

Bigelow | Laboratory for Ocean Sciences

Vice President for Research

This Leadership Profile is intended to provide information about Bigelow Laboratory for Ocean Sciences and the position of Vice President for Research. It is designed to assist qualified individuals in assessing their interest.

The Opportunity Overview

Bigelow Laboratory for Ocean Sciences invites inquiries, nominations, and applications for the position of Vice President for Research (VPR). The significance of this leadership position and Bigelow Laboratory's work are heightened by growing recognition that the global environment and both terrestrial and marine ecosystems are increasingly stressed. Bigelow researchers address critical issues of climate change, ocean health, seafood solutions, and sustainability and the health of the planet by investigating marine microorganisms, how they affect global ocean processes, and how these processes are being impacted by changing environmental conditions. Many of the complex biochemical and geophysical processes that govern our living planet remain a mystery. Basic and applied research conducted by Bigelow Laboratory not only advance our knowledge of the Earth system, but also provides practical solutions to the pressures human civilization applies to life on Earth.

Founded in 1974, Bigelow is an independent scientific laboratory with a global reach and an outstanding international reputation in ocean sciences. Bigelow scientists are at the forefront of groundbreaking research from the Arctic to the Antarctic regions, from the ocean surface to below the ocean floor. Bigelow's impact is belied by its relatively small size and enhanced by its independence and ability to work worldwide on some of the most important global issues of our time.

Bigelow's VPR will be a passionate and articulate advocate for its science. They will direct and guide the strategy and operations for the institution's research and innovation. They will provide administrative support, research guidance, and constructive counsel on research and proposal strategy to scientists at Bigelow to foster individual and institutional excellence.

The core strength of Bigelow is its scientific community, working in a highly collegial atmosphere, supported by committed management, staff and its board of trustees. Bigelow is home to a new, state-of-the-art research and educational complex, in a stunning setting in East Boothbay, Maine. The Bigelow campus features a LEED-certified Platinum laboratory complex, an energy-efficient residential facility for visiting students and scientists, a deep-water dock, all supported by renewable (solar) energy.

As a 501(c)(3) nonprofit organization, Bigelow is at the same time a scientific laboratory, educational institution, public benefit corporation, and business. A Ph.D. or other terminal degree from an accredited institution in a relevant discipline is required.

For information regarding how to express candidacy or to make a nomination for this position, please see the section "Procedure for Candidacy" near the end of this document.

The Role of the Bigelow Vice President for Research

Bigelow has a rich history of executive collaboration with the senior research scientists (SRSs) in managing the laboratory. The SRSs are responsible for securing research grants and other revenue-generating (commercial and institutional) projects for their respective laboratories. Still, as an independent entity, the laboratory must function as a self-sustaining, integrated business as well, with a 501(c)(3) charitable status. With over 110 employees, this puts a premium on strong listening skills, a collaborative management style, efficient allocations of time and assets, and institutional entrepreneurial behavior. The SRSs have a vital role to play in sustaining the financial stability of the laboratory, and the VPR needs to encourage and support them in this endeavor.

The senior management Executive Team currently includes the president and CEO and three vice presidents – the vice president for education, the vice president for strategic alliances and advancement, and the vice president for research. It also includes the Director of Human Resources, the Chief Financial Officer, the Chief of Staff, and the Chief Communications Officer.

Currently the vice presidents for research and education hold appointments as SRSs, with an approximately 50/50 split in duties between laboratory administration and science. The vice presidents for research and education are broadly responsible for the research and educational activities of the laboratory respectively, although the SRSs have primary responsibility for developing, implementing, and funding the research. Bigelow is open to the next vice president of research continuing to maintain a research program or serving in the role full time. The successful candidate will have to make the case for whatever approach they would like to implement if hired.

Key objectives, responsibilities and related concepts that define the VPR's job include:

- Maintain and enhance Bigelow's excellence, scope, relevance, and use of its basic and applied research; ensure Bigelow's commitment to the highest ethical scientific standards.
- Represent the laboratory with knowledge, skill, and aplomb in diverse scientific, ocean policy, academic, and commercial forums throughout the world.
- Help recruit and retain world-class SRSs; support their work externally and internally while leading these individuals to support cross-disciplinary projects to achieve the strategic goals of the laboratory, including identified applied research priorities and diversification of revenue sources.
- Provide informed leadership and inculcate an entrepreneurial culture to further the commercial aspirations of the laboratory, and support the acquisition of resources to provide marketing, business and financial planning, intellectual property and technology transfer services, contract development, operations management, and other functional

skills to support this type of work.

