MARY E. MAXON, PH.D.

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Professional Summary

Accomplished biosciences professional with a strong background in strategic planning, program development, and team management. Proven track record in overseeing large-scale research initiatives, managing multimillion-dollar budgets, and creating partnerships with diverse stakeholders. Expertise in domestic and international policy development and implementation and driving innovative solutions in the bioeconomy and synthetic biology fields.

Skills

- Flexible Leadership & Team Management
- Bioeconomy Strategy & Synthetic Biology
- Stakeholder Relations & Partner Building
- Strategic Plans & Programs Development
- Coordination & Operational Oversight
- Academic Publishing & Report Writing
- Collaboration & Performance Metrics
- Scientific & Technological Advancement

Work History

Executive Vice President 11/2024 ongoing

Carnegie Science

- Augmenting Carnegie's leadership team during a period of transition through executive management and scientific strategic planning experience to developing a path of financial sustainability and a more strategic, integrated scientific excellence.
- In partnership with Carnegie's leadership team, develop and execute the near-term plan for Carnegie's future biological and environmental sciences co-location in Pasadena.

Strategic Advisor 07/2024 ongoing

California Institute of Technology

- Advising on establishment of a state-of-the-art biopolicy effort at the Linde Center for Science, Society, and Policy
- Co-organizing dissemination events for the July 2024 report: Policy Recommendations for Regulation of Engineered Microbes

Executive Director 02/2024 to 07/2024

Schmidt Sciences

- Shaped and led the new Biosciences Institute and its team.
- Implemented leadership strategies and executed science philanthropy standard practices to improve organizational effectiveness.
- As part of the small leadership team, helped launch the new science philanthropy startup established in February 2024.

Executive Director 08/2022 to 02/2024

Schmidt Futures

- Led the BioFutures program and oversaw strategy implementation and award-making activities.
- Developed and implemented organizational approaches to enhance operational efficiency and achieve objectives.
- Hired and supervised employees, assuring alignment with organizational goals and promoting a productive work environment.

Senior Fellow 08/2021 to 08/2022

Schmidt Futures

- Launched and co-led the BioFutures Program to effectively translate synthetic biology advances into economic and public benefits.
- Co-authored a national-scale bioeconomy strategy based on input from over 200 bioeconomy stakeholders.
- Co-designed and co-led the Task Force on Synthetic Biology and the Bioeconomy.

Associate Laboratory Director for Biosciences 07/2017 to 08/2021

Lawrence Berkeley National Laboratory – Berkeley, CA

- Managed the Biosciences Area, approximately 800 staff members, and an annual budget of $200 million effectively.
- Assisted groundbreaking discoveries through Berkeley's world-class User Facilities and complementary research programs.
- Facilitated collaboration among scientists and engineers to advance biosciences research.

Biosciences Principal Deputy 04/2015 to 06/2017

Lawrence Berkeley National Laboratory – Berkeley, CA

- Designed and implemented program development strategies to address national challenges in energy and environment.
- Performed research and activities focused to contribute to a fundamental understanding of essential bioscience processes.
- Designed and led the successful recruitment of the Director of the Joint Genome Institute, an $80+M DOE User Facility.

Executive Director 08/2014 to 12/2014

Science Philanthropy Alliance – Berkeley, CA

- Developed the first strategic plan, which was approved by the Science Philanthropy Alliance board in December 2014.
- Led the organization through initial strategic planning phases, setting a foundation for future growth and development.

Additional Work History

Head, Biosciences Strategic Planning and Development – Lawrence Berkeley National Laboratory – 09/2012 to 07/2014

Assistant Director for Biological Research – Office of Science and Technology Policy, Executive Office of the President – 12/2010 to 08/2012

Marine Microbiology Initiative Lead – The Gordon and Betty Moore Foundation, Palo Alto, CA – 01/2007 to 08/2012 (on leave 2009-2012)

Deputy Executive Director – President's Council of Advisors on Science and Technology, Office of Science and Technology Policy, Executive Office of the President – 08/2009 to 12/2010

Deputy Vice Chair – California Institute for Regenerative Medicine, San Francisco, CA – 12/2004 to 12/2006

Associate Director & Anti-infective Program Leader – Cytokinetics, Inc., South San Francisco, CA – 07/2004 to 12/2004

Senior Program Leader: Anti-infective Program – Cytokinetics, Inc., South San Francisco, CA – 06/2001 to 06/2004

Scientist II – Microbia (now Ironwood Pharmaceuticals Inc.), Cambridge, MA – 02/2001 to 06/2001

Scientist I – Microbia (now Ironwood Pharmaceuticals Inc.), Cambridge, MA – 01/1999 to 02/2001

