan 2020"

and serves as the launch pad both for its "Sustainability Management Plan 2025" and its "Roadway 2030" programs that set new sustainability benchmarks for the company. The goals outlined in *Propelled by Principle* are linked to 14 core issues whose benchmarks are synced up with Lockheed Martin's five-year sustainability plans.

Dr. Mackay also shared that Lockheed Martin takes a holistic approach to understanding and benchmarking sustainability efforts, consulting with stakeholders—like government partners and the investor communities at home and abroad—to understand issues of importance to them before setting the company's own sustainability objectives. Dr. Mackay highlighted metrics and reporting—and the ability to compare a company's performance across sectors



PepsiCo tracks sustainability in agriculture, water, packaging, product, climate, and people. Its most



recent sustainability report outlines achievements in each of these areas. Nearly 80 percent of PepsiCo's potatoes, whole corn, oats, and oranges are sustainably sourced, and it has locally replenished more than 1.6 billion liters of water in high-risk areas, while improving its opera-

tional water-use efficiency by 9 percent in those areas since 2015. PepsiCo has also committed to a 35 percent reduction in virgin plastic content across its beverage portfolio by 2025, and it has transitioned to 100 percent renewable electricity in U.S. direct operations, as well as in operations in nine European countries.

and over time—as key issues in sustainability, and noted that *Propelled by Principle* was Lockheed Martin's first report to use Sustainability Accounting Standards Board (SASB) metrics in addition to Global Reporting Initiative (GRI) metrics.

He also noted the new report outlines a range of the company's achievements during the past decade in the sustainability space. For example, Dr. Mackay pointed to Lockheed Martin's 38 percent reduction in emissions relative to a 2010 baseline, as well as to \$4 billion in annual product sales directly and measurably linked to advanced energy and infrastructure resiliency efforts.

Key to Lockheed Martin's sustainability efforts, Dr. Mackay argues, is its integrated approach. Lockheed Martin has a single director both for sustainability and risk management, who reports directly to Dr. Mackay. And the work of this director links sustainability to other risk management functions, including environmental, safety and health (ESH) reporting, and internal audits. This integrated assurance model

results in a common senior reporting official that brings a holistic sustainability approach to the company's C-suite. Additionally, Lockheed Martin's Executive Leadership Team, comprised of the C-suite and positions that directly report to the C-suite, are the custodians and governing body of Lockheed Martin's sustainability program. They also name deputies who comprise a Sustainability Leadership Council to oversee the company's efforts in this space. Dr. Mackay emphasized that by having the same group that manages profit and loss oversee compliance with sustainability goals, Lockheed Martin can ensure every action taken by the company includes sustainability considerations and aligns its economic interests with social responsibility. Dr. Mackay advocated for the adoption of this model across industry.

Adoption of Sustainability Metrics and Stakeholder Capitalism

Pivoting to the financial services sector, Mr. Evans asked Mr. Joseph K. Goodwin of Bank of America to reflect on Dr. Mackay's remarks and to discuss both Bank of America's efforts in promoting sustainability, and, more generally, the evolution of metrics and benchmarks across industry. Agreeing with and emphasizing a point strongly made by Dr. Mackay, Mr. Goodwin noted Bank of America has been driving sustainability efforts in the financial sector and beyond for more than a decade, primarily because its efforts have been driven from the top. He remarked the Bank has, like many organizations, adopted the use of the UN Sustainable Development Goals, which cover 17 categories, including development of renewables, climate action, and reducing inequality, as a framework for setting its sustainability objectives. He contended the private sector needs to develop metrics that gauge long-term value across industries to direct capital toward high-performing firms on track to meet these types of goals. Affirming Dr. Mackay's argument that businesses which adopt a model like Lockheed Martin's will spot risks sooner and exploit opportunities earlier than their competitors, Mr. Goodwin pointed to the large body of evidence documenting the success of companies that focus on ESG priorities.

Mr. Goodwin shared, as an guideline on how best to align company goals with the values of stakeholder, the [World Economic Forum's 2020 Stakeholder Capitalism Metrics](#). These metrics include 21 core and 34 expanded measures across people, prosperity and governance principles, and are intended to compare company ESG performance consistently across sectors and geographies. The *Stakeholder Capitalism Metrics* provide simplified and streamlined convergence of ESG standards, and make firms accountable to all stakeholders. Since January, more than 80 international companies with more than 7 million employees and \$4.3 trillion in market capitalization have signed on to these metrics, representing a powerful convergence of corporate governance practices.

Dr. Mackay postulated the sharing of stakeholder metrics across companies, industries, and sectors has contributed to the convergence in practice and the adoption of best practices. He characterized adoption of general sustainability metrics as a hallmark of solid management, and said companies adopt metrics like the *Stakeholder Capitalism Metrics* because they are correlated with strong performance, good risk management, and preservation of shareholder value. He emphasized that for-profit enterprises are particularly responsive to meeting and surpassing these emergent sustainability metrics because of the discipline stemming from the marketplace and the imperative to deliver returns to shareholders. Dr. Mackay also recognized the work

An Overview of the Council's History of Work on Sustainability, Resiliency, and Energy

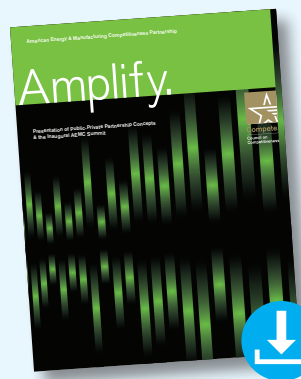
Drive. Private Sector Demand for Sustainable Energy Solutions (2009)



The report developed core recommendations centered around sustainability and the opportunities for competitiveness that open up from U.S. global sustainability leadership. Highlighting international collaboration, public education, rewarding efficiency, supporting local

infrastructure to develop a growing sector of sustainability-related manufacturing, and developing a highly-skilled workforce, the report remains current and targets many aspects that are also included in President Joe Biden's Plan for a Clean Energy Revolution and Environmental Justice.