- Provide vision and executive leadership to diversify Bigelow's portfolio of agencies and foundations to support the research enterprise.

Opportunities and Expectations for Leadership

Bigelow is in the enviable position of having an outstanding reputation for its science, while functioning as a relatively small, independent laboratory with a culture of collaborative management, especially with the SRSs. This attracts scientists who do cutting-edge research and function as entrepreneurs to secure funding for and manage their laboratories. They value their independence and the opportunity to participate in management of the laboratory. Consequently, there is a robust structure of internal staff committees covering many of the functions of the laboratory. This asset of Bigelow needs to be protected and nourished.

At the same time, governmental research budgets and other market forces make it imperative for Bigelow as an institution to act more entrepreneurially, specifically by diversifying its sources of research funding, to include new government agencies and additional foundations; forming new cross-disciplinary teams; and generating a greater share of its total revenues from commercial activities, including fee for service income, sale of products (e.g., algae strains), and technology transfer. The current funding environment requires translating the laboratory's work to capitalize on these new opportunities.

Promote Excellence in Ocean Sciences Research

The VPR will continue to build a research enterprise and an esprit de corps that strives for the highest levels of achievement in microbial ocean sciences by working at the cutting edge of research. The highest quality of Bigelow research and commercial products and services remains a chief priority of the laboratory. The VPR will advocate for the resources and design and implement the processes and procedures to maintain excellence in scientific output through proposals, publications, reports, and other research and development products.

Enhance Research Reputation and Visibility

As part of Bigelow's Executive Team (see organizational chart at end of document), the VPR will work collaboratively to bring greater recognition and prominence to the Laboratory. They will advocate regionally, nationally, and internationally for the ocean and related sciences and the many societal benefits of Bigelow's distinctive research and technology development.

Champion Transparency, Diversity, and Inclusion

Bigelow is committed to diversity and inclusion of all scientists, staff, and students. The VPR must continue to inspire and motivate staff at all levels while also recruiting and retaining a diverse and talented workforce. Given the many demographic and societal changes taking place

nationally and internationally, the president must also be attentive and sensitive to ensuring an organizational culture of openness, fairness, and transparency that celebrates a diversity of thought and expression and that promotes an environment of tolerance, acceptance, and inclusion. The VPR must lend personal authority and passion to these efforts and ensure strong, consistent, and transparent communications and collaborations across the enterprise.

Bigelow Laboratory's Guiding Principles

The foundation of our success is built on adherence to our guiding institutional principles:

1. We believe that transformative science is like great art and thrives in an environment where creativity is valued and scientists are continually challenged.
2. We believe there is power in embracing the full diversity of humanity to advance science and are committed to supporting each other as individuals worthy of respect.
3. We encourage every person, in every position, to continually learn, improve, and innovate.
4. We are nimble and do not allow process or precedent to hinder the best possible science.
5. We embrace our students' ability to challenge our perceptions and strive to empower our students to think critically and aim high.
6. We invest in basic research and recognize its proven value in long-term progress and discovery.
7. We continually strive to find ways our science can be utilized to benefit society.
8. We communicate our findings and their importance broadly.
9. We recognize that any science will only reach its full potential if it leverages tools and ideas from other disciplines.
10. We accept risk and believe that if we never fail, we aren't reaching high enough!

Bigelow Laboratory for Ocean Sciences Overview

Bigelow's vision is to be a leading global ocean research and education institution, with an increasing array of commercial activities, generating beneficial outcomes for society through increased knowledge of marine ecosystems.

Founded in 1974, Bigelow is distinguished by remarkable continuity of leadership, and a new, state-of-the-art research and educational complex, in a stunning setting in East Boothbay, Maine. The Bigelow campus features a 60,000 square foot LEED-certified Platinum wet laboratory complex, an energy-efficient residential and visiting scientist facility, a deep-water dock, a greenhouse and renewable (solar) power. The campus also includes a seawater suite that provides a continuously flowing seawater system with the capability to replicate ocean conditions in six controlled 2,400L mesocosms. A 3,000 square foot greenhouse has been constructed to produce larger (pre-commercial) quantities of algae strains with promising beneficial applications and also includes a maker space and fabrication lab. The lab also maintains a high-performance computing cluster with extensive memory, storage space, bandwidth and networking capabilities that allow it to handle a diverse range of scientific data processing needs.

As important as these physical assets are, the core strength of Bigelow is its scientific community, working in a highly collegial atmosphere, supported by committed management, staff, and its Board of Trustees.