Postdoctoral Fellow – Laboratory of Ira Herskowitz, Ph.D., Department of Biochemistry and Biophysics, University of California, CA – 03/1995 to 01/1999

Associate Scientist, Department of Biochemistry – Roche Institute of Molecular Biology, Nutley, NJ – 02/1986 to 08/1990

Laboratory Technician – Wadsworth Center, New York State Department of Health, Albany, NY – 12/1984 to 12/1986

Awards & Certifications

- Elected AAAS Fellow, Societal Impacts of Science and Engineering, American Association for the Advancement of Science – 2020
- Recipient of Berkeley Lab's Women@TheLab Award – 2018
- Recipient of Berkeley Lab's Director's Award for Exceptional Achievement – 2014
- The first recipient of the OSTP Award for Excellence – 2012
- Helen Hay Whitney Foundation Postdoctoral Research Fellowship – 1995 to 1998
- American Cancer Society Postdoctoral Fellowship – 1998 to 1999

Education

University of California, Berkeley, CA, 1994

Ph.D, Department of Molecular and Cell Biology

Thesis – Cloning and characterization of the human transcription factor IIE

State University of New York, Albany, NY 1984

Bachelor of Science in Biology and Chemistry

Publications and Articles

- Marken, J.P., Maxon, M.E., and Murray, R.M. "Policy Recommendations for the Regulation of Engineered Microbes for Environmental Release." Linde Center for Science, Society and Policy, Caltech. June 2024. doi: 10.57959/bgny-v542
- Dietz, T., et al. Bioeconomy Globalization: Recent Trends and Drivers of National Programs and Policies. 2024. doi: http://dx.doi.org/10.2139/ssrn.5023374
- C. Patermann, et.al. One Planet-Bioeconomy Solutions for Global Challenges. 2023. doi: 10.34734/FZJ-2023-04481
- Maxon, M.E. "Racing to Be First to Be Second: A bioeconomy that delivers environmental, economic, and social benefits requires a coordinated regulatory framework." Issues in Science & Technology, 2023. doi: 10.58875/vdtr1008
- Schmidt, E. Maxon, M., Hodgson, A."Why America's Futures Depends on the Bioeconomy." RealClear Politics, April 2022.
- Hodgson, A., Alper, J., Maxon, M.E., "The US Bioeconomy: Charting a Course for a Resilient and Competitive Future." Industrial Biotechnology, 2022. doi: 10.1089/ind.2022.29283.aho
- Hodgson, A., Alper, J., Maxon, M.E. "The U.S. Bioeconomy: Charting a Course for a Resilient and Competitive Future." Schmidt Futures, New York, NY, 2022. doi: 10.55879/D2HRS7ZWC.
- National Academies of Sciences, Engineering, and Medicine "Physics of Life." Washington, DC: The National Academies Press. 2022, doi: https://doi.org/10.17226/26403
- Friedman, D.C., et.al. "Building a Bottom-up Bioeconomy." Issues in Science and Technology, 2022. DOI
- Rejeski, D., & Maxon, M.E. "Bioengineering the Future." The Environmental Forum, 2021, 38(2), 37-45.