Amplify. Presentation of Public-Private Partnership Concepts & the Inaugural AEMC Summit (2013)



Developed as a three-year effort between the Council and the Department of Energy Office of Energy Efficiency and Renewable Energy, the American Energy & Manufacturing Competitiveness Partnership brought together key national leaders

around two core goals: (1) increasing competitiveness in the production of clean energy products, and (2) increase U.S. manufacturing competitiveness by increasing energy productivity. The result of several dialogues were two PPP concepts that were submitted to the DOE for consideration that addressed issues such as use of sustainable materials, materials classification, the development of standards and the connection of leading U.S. institutions to promote innovation and cutting-edge clean energy technologies.

of non-profit groups, with particulate subject matter expertise that complements market pressure, in spurring corporate action on sustainability issues.

Sustainability, Productivity, and Value

Ms. Wince-Smith added to the discussion ideas around an expanded view of sustainability, one that links corporate social responsibility and environmental stewardship to increasing productivity, creating value and supporting improving living standards for all. She reflected on the parallels between today's conversations around sustainability to those around the total quality movement in the 1980s and the safety-health debates of the 1990s. In both cases, the Council played a role in this transformational thinking, finding way to elevate these issues to the C-suite and focus on quality, safety, and resiliency as productivity and prosperity drivers—and not as sunk costs.

Connecting the Innovation Ecosystem: National Laboratories and Universities

Pushing the conversation forward, Mr. Evans asked Dr. Karl Mueller of the Pacific Northwest National Laboratory and Dr. Al P. Pisano of the University of California, San Diego, to reflect on the conversation and also begin to discuss the roles of the U.S. innovation “crown jewels”—the nation's national laboratory enterprise and university ecosystem—in meeting the country's sustainability challenges and opportunities.

Dr. Mueller jumped in, discussing the challenges in harnessing U.S. innovation capabilities to meet decarbonization at scale across the country—and the world—and the distinctive role of scientists and engineers as stakeholders in this effort. He noted the nation's 17 U.S. Department of Energy (DOE) National Laboratories employ more than 70,000 people and are focused on solving the most complex problems in sustainability, including carbon capture, new batteries, low-carbon materials, climate modeling, and smart manufacturing. While the DOE National Laboratories do not always look at innovation from the same perspective as industry, Dr. Mueller pointed out they do conduct research and

development that leads to technology deployment and application by industry, helping to fuel innovation and sustainability. Dr. Mueller urged a further bridging of divides between the national laboratories and industry—including instructing laboratory staff in entrepreneurship related, for example, to sustainability—and creating a supportive environment for laboratory-based startups that spin off to enable them to connect to the larger innovation ecosystem.

He went on to estimate that the United States is currently on track to get 80 percent of the way to total decarbonization by 2050, but that the country must invest today—across academia, industry and the national laboratories—in the technologies and practices that will take the United States the last 20 percent of the way. The facilities offered by the DOE National Laboratories, which more than 35,000 outside researchers use every year to access unique equipment, user facilities and expertise found nowhere else, can accelerate sustainability-related

Leveraging the U.S. Patent System to Stimulate Sustainable Innovations



In the National Commission on Innovation and Competitiveness Frontiers year one report, *Competing in the Next Economy*, the Council recommends the use of the U.S. patent system to leverage and stimulate the development of sustainable innovations

as “Patents for the Planet,” building on the U.S. Patent and Trademark Office's previous development of “Patents for Humanity.”

Winners would receive an acceleration certificate to expedite select proceedings at the USPTO and public recognition of their work.

Read more about the recommendation on pages 64-67 of the report.

innovation, and Dr. Mueller called for an expansion of access to the DOE National Laboratories for innovators along with a continued investment in expanding the science, technology, and engineering workforce.

Dr. Pisano added to the conversation by discussing academia's role in driving greater innovation for sustainability, and the importance of including consumers in the sustainability conversation. He noted academia has a unique, holistic perspective on the different aspects of sustainability—money, people, and technology. Couple that with burgeoning demand for graduates equipped for the sustainable “innovation workforce,” and the case is clear that innovation for sustainable technology must become a core focus of the educational mission.

Dr. Pisano extended his remarks to focus on technologies of the present and future that will be critical to meeting the nation's and the world's ambitious

sustainability goals. For example, he made the case that the unprecedented increase in sensors and other communication technologies have enabled much greater efficiency in supply chains, and that research on new materials offered the possibility of still greater sustainability. He postulated that rather than removing carbon from the economy after it has been emitted, green bio-engineered materials could avoid putting carbon into the economy in the first place.

However, for these green products to enter the market at scale, consumers must understand their value and change their consumption habits to prefer sustainable products. Business-to-business enterprises will be able to act more quickly on decarbonization than business-to-consumer enterprises, and Dr. Pisano suggested the use of new metrics and certifications to spur changes in consumer behavior. Noting the effectiveness of the Energy Star program, first developed at the DOE National Laboratories to incentivize consumers to purchase energy-efficient appliances, he called for a similar system—say, a “Sustainability Star” program—that evaluates products for overall life-cycle sustainability. Dr. Pisano said the evidence proved that consumers respond when they understand the long-term costs of products that are not environmentally sustainable.