Bigelow's work is guided by a series of five-year strategic plans, with the current version covering the years 2020-2025. (The current plan can be found here: [Bigelow Strategic Plan](#).) The laboratory pursues its three core functions (research, education and commercial applications of its knowledge) via a cross-disciplinary and collaborative approach.

Bigelow offers the same expertise, experience, and equipment used by its scientists to other academic, commercial, and government working partners to help advance research, enhance discoveries, and facilitate commercial applications to solve today's complex problems and create new products. The laboratory has four Discovery Centers that provide a wide range of advanced services to meet customer needs. They include:

- The **National Center for Marine Algae and Microbiota (NCMA)** receives, maintains, and distributes globally living cultures of marine and freshwater algae and bacteria. This National Center has been designated by the World Intellectual Property Organization as an International Depository Authority providing long term secure storage of valuable biological materials. NCMA's mission is to serve as a public bioresource facility whose core activity is to maintain, curate and distribute living cultures of marine and freshwater algae, protozoa, and bacteria; to provide technical expertise and services to user groups; and to provide educational resources for culture isolation and curation to scientists, educators, and professional researchers domestically and worldwide.
- The **Single Cell Genomic Center (SCGC)** is the first fee-based facility in the world offering microbial single cell genomics services. Single cell DNA sequencing, pioneered by scientists at Bigelow Laboratory, reads the genomic blueprints of the most fundamental units of life without the need for cultivation. This approach is used to analyze biochemical properties, evolutionary histories and biotechnology potential of uncultured microorganisms, which are thought to constitute over 99% of biological diversity on Earth. Furthermore, single cell genomics offers a radical new view of infections, symbioses, grazing, gene transfer, and consortia formation in natural microbial communities. SCGC makes single cell genomics technology accessible to the broad research community and serves as an engine for discoveries in microbial ecology, evolution, bioprospecting, and human health.
- **Bigelow Analytical Services** offers expert state-of-the art analytical services to public and private entities. The laboratory was the first in the nation to be approved by the U.S. Food and Drug Administration to conduct quantitative biotoxin analysis to determine shellfish food safety, which is now available to clients worldwide. Although there is an array of instrumentation within the facility, the key projects that are currently outwardly facing are those associated with the shellfish biotoxins paralytic shellfish poison (PSP), amnesic shellfish poisoning (ASP), and diarrhetic shellfish poisoning (DSP).

- **The Center for Aquatic Cytometry** pioneered the use of flow cytometry for aquatic sciences. This multi-user facility, is dedicated to applying new technologies to the study of algae and aquatic microbes from marine and freshwater ecosystems. Scientists from around the world use the facility for development of new applications and stains, routine cell counting, cell sorting, and aquatic flow cytometric training. The Center provides state-of-the art space for the latest cytometric instruments, imaging technologies, and applications.

The laboratory also has two Impact Centers that work to facilitate the translation of research to Solutions. These Centers bring together multiple research disciplines and specialties to match the best available science and technology with the interests of investors, shareholders, and consumers.

- The **Center for Seafood Solutions** has catalyzed interdisciplinary research at the national and international level, become an integrated partner of the regional aquaculture industry, and attracted significant philanthropic and federal funds to address climate change. The Center's goal is to partner with stakeholders around the globe to put our science to work in helping to feed Earth's growing population without destroying the oceans.
- The **Center for Algal Innovations** is a new Impact Center launched in 2021 to enable research and develop pathways by which microalgae and macroalgae can contribute to a more sustainable society while lowering our carbon footprint. The mission of CAI is to leverage value from the NCMA algal collection and genetic resources, connect and support researchers and entrepreneurs, accelerate innovation and the translation of knowledge in order to foster growth of a sustainable, and ecologically sound algal value pyramid in Maine, the U.S. and internationally. Bigelow CAI seeks to streamline the processes necessary for the scientific discovery and subsequent commercialization of the natural and engineered products of the marine microbiome, which are often seen by aspiring innovators as prohibitively complex and untenable.

Finally, Bigelow's has recently launched two new initiatives:

- **Tandy Center for Ocean Forecasting (developed under the Big Data Initiative)** utilizes the explosion of available marine data and builds capacity for citizens to collect, access, and interact with marine data through real-time ocean forecasting programs. The Center will catalyze new scientific advancements in cutting-edge forecasting technologies, and convene citizen scientists and students through educational and monitoring activities. This will include a centralized system where users can find and contribute data, interact, and launch new outreach and forecasting programs. The Center is designed to be flexible and expandable to include forecasts of a wide range of ecological phenomena as data become available, and to quickly spin up new forecasts as environmental issues arise in the Boothbay Region and beyond.
- The **Water Health and Humans Initiative's** goal is to support economic growth while preventing excess nutrient, harmful algal blooms, and contaminants in Maine's coastal ocean and lakes — sparing Maine the chronic water quality and harmful algae issues that plague other states. The center will focus on Maine but be applicable to the world

Qualifications and Responsibilities

While no one candidate will embody every quality, the successful candidate will bring many of the following professional qualifications and personal characteristics. We welcome creative approaches to fulfill these duties, including the addition of staff support.