- Frisvold, G.B., Moss, S., Hodgson, A., & Maxon, M.E. "Understanding the U.S. Bioeconomy: a new definition and landscape." Sustainability, 2021, 13, 1627. https://doi.org/10.3390/su13041627
- Wood-Charlson, E. M., et al. "The National Microbiome Data Collaborative: enabling microbiome science." Nature Reviews Microbiology, 2020, 18(6), 313-314. https://doi.org/10.1038/s41579-020-0377-0
- National Academies of Sciences, Engineering, and Medicine. "Safeguarding the Bioeconomy." Washington, DC: The National Academies Press. 2020, doi: https://doi.org/10.17226/25525
- Maxon, M.E. "Getting a PhD in a STEM field is a great start to a winning career." Molecular Biology of the Cell, 2019, 30(21). doi: https://doi.org/10.1091/mbc.E19-04-0219
- Payne, S., Maxon, M., Casadevall, A., & Sanchez-Lanier, M. "Strengthening the 'Ph' in the Ph.D.: The Role of Professional Societies in Graduate Training." American Society for Microbiology, 2017, https://www.ncbi.nlm.nih.gov/books/NBK549989/ doi: 10.1128/AAMCol.Nov.2017
- Kitney, R., et al. "Enabling the Advanced Bioeconomy through Public Policy Supporting Biofoundries and Engineering Biology." CellPress, 2019, 37(9), 917-920. doi: https://doi.org/10.1016/j.tibtech.2019.03.017
- National Academies of Sciences, Engineering, and Medicine. "Graduate STEM Education for the 21st Century." Washington, DC: The National Academies Press. 2018, doi: https://doi.org/10.17226/25038
- Maxon, M., & Alberts, B. "Science for state legislatures." Science, 2018, 360(6384), 9. doi: 10.1126/science.aat7661
- Alberts, B., Gold, B.D., Martin, L., & Maxon, M. "Opinion: How to bring science and technology expertise to state governments." Proc. Natl. Acad. Sci. USA , 2018, 115(9), 1952-1955. doi: https://doi.org/10.1073/pnas.1800543115
- National Academies of Sciences, Engineering, and Medicine. "Preparing for Future Products of Biotechnology." Washington, DC: The National Academies Press. 2017, doi: https://doi.org/10.17226/24605
- Blaser, M.J., et al. "Toward a Predictive Understanding of Earth's Microbiomes to Address 21st Century Challenges." mBio, 2016, 7(3), e00714-16. doi: 10.1128/mBio.00714-16
- Alivisatos, A.P., et al. "A unified initiative to harness Earth's microbiomes." Science, 2015, 350(6260), 507-508. doi: 10.1126/science.aac8480
- Maxon, M.E. "Synthetic biology: How best to build a cell. Agree on a definition." Nature, 2015, 509(7499), 155-157. doi:10.1038/509155a
- White House, Executive Office of the President, Office of Science and Technology Policy "National Bioeconomy Blueprint." Washington, D.C. 2012
- Maxon, M.E. "Winning the Future with Women & Girls." Genetic Engineering & Biotechnology News, 2012, 32(5). https://www.genengnews.com/insights/winning-the-future-with-women-girls/ https://doi.org/10.1089/gen.32.5.01
- Field, D., et al. "Omics Data Sharing." Science, 2009, 326(5950), 234-236. doi: 10.1126/science.1180598
- Chua, P.R., et al. "Effective killing of the human pathogen Candida albicans by a specific inhibitor of non-essential mitotic kinesin Kip1p." Molecular Microbiology, 2007, 65(2), 347-362. doi: https://doi.org/10.1111/j.1365-2958.2007.05787.x
- Bennett, R.J., et al. "Nuclear fusion occurs during mating in Candida albicans and is dependent on the KAR3 gene." Molecular Microbiology, 2005, 55(4), 1046-1059. doi: https://doi.org/10.1111/j.1365-2958.2005.04466.x
- Askenazi, M., et al. "Integrating transcriptional and metabolite profiles to direct the engineering of lovastatin-producing fungal strains." Nature Biotechnology, 21, 150-156. doi: https://doi.org/10.1038/nbt781
- McBride, H.J., et al. "The protein kinase Pho85 is required for asymmetric accumulation of the Ash1 protein in Saccharomyces cerevisiae." Molecular Microbiology, 2003, 42(2), 345-353. doi: https://doi.org/10.1046/j.1365-2958.2001.02601.x

- Maxon, M.E., & Herskowitz, I. “Ash1p is a site-specific DNA-binding protein that actively represses transcription.” Proc. Natl. Acad. Sci. USA, 2001, 98(4), 1495-1500. doi: 10.1073/pnas.98.4.1495
- Maxon, M.E. “Cloning and Characterization of the Human Transcription Factor TFIIE.” Doctoral dissertation, University of California at Berkeley Press, 1994
- Maxon M.E., & Tjian R. “Transcriptional activity of transcription factor IIE is dependent on zinc binding.” Proc. Natl. Acad. Sci. USA, 1994, 91(20), 9529-9533. doi:10.1073/pnas.91.20.9529
- Maxon, M.E., Goodrich, J.A., & Tjian, R. “Transcription factor IIE binds preferentially to RNA Polymerase IIa and recruits TFIIH: a model for promoter clearance.” Genes & Dev. 1994, 8, 515-524. doi: 10.1101/gad.8.5.515
- Peterson, M. G, et al. “Structure and functional properties of human general transcription factor IIE.” Nature, 1991, 354, 369-373. doi: https://doi.org/10.1038/354369a0
- Maxon, M.E., Wigboldus, J., Brot, N., & Weissbach, H. “Structure-function studies on Escherichia coli MetR protein, a putative prokaryotic leucine zipper protein.” Proc. Natl. Acad. Sci. USA, 1990, 87(18), 7076-7079. doi: 10.1073/pnas.87.18.7076
- Cai X.Y., Maxon M.E., Redfield B., Glass R., Brot N., Weissbach H. “Methionine synthesis in Escherichia coli: effect of the MetR protein on metE and metH expression.” Proc Natl Acad Sci U S A. 1989 Jun; 86(12):4407-11. doi: 10.1073/pnas.86.12.4407. PMID: 2543976; PMCID: PMC287278.
- Maxon M.E., Redfield B., Cai X.Y., Shoeman R., Fujita K., Fisher W., Stauffer G., Weissbach H., Brot N. “Regulation of methionine synthesis in Escherichia coli: effect of the MetR protein on the expression of the metE and metR genes.” Proc Natl Acad Sci U S A. 1989 Jan; 86(1):85-9. doi: 10.1073/pnas.86.1.85.
- Cai, X. Y., Redfield, B., Maxon, M. E., Weissbach, H., Brot, N. “The effect of homocysteine on MetR regulation of metE, metR, and metH expression in vitro.” Biochem Biophys Res Commun. 1989, 163(1), 79-83. doi:10.1016/0006-291x(89)92101-3
- Shoeman, R.L., Maxon, M.E., Coleman, T., Redfield, B., Brot, N. and Weissbach, H., 1988. “The Biochemistry and Molecular Biology of the Terminal Reactions of Methionine Biosynthesis in Escherichia coli.” In The Roots of Modern Biochemistry (pp. 447-455). Gruyter.