Dr. Pisano also stressed that consumers are already expressing interest in sustainable consumption and are looking for guidance and better information about the provenance of the products they consume. Mr. Goodwin echoed this sentiment, noting that Bank of America consistently receives feedback from its employees on the importance of committing to sustainability, and said that corporations should strive to educate the public as much as possible. Dr. Mueller called for a “sustainability moonshot,” investing in every part of the product development pipeline to make sustainability a part of everyday life and lower the cost of entry into the sustainability marketplace for producers.



The **Energy Star** program, run by the Environmental Protection Agency and the U.S. Department of Energy, provides information about the energy efficiency of household products and appliances. The program also provides tax credits for energy-efficient residences and commercial buildings and industrial plants. Designed to incentivize the purchase of more sustainable products and technologies, in 2019 the program helped Americans save nearly 500 billion kilowatt hours of electricity and avoid \$39 billion in energy costs. These savings resulted in a reduction of 390 million metric tons of greenhouse gases, equivalent to 5 percent of total U.S. annual emissions.

Investing in Sustainability

Many of the most promising technologies for enhancing sustainability require substantial, long-term investment and a dramatically different business development strategy in comparison to the “app economy” and traditional venture capital-backed investments. Mr. Goodwin highlighted innovations the financial sector is looking to develop and field to provide the investment and incentives needed to deploy these deep, tough sustainability-related technologies at scale.

For example, Mr. Goodwin referenced Bank of America’s environmental business initiative, which aims to deploy \$1 trillion by 2030 in the form of green bonds and to direct investment in renewable energy, energy efficiency, sustainable transportation, pollution control, sustainable water and agriculture, etc. Additionally, because most companies will not be able to achieve net zero emissions by 2050 without significant carbon offsets, such as planting trees and conserving forests, financial institutions could provide funding derived from the burgeoning carbon offsets market to be used in research and development for sustainable technologies that will not be profitable in the short term. These kinds of initiatives will be crucial in helping firms go the last mile in achieving carbon neutrality.

Dr. Mackay said the most important components of investment in sustainability were hard problems, clean data sets, and innovative people. There is significant interest and funding available for innovative ideas to eliminate emissions, and entrepreneurs are striving for improvements orders of magnitude above current practices. Lockheed Martin’s venture capital arm, LM Ventures, is identifying exciting innovations in the private sector, the national laboratories and academia, but is focused on circularity rather than “moonshots” as the key to sustainability. Lockheed Martin has a business model in its government contracting that requires it to specify system performance across the entire life cycle of technologies, and it brings this approach to sustainability

investment as it looks for product circularity that reuses resources. He also echoed the need to invest in research to develop the offsets for the final 20 percent of innovation needed for net zero emissions by 2050.

The Power of Partnerships

Panelists discussed the critical role of partnerships in fostering the development and deployment of sustainable technologies and practices. Dr. Mackay described Lockheed Martin’s process for encouraging partner firms, especially those based in countries without the same commitment to sustainability. While many technologies Lockheed Martin develops are so critical to national security that they cannot market or transfer them without explicit federal approval, in other ventures Lockheed Martin has the option of pulling out of deals with unsustainable suppliers, using its clout to persuade suppliers/partners to change practices, or set an example with its own actions and hope suppliers/partners follow suit. Lockheed Martin generally follows the second option, working with suppliers/partners to ensure they comply with best practices in sustainability through a code of conduct, training programs, and working diligently to observe the letter and spirit of government laws on conflict minerals, human trafficking, and other ethics and sustainability issues.

Dr. Pisano stressed the importance of academia and national laboratories forming the right kinds of partnerships with industry and venture capital—without the right focus, desired outcomes either will not be reached or will come too far in the future to be commercially viable. While curiosity-driven research provides an important foundation for the nation’s scientific enterprise, use-inspired research is also critical for positive outcomes, and academia must leverage the market knowledge that industry and venture capital partners have to direct its research activities. Dr. Mueller echoed this sentiment, adding that while the national laboratories pride themselves on moving from fundamental to applied research, partnerships with industry and venture capital are key to providing the disruption to take those innovations the last mile to the market.

Concluding Thoughts—Pursuing Innovation with Purpose

In bringing the conversation to a close, Mr. Evans asked panelists for final reflections.

- Mr. Goodwin highlighted the role of the financial sector in reducing the costs of transitioning to sustainable practices and deploying disruptive innovations. For example, the Glasgow Financial Alliance for Net Zero, comprising more than 160 international financial institutions, is committed to helping members' clients, customers, and suppliers reach net zero emissions by 2050. Because banks—like many service industries—have an easier time achieving net zero than many manufacturing industries, they have an opportunity and responsibility to leverage their full balance sheet and advisory capabilities. Often, this means working with firms that are not sustainable rather than divesting from them; helping them establish a credible path to reach net zero rather than leaving them behind and stalling the progress of sustainable practices across industries.
- Dr. Pisano made the case that academia is ready to engage and actively seeking industry partners, and he noted the spiral of cross-sector engagement and partnership was already picking up pace.
- Dr. Mueller urged for more partnership between the national laboratories and other stakeholders in the innovation ecosystem, as the distinctive facilities and resources of the laboratories could provide the foundation for a shared, national infrastructure for sustainability innovation.
- Dr. Mackay agreed with Ms. Wince-Smith's earlier connection of sustainability to resilience, and noted that robustness, cost efficiency, and productivity all found outlets in a sustainability focus, making sustainability key to effective risk management.
- Ms. Wince-Smith thanked the panelists for their contributions, and said the conversation had brought forward critical issues around innovation capacity, sustainability, and resiliency as the country emerges from the COVID-19 pandemic. She linked sustainability to the concept of eudaemonia, or human flourishing, and noted that during the pandemic it has become clear that many families, cities, communities, and regions are not flourishing. Without sustainability, it is impossible to create thriving communities and achieve the Council's goal of delivering prosperity, security and flourishing to every American citizen, and to the world as a whole.
- Mr. Evans encouraged participants to explore the *Competing in the Next Economy* and *Propelled by Principle* reports online, and noted that the next Council on Competitiveness-Lockheed Martin webinar will take place in late June 2021, focusing on the future of advanced manufacturing.

Panelist Bios

Mr. Joseph K. Goodwin
Strategic Initiatives Executive
Bank of America



Joseph K. Goodwin (Joe) is the Strategic Initiatives Executive at Bank of America. In that role, he helps lead Bank of America's efforts around partnerships related to sustainability, to include the Sustainable Markets Initiative, the UN Global Investors for Sustainable Development, the Vatican Council on

Inclusive Capitalism, and the IBC Stakeholder Capitalism Metrics. He also helps coordinate the participation of the CEO and the Vice-Chair in a variety of national and international trade associations and think tanks.

Joe is a graduate of Harvard and Harvard Law School. Joe enlisted in the U.S. Army in the days immediately following 9/11. He was awarded the Bronze Start for exemplary performance in combat.

Joe's duties in the army included being a combat platoon leader, an aide-de-camp to assistant division commander of the 1st Armored Division and a Strategic Advisor to the director of strategic communications for NATO in Afghanistan. In that capacity he developed key leader engagement strategies

and priorities, served as a liaison between NATO and special forces from various countries, provided interface with other governmental agencies, and developed and executed NATO plans for responses to civilian casualty incidents.

Joe has worked at GE in a rotational program—spending time on the factory floor manufacturing Steam turbines, working in financial planning and analysis for the renewables business and serving an analyst on NBC's internal consulting team. After law school, Joe worked for noted inventor Dean Kamen at DEKA Engineering as a special projects officer. Here, among other pursuits, he successfully led a team of engineers, regulatory experts and users to have the FDA change the classification of a medical device to ensure easier manufacture.

Joe has served as the Chief-of-Staff to businessman Steve Pagliuca during his bid for U.S. Senate, he ran himself—unsuccessfully—for state senate between his second and third year of law school, and is on the board of directors of Veteran's Legal Services, a non-profit that provides legal aide to qualifying veterans.

Joe is married to Veronika Goodwin and lives in Boston with their son Alexander.

Dr. Leo S. Mackay, Jr.

Senior Vice President of Ethics
and Enterprise Assurance
Lockheed Martin



Leo S. Mackay, Jr. is Senior Vice President, Ethics and Enterprise Assurance. He reports directly to the President, and CEO; and to the Audit Committee of the Board of Directors. As the Chief Audit Executive he provides independent, objective assurance and advisory activity to improve the

Corporation's operations. He is responsible for overseeing Lockheed Martin's award-winning ethics program and the execution of the Corporation's compliance training. As the Chief Sustainability Officer, he is responsible for ensuring responsible growth and global corporate citizenship providing a focal point for the many Lockheed Martin organizations committed to responsible business practices encompassing environmental stewardship, community outreach, employee health and safety, ethical business practices, philanthropy, and diversity and inclusion. He is also a director of LMVentures, Lockheed Martin's \$200M corporate venture capital arm.

His previous assignments at Lockheed Martin have included Vice President, Corporate Domestic Business Development; and President of ICGS, LLC, a joint venture of Lockheed Martin and Northrop Grumman focused on providing program management, systems integration, aircraft systems, C4ISR and integrated logistics for the U.S. Coast Guard's modernization.

Dr. Mackay is an independent director of Cognizant Technology Solutions Corporation (NASDAQ: CTSI), USAA Federal Savings Bank, and Ameren, Inc. (NYSE: AEE). He is an external sustainability advisor to Merck, Inc. Previous experiences have

included serving on the board at the Center for a New American Security, Washington, DC; chairing the Board of Visitors at the Graduate School of Public Affairs of the University of Maryland; serving as Chair of the Secretary of Health and Human Services' Advisory Committee on Minority Health; and serving on the board for Cook's Children's Hospital, Fort Worth, TX.

A graduate of the U.S. Naval Academy, Dr. Mackay was a Secretary of the Navy Distinguished Midshipman Graduate. After pilot training, he spent three years flying the F-14. He is a veteran of Operation Earnest Will. Dr. Mackay served in the Office of the Secretary of Defense as military assistant to the Assistant Secretary of Defense for International Security Policy, and, in the first administration of President George W. Bush, was Deputy Secretary of Veterans Affairs, and departmental Chief Operating Officer, of the nation's second largest cabinet agency.

Dr. Mackay has earned a master's, and Ph.D. degree in public policy from Harvard University. He was a Kennedy Fellow, Harvard MacArthur Scholar, Graduate Prize Fellow and a Research Fellow at the Center for Science and International Affairs. He has taught military history and western civilization at the Naval Academy and was a Special Guest Fellow at the Brookings Institution.

Dr. Mackay was awarded the Doctor of Laws degree, honoris causa, from Concordia Seminary, St. Louis, MO. He received the Exceptional Service Medal from the Dept. of Veterans Affairs, and the Dept. of the Treasury's Medal of Merit for service as Chairman of the Fort Worth region's U.S. Savings Bond Campaign. Dr. Mackay is a member of the U.S. Naval Institute, and a former member of the Aspen Strategy Group.

Dr. Karl Mueller

Lab Fellow, Chief Science and Technology Officer,
Physical and Computational Sciences
Pacific Northwest National Laboratory



Dr. Karl Mueller is the Chief Science and Technology Officer for Physical and Computational Sciences at the Pacific Northwest National Laboratory (PNNL). In this role, he leads and advocates a Science and Technology vision that builds scientific reputation and provides technical integration to

ensure regional, national, and international impact. He has built a strategy at PNNL focused on chemical reactions at complex interfaces, new discoveries in nuclear and particle physics, the science of computing and co-design, and quantum information sciences. He is also leading laboratory-level scientific strategy for the reinvention of chemical catalysis and catalyst systems, with application targets such as polymer upcycling and the efficient conversion of waste to fuels.

Dr. Mueller earned his PhD in physical chemistry from the University of California at Berkeley and a BS in chemistry from the University of Rochester. Prior to joining PNNL in 2010, he rose through the faculty ranks to become a Professor of Chemistry at Penn State University. He was elected as a Fellow of the American Association for the Advancement of Science in 2012 for his contributions to the field of magnetic resonance spectroscopy. He is also a Laboratory Fellow at PNNL and the recipient of numerous awards including a National Science Foundation Young Investigator Award, a Camille Dreyfus Teacher-Scholar Award, a Research Corporation Cottrell Scholar Award, an Alfred P. Sloan Research Fellowship, and an Arnold and Mabel Beckman Foundation Young Investigator Award. He currently co-chairs the Science Advisory Council for the Arnold and Mabel Beckman Foundation.

Dr. Al P. Pisano

Dean and Walter J. Zable Distinguished Professor,
Jacobs School of Engineering
University of California, San Diego



Dr. Albert ("Al") P. Pisano was appointed as the Dean of Engineering at UC San Diego 1 September 2013. He held appointments at the University of California at Berkeley for 30 years, serving in a number of leadership positions. He was elected to the U.S. National Academy of Engineering in

2001 and to Fellow status in the ASME in 2004. As the Dean of Engineering, he holds the Walter J. Zable Chair of Engineering, and is appointed as Distinguished Professor both in Mechanical and Aerospace Engineering as well as in Electrical and Computer Engineering. From 1997-1999, he served as Program Manager for MEMS at the Defense Advanced Research Projects Agency (DARPA) where he expanded the research portfolio to 83 contracts awarded nationwide with a total MEMS research expenditure in excess of \$168 million over 3 fiscal years. Having graduated nearly 70 Ph.D. students and 75 MS students, he is an author of over 400 journal papers and 36 patents. He is a 10-time entrepreneur, and his research interests include MEMS for a wide variety of applications, including harsh environment sensors systems and wearable sensors.

The Honorable Deborah L. Wince-Smith

President & CEO
Council on Competitiveness



The Honorable Deborah L. Wince-Smith is the President & CEO of the Council on Competitiveness, a non-partisan leadership coalition of CEO's, University Presidents, Labor Union Leaders, and National Laboratory Directors, all committed to developing policy solutions and national initiatives

to drive future productivity growth, prosperity for all Americans, and the global success of American business. She has more than 20 years of experience as a senior U.S. government official, as the first Senate-confirmed Assistant Secretary for Technology Policy in the U.S. Department of Commerce in the Administration of President George H.W. Bush, and as the Assistant Director for International Affairs in the White House Office of Science and Technology Policy in the Reagan Administration. She served as a Senate confirmed member of the Oversight Board of the Internal Revenue Service in the Administrations of President George W. Bush and President Barack H. Obama.

Ms. Wince-Smith is also the President and Founder of the Global Federation of Competitiveness Councils (GFCC). She previously served on the Smithsonian National Board, the Secretary of State's Committee on International Economic Policy, the U.S. Naval Academy Foundation and, the Board of Governors of Argonne National Laboratory. She served as Chairman of the World Economic Forum's Global Agenda Council on Competitiveness and as a Public Director of NASDAQ-OMX.

Ms. Wince-Smith currently serves on the Advisory Committee of the Export-Import Bank of the United States (EXIM) and UNICEF. She is also a Commissioner on the Commission on the Theft of American

Intellectual Property, and as a member of the Council of Japan's Science and Technology in Society (STS) Forum. As an expert in technology commercialization, Ms. Wince-Smith serves on the Board of Directors of Aerolase, Inc. and Q-Net Security, Inc., and she serves as the Vice Chair of the Board of the American College of Greece.

Ms. Wince-Smith graduated magna cum laude and Phi Beta Kappa from Vassar College and earned a Master's Degree in Classical Archaeology from King's College, Cambridge University. She has received Honorary Doctorates from Michigan State University, the University of Toledo, the Queens University Belfast, Worcester Polytechnic Institute, and the University of South Carolina.

Mr. Chad Evans

Executive Vice President and Secretary
to the Board
Council on Competitiveness



As Council EVP overseeing all programs and initiatives, Chad develops and manages the Council's policy agenda and workstream, including: development of the Council's flagship "National Commission on Innovation & Competitiveness Frontiers;" creating both the "Building University-Industry-

Lab Dialogue for Advanced Computing" effort and the "Exploring Innovation Frontiers Initiative" with the National Science Foundation; forming the "American Energy & Manufacturing Competitiveness Partnership" with the U.S. Department of Energy; and, helping to shape and launch the "National Engineering Forum."

In addition, Chad has built and shepherded over the past decade the Council's "Technology Leadership and Strategy Initiative," engaging Fortune 500 chief

technology officers, university vice presidents of research, and national laboratory deputy directors to make the policy and business cases for America's innovation-enabling investments in talent, technology and infrastructure.

He has also helmed C-suite innovation summits, dialogues and immersions across Latin America, Europe, Asia and Oceania. Has focused, in particular in Brazil and Australia—having created 4 U.S.-Brazil Innovation Summits and 20+ innovation learning laboratories across both nations; and having launched the first-ever U.S.-Australia CTO Dialogue series.

Chad holds an M.S. from the Georgetown University School of Foreign Service, with an Honors concentration in International Business Diplomacy from Georgetown's Landegger Program. He has a B.A. in Political Science and International Affairs from Emory University.

He is Secretary to the Board of the Council on Competitiveness; Treasurer to the Board of the Global Federation of Competitiveness Councils; a member of the Texas A&M Engineering Experiment Station Advisory Board; an ARCS Foundation National Science and Engineering Advisory Council member; a U.S. German Marshall Fund Fellow; and a past member of the Lawrence Livermore National Laboratory Industry Advisory Council and the World Economic Forum Advisory Board on Russian Competitiveness.

About the Council on Competitiveness

For more than three decades, the Council on Competitiveness (Council) has championed a competitiveness agenda for the United States to attract investment and talent and spur the commercialization of new ideas.

While the players may have changed since its founding in 1986, the mission remains as vital as ever—to enhance U.S. productivity and raise the standard of living for all Americans.

The members of the Council—CEOs, university presidents, labor leaders and national laboratory directors—represent a powerful, nonpartisan voice that sets aside politics and seeks results. By providing real-world perspective to Washington policymakers, the Council's private sector network makes an impact on decision-making across a broad spectrum of issues—from the cutting edge of science and technology, to the democratization of innovation, to the shift from energy weakness to strength that supports the growing renaissance in U.S. manufacturing.

The Council's leadership group firmly believes that with the right policies, the strengths and potential of the U.S. economy far outweigh the current challenges the nation faces on the path to higher growth and greater opportunity for all Americans.

Council on Competitiveness

900 17th Street, NW, Suite 700
Washington, D.C. 20006
202 682 4292
Compete.org

Council on Competitiveness Members, Fellows and Staff

BOARD

Chairman

Mr. Brian T. Moynihan
Chairman and Chief Executive Officer
Bank of America

University Vice-chair

Ms. Joan T. A. Gabel
President
University of Minnesota

Labor Vice-chair

Mr. Lonnie Stephenson
International President
IBEW

Chairman Emeritus

Mr. Charles O. Holliday, Jr.
Chairman
Royal Dutch Shell, plc

President & CEO

The Honorable Deborah L. Wince-Smith
Council on Competitiveness

FOUNDER

Mr. John Young
Former Chief Executive Officer
Hewlett Packard Company

EXECUTIVE COMMITTEE

Mr. Thomas R. Baruch
Managing Director
Baruch Future Ventures

Dr. Gene D. Block
Chancellor
University of California, Los Angeles

Mr. William H. Bohnett
President
Whitecap Investments, LLC

Dr. James P. Clements
President
Clemson University

Mr. Jim Clifton
Chairman and CEO
Gallup

Mr. Mark A. Crosswhite
Chairman, President & CEO
Alabama Power Company

Dr. Michael M. Crow
President
Arizona State University

Dr. John J. DeGioia
President
Georgetown University

Ms. Janet Foutty
Chair of the Board
Deloitte LLP

Dr. William H. Goldstein
Director
Lawrence Livermore National Laboratory

Mr. James S. Hagedorn
Chairman and CEO
The Scotts Miracle-Gro Company

Dr. Sheryl Handler
President and CEO
Ab Initio

The Honorable Shirley Ann Jackson
President
Rensselaer Polytechnic Institute

Dr. Farnam Jahanian
President
Carnegie Mellon University

Dr. Mehmood Khan
President & Chief Executive Officer
Life Biosciences, Inc.

Dr. Pradeep K. Khosla
Chancellor
University of California, San Diego

Mr. James B. Milliken
Chancellor
The University of Texas System

Gen. Richard B. Myers
President
Kansas State University

Mr. Nicholas T. Pinchuk
Chairman and CEO
Snap-on Incorporated

Professor Michael E. Porter
Bishop William Lawrence University Professor
Harvard Business School

Dr. Mark S. Schlissel
President
University of Michigan

Ms. Randi Weingarten
President
American Federation of Teachers, AFL-CIO

Dr. W. Randolph Woodson
Chancellor
North Carolina State University

Mr. Paul A. Yarossi
President
HNTB Holdings Ltd.

Dr. Robert J. Zimmer
President
The University of Chicago

GENERAL MEMBERS

Dr. F. King Alexander
President
Oregon State University

Mr. Jonathan R. Alger
President
James Madison University

Dr. Michael Amiridis
Chancellor
University of Illinois at Chicago

Dr. Joseph E. Aoun
President
Northeastern University

Dr. Dennis Assanis
President
University of Delaware

Dr. Eric Barron
President
The Pennsylvania State University

The Honorable Sandy K. Baruah
President and Chief Executive Officer
Detroit Regional Chamber

Dr. Mark P. Becker
President
Georgia State University

Dr. Richard Benson
President
The University of Texas at Dallas

The Honorable Rebecca M. Blank
Chancellor
University of Wisconsin—Madison

Dr. Lee C. Bollinger
President
Columbia University

Dr. Robert A. Brown
President
Boston University

The Honorable Sylvia M. Burwell
President
American University

Mr. Bob Caslen
President
University of South Carolina

Mr. John Chachas
Managing Partner
Methuselah Advisors

Dr. Steven Currall
President
University of South Florida

The Honorable Mitchell E. Daniels, Jr.
President
Purdue University

Mr. Ernest J. Dianastasis
CEO
The Precisionists, Inc.

Mr. Jeff Donofrio
President and Chief Executive Officer
Business Leaders for Michigan

Dr. Taylor Eighmy
President
The University of Texas at San Antonio

Mr. Gregory L. Fenves
President
Emory University

Mr. Robert Ford
President and Chief Operating Officer
Abbott

Dr. Wayne A. I. Frederick
President
Howard University

Dr. Julio Frenk
President
University of Miami

Dr. W. Kent Fuchs
President
University of Florida

The Honorable Patrick D. Gallagher
Chancellor
University of Pittsburgh

Dr. E. Gordon Gee
President
West Virginia University

Dr. Amy Gutmann
President
University of Pennsylvania

Ms. Marilyn Hewson
Executive Chairman of the Board
Lockheed Martin Corporation

Mr. Gregory P. Hill
President and Chief Operating Officer
Hess Corporation

Mr. G. Michael Hoover
Chief Executive Officer
Sundt Construction

Dr. Eric Isaacs
President
Carnegie Institution for Science

The Honorable Steven J. Isakowitz
President and Chief Executive Officer
The Aerospace Corporation

Rev. John I. Jenkins
President
University of Notre Dame

Robert E. Johnson Ph.D.
President
Western New England University

Mr. Edward Jung
Founder and CEO
Xinova, LLC

The Honorable Mark Kennedy
President
University of Colorado

Dr. Timothy L. Killeen
President
University of Illinois System

Dr. Laurie A. Leshin
President
Worcester Polytechnic Institute

Dr. Michael R. Lovell
President
Marquette University

Dr. Larry R. Marshall
Chief Executive
CSIRO

Dr. Ronald Mason, Jr.
President
University of the District of Columbia

Dr. Gary S. May
Chancellor
University of California, Davis

Mr. John C. May
Chairman and Chief Executive Office
Deere & Company

Mr. Sean McGarvey
President
North America's Building Trades Unions

Dr. Jonathan McIntyre
Chief Executive Officer
Motif FoodWorks, Inc.

Brig. Gen. John Michel
Director, Executive Committee
Skyworks Global

Mr. Jere W. Morehead
President
University of Georgia

Mr. Christopher Musselman
Head, U.S. Commercial Business
Palantir Technologies, Inc.

Omkaram Nalamasu, Ph.D.
President
Applied Ventures, LLC

Dr. Darryll Pines
President
University of Maryland, College Park

Michael T. Plehn, Lt. Gen, USAF
President
National Defense University

Mr. John Pyrovolakis
CEO
Innovation Accelerator Foundation

Mr. Dan Reed
Senior Vice President
Academic Affair
University of Utah

Dr. L. Rafael Reif
President
Massachusetts Institute of Technology

Mr. Rory Riggs
Managing Member
Balfour, LLC

Mr. Alex Rogers
President
Qualcomm

Mr. John Rogers
President and CEO
Local Motors

Dr. Rodney Rogers
President
Bowling Green State University

Mr. Clayton Rose
President
Bowdoin College

Dr. David Rudd
President
University of Memphis

Vice Admiral John R. Ryan
President and Chief Executive Officer
Center for Creative Leadership

Dr. Timothy D. Sands
President
Virginia Polytechnic Institute and State University

Dr. Edward Seidel
President
University Wyoming

Mr. Frederick W. Smith
Chairman and Chief Executive Officer
FedEx

Dr. Elisa Stephens
President
Academy of Art University

Dr. Elizabeth Stroble
President
Webster University

Dr. Kumble R. Subbaswamy
Chancellor
University of Massachusetts Amherst

Dr. Satish K. Tripathi
President
University at Buffalo

Dr. Marty Vanderploeg
Chief Executive Officer and President
Workiva

Dr. Adam S. Weinberg
President
Denison University

Dr. Kim A. Wilcox
Chancellor
University of California, Riverside

Dr. David Kwabena Wilson
President
Morgan State University

Dr. Wendy Wintersteen
President
Iowa State University

NATIONAL LABORATORY PARTNERS

Dr. Steven F. Ashby
Director
Pacific Northwest National Laboratory

Dr. Paul Kearns
Director
Argonne National Laboratory

Dr. Martin Keller
Director
National Renewable Energy Laboratory

Dr. Thomas Mason
Director
Los Alamos National Laboratory

Dr. James Peery
Director
Sandia National Laboratory

Dr. Mark Peters
Director
Idaho National Labs

Dr. Michael Witherell
Director
Lawrence Berkeley National Laboratory

Dr. Thomas Zacharia
Director

Oak Ridge National Laboratory

CORPORATE PARTNERS

HP Federal

Intel Corporation

PepsiCo, Inc

Philip Morris International

SparkCognition, Inc.

UNIVERSITY PARTNERS

The Texas A&M University System

University of California, Irvine

NATIONAL AFFILIATES

Dr. Dean Bartles
President & CEO
National Center for Defense Manufacturing and Machining

Mr. Jeffrey Finkle
President and CEO
International Economic Development Council

Ms. Sherry Lundeen
President
ARCS Foundation Inc.

Dr. David W. Oxtoby
President
American Academy of Arts and Sciences

Mrs. Sandra Robinson
President
IEEE-USA

FELLOWS

Mr. Bray Barnes, Senior Fellow
Director, Global Security & Innovative Strategies,
Washington, DC

Ms. Jennifer S. Bond, Senior Fellow
Former Director, Science & Engineering Indicators
Program, National Science Foundation

Dr. Thomas A. Campbell, Senior Fellow
Former National Intelligence Officer for Technology,
Office of the Director of National Intelligence

Dr. C. Michael Cassidy, Senior Fellow
Director, Emory Biomedical Catalyst, Emory
University

Ms. France Cordova, Distinguished Fellow
Former Director
National Science Foundation

Ms. Dona L. Crawford, Senior Fellow
President, Livermore Lab Foundation; and
Former Associate Director, Computation, Lawrence
Livermore National Laboratory

Mr. Paul Dabbar, Distinguished Fellow
Chairman and CEO
Bohr Quantum Technologies

Admiral James G. Foggo, USN (ret), Distinguished Fellow
Former Commander U. S. Naval Forces Europe
and Africa and Commander Allied Joint Force
Command, Naples, Italy

The Honorable Bart J. Gordon, Distinguished Fellow
Partner, K&L Gates LLP; and
Former United States Representative (TN)

Mr. Thomas Hicks, Distinguished Fellow
Principal, The Mabus Group; and Former
Undersecretary of the Navy, U.S. Department
of Defense

Dr. Klaus Hoehn, Distinguished Fellow
Former Senior Advisor—Innovation & Technology—
to the Office of the Chairman, and Vice President,
Advanced Technology & Engineering
Deere & Company

Dr. Paul J. Hommert, Distinguished Fellow
Former Director, Sandia National Laboratories; and
Former President, Sandia Corporation

Dr. Lloyd A. Jacobs, Distinguished Fellow
President Emeritus, The University of Toledo

Dr. Ray O. Johnson, Distinguished Fellow
Executive in Residence, Bessemer Venture
Partners; and Former Senior Vice President and
Chief Technology Officer, Lockheed Martin

The Honorable Martha Kanter, Distinguished Fellow
Executive Director, College Promise Campaign

The Honorable Andy Karsner, Distinguished Fellow
Executive Chairman, Elemental Labs

Mr. Dominik Knoll, Senior Fellow
Former Chief Executive Officer, World Trade Center
of New Orleans

The Honorable Steven E. Koonin, Distinguished Fellow
Director, Center for Urban Science and Progress,
and Professor, Information, Operations &
Management Sciences, Leonard N. Stern School of
Business, New York University; and Former Second
Under Secretary of Energy for Science, U.S.
Department of Energy

Mr. R. Brad Lane, Distinguished Fellow
Co-Founder & Chief Executive Officer, RIDGE-
LANE Limited

The Honorable Alan P. Larson, Distinguished Fellow

Senior International Policy Advisor, Covington & Burling LLP; and Former Under Secretary of State for Economics, U.S. Department of State

Mr. Alex R. Larzelere, Senior Fellow

President, Larzelere & Associates LLC; and Former Director, Modeling and Simulation Energy Innovation Hub, Office of Nuclear Energy, U.S. Department of Energy

Mr. Abbott Lipsky, Senior Fellow

Former Partner, Latham & Watkins LLP

Mr. Edward J. McElroy, Distinguished Fellow

Former Chief Executive Officer, Ullico, Inc.

The Honorable Julie Meier Wright, Senior Fellow

Former Chief Executive, San Diego Regional Economic Development Corporation; and Former First Secretary of Trade & Commerce, State of California

Mr. Mark Minevich, Senior Fellow

President, Going Global Ventures

Ms. Michelle Moore, Senior Fellow

Chief Executive Officer, Groundswell; and Former Senior Advisor to the Director, Office of Management and Budget, Executive Office of the President of the United States

Dr. Harris Pastides, Distinguished Fellow

President Emeritus, University of South Carolina

Dr. Luis M. Proenza, Distinguished Fellow

President Emeritus, The University of Akron

Ms. Kimberly A. Reed, Distinguished Fellow

Former Chairman of Board of Directors, President, and CEO, Export-Import Bank of the United States

Ms. Jody Ruth, Senior Fellow

CEO, Redstones

Mr. Reuben Sarkar, Senior Fellow

Former Deputy Assistant Secretary for Transportation, U.S. Department of Energy

Mr. Allen Shapard, Senior Fellow

Senior Director, Chair of Public Engagement Strategies, APCO Worldwide

Dr. Branko Terzic, Distinguished Fellow

Managing Director, Berkeley Research Group, LLC

Dr. Anthony J. Tether, Distinguished Fellow

Former Director, Defense Advanced Research Projects Agency, U.S. Department of Defense

Ms. Maria-Elena Tierno, Senior Fellow

Senior Business Development Manager, Constellation Energy

Dr. Thomas M. Uhlman, Distinguished Fellow

Founder and Managing Partner, New Venture Partners LLC

Dr. William Wescott, Senior Fellow

Managing Partner, BrainOxygen, LLC.

Mr. Olin L. Wethington, Distinguished Fellow

Founder, Wethington International LLC
Former Assistant Secretary for International Affairs, U.S. Department of the Treasury

Mr. David B. Williams, Senior Fellow

Monte Ahuja Endowed Dean's Chair, Dean of the College of Engineering, The Ohio State University

Dr. Mohammad A. Zaidi, Distinguished Fellow

Member, Strategic Advisory Board, Braemer Energy Ventures; and Former Executive Vice President and Chief Technology Officer, Alcoa, Inc.

Admiral James G. Foggo, USN (ret), Distinguished Fellow

Former Commander U. S. Naval Forces Europe and Africa and Commander Allied Joint Force Command, Naples, Italy

STAFF**Mr. William Bates**

Executive Vice President

Mr. Chad Evans

Executive Vice President

Ms. Marcy Jones

Special Assistant to the President & CEO and Office Manager

Ms. Patricia Hennig

Vice President for Finance

Ms. Yasmin Hilpert

Senior Policy Director

Mr. Timothy Planert

Policy Analyst

Dr. Roberto dos Reis Alvarez

Executive Director
Global Federation of Competitiveness Councils (GFCC)

Ms. Vanessa Rodrigues Puerta de Souza

Head of Operations (GFCC)


Ms. Simone Albuquerque Melo

Community and Communications Manager (GFCC)


Council on Competitiveness

900 17th Street, NW, Suite 700, Washington, D.C. 20006, T 202 682 4292

Compete.org

 @CompeteNow

 facebook.com/USCouncilonCompetitiveness

 linkedin.com/company/council-on-competitiveness/



Compete.

Council on
Competitiveness