Qualifications:

- PhD and familiarity conducting research related to Bigelow's mission
- 10 years of increasing level of responsibility for oversight of research
- High level of integrity and discretion
- Comfort with managing many complex projects and ability to prioritize
- Strong mentoring, team-building, and collaborative management skills

Detailed responsibilities for the position:

1. Provide strategic support for research activities and mentor SRSs on research, sources of funding, and grant applications
2. Serve as Authorized Organizational Representative (AOR) for grants, which includes formulating and carrying out all pre- and post-award policies and procedures for basic sponsored research projects
3. Coordinate, review when necessary, and act as de facto program officer for internally funded programs
4. Develop and maintain research partnerships and communications with partners on large research awards
5. Maintain a high level of research integrity at the laboratory, including the following duties:
 - Serve as co-chair of the institutional Compliance Committee
 - Ensure compliance with FAME building restrictions
 - Ensure IACUC compliance
 - Develop and monitor export controls
 - Work with VPE and HR to ensure research compliance
6. Communicate closely with, and build and maintain a partnership with Bigelow's Advancement division, including maintenance of large philanthropic awards
7. Participate in the administration and governance at Bigelow, including chairing or serving on several institutional committees such as compliance, budget, and commercialization
8. Serve as supervisor for approximately two thirds of the SRSs and research scientists at the lab
9. Review and help develop the research portion of the annual budget in partnership with the CFO, Budget Committee, and individual PIs

Additional skills related to tech transfer that would be highly valued:

1. Skill and substantial experience in supporting institutional technology transfer, including facilitating the process of recognizing the commercial potential of scientific research and the process necessary to create successful commercial services and products, proven business

- acumen, and a keen sense of marketing and branding
2. Ability to promote and support a culture of innovation, including the following duties:
 - Work with legal counsel to review NDA's, IP agreements, MOUs, and as needed, work with attorneys on various documents including patent processing and filings
 - Maintain iEdison account under NIH
 3. Willingness to oversee business development relationships
 4. Experience with new technologies and social media, and an openness to new and innovative methods of outreach, communication, and collaboration

East Boothbay, Maine

East Boothbay is located within the Boothbay Harbor region, nestled on the rocky coast of Maine, just 166 miles north of Boston. The region is comprised of several small towns, each with their own individual character and charm: Boothbay, Boothbay Harbor, East Boothbay, Edgecomb, Newcastle, Southport and Wiscasset, offering a balance between simple and sophisticated, and work and play.

Located within a reasonable commuting distance of most major Maine cities, this mid-coast peninsula offers a balance between small town coastal charm and urban accessibility. With one of the best boating harbors north of Boston, the area has long been the home to fishermen and sea captains and has attracted the notice of top-notch marine biologists as well.

The Boothbay peninsula is also home to outdoor enthusiasts and nature lovers, botanists, gardeners, artists, merchants and entrepreneurs. Many non-profit organizations call this region home and work hard to further their missions in support of the arts, seamanship and marine education, conservation, historic preservation and more.

The region's main sources of commerce are shipyards, fishing, tourism and providing services for summer residents and retirees. Boothbay's popularity as a vacation and retirement destination has helped the region remain vital, while maintaining its Down East charm.

Boothbay offers endless possibilities of things to see and do including water activities, botanical gardens, nature preserves, golf, unique shops, restaurants and art galleries and cultural activities including concerts, bands and theater performances.

Residents of Boothbay are friendly and warm and the environment is conducive to raising a family. Boothbay's year-round population is approximately 3,500 and rises to 60,000 in the summer months.

To learn more, see [Boothbay Harbor](#) or download the digital guidebook at [Boothbay Harbor Digital Guidebook](#).

Procedure for Candidacy

Candidate materials should be submitted to [our online application portal](#).

Inquiries and nominations should be directed to president and CEO Deborah Bronk or any member of the search committee (see next page for list and contacts).

To apply for the position, please provide the following documents in a single PDF:

- CV
- Cover letter that describes how you would approach the position
- Statement of interest that includes the following sections (5 pages max):
 - Ways the candidate will promote diversity, equity, and inclusion at Bigelow
 - Research management, mentoring, and philosophy statement
 - Expertise and experience dealing