Testimonies

United States Congressional Testimony:

- Maxon, M.E. (2020). Biological Research at The Department of Energy: Leveraging DOE’s Unique Capabilities To Respond To The Covid-19 Pandemic. https://science.house.gov/hearings/biological-research-at-the-department-of-energy-leveraging-does-unique-capabilities-to-respond-to-the-covid-19-pandemic
- Maxon, M.E. (2018). National Laboratories: World-leading Innovation in Science, Committee on Science, Space, and Technology, U.S. House of Representatives. https://science.house.gov/imo/media/doc/Maxon%20Testimony.pdf
- Maxon, M.E. (2015). The Future of Biotechnology: Solutions for Energy, Agriculture, and Manufacturing, Subcommittee on Research and Technology, Committee on Science, Space and Technology, U.S. House of Representatives. https://science.house.gov/imo/media/doc/Maxon%20Testimony%20and%20Bio.pdf

United Kingdom Oral Evidence:

- Maxon, M.E. (2024). Engineering Biology, UK Parliament Science and Technology Committee https://committees.parliament.uk/work/8377/engineering-biology/

Boards & Committees & Organizations

- National Science Foundation Biological Sciences Advisory Committee - Current
- National Security Commission on Emerging Biotechnology, staff designee to Commissioner Eric Schmidt – Current
- National Academies of Sciences, Engineering, and Medicine, Committee on Biotechnology Capabilities for National Security Needs – Current
- Scientific Advisory Council Forschungszentrum Jülich – Current
- Carnegie Institution for Science, Board of Trustees – Current
- International Advisory Council of the Global Bioeconomy Summit – Current
- Economic Cooperation and Development's Biotechnology, Nanotechnology, Convergence Technologies Working Party, U.S. Delegate – Current

    Co-authored OECD Publications:

    - Carbon Management: Bioeconomy and Beyond (2023) OECD Publishing, Paris. https://doi.org/10.1787/b5ace135-en
    - Collaborative Platforms for Emerging Technology: Creating Convergence Spaces (2021) OECD Publishing, Paris. https://doi.org/10.1787/ed1e030d-en
    - Times of Crisis and Opportunity (2021) OECD Publishing, Paris. https://doi.org/10.1787/75f79015-en
    - Innovation Ecosystems in the Bioeconomy (2019) OECD Publishing, Paris. https://doi.org/10.1787/e2e3d8a1-en

- Diversity, Equity, and Inclusion Senior Leadership Committee, Berkeley Lab – ended 2021
- American Association for the Advancement of Science Committee on Science, Engineering, and Public Policy, Chair – ended 2021
- Executive Sponsor, Lambda Alliance Employee Resource Group, Lawrence Berkeley National Laboratory – ended 2021
- National Academies of Sciences, Engineering, and Medicine, Committee: Safeguarding the Bioeconomy – ended 2020
- National Academies Board on Life Sciences – ended 2020
- Carnegie Institution for Science, Advisory Committee – ended 2019
- Governor's Precision Medicine Advisory Committee – ended 2019
- California Science Policy Fellows Advisory Committee – ended 2019
- National Academies of Sciences, Engineering, and Medicine, Committee: Revitalizing Graduate STEM Education for the 21st Century – ended 2018
- National Academies of Sciences, Engineering, and Medicine, Committee: Preparing for Future Products of Biotechnology – ended 2017
- Academic Committee of the California Initiative to Advance Precision Medicine – ended 2017

Patents

Available upon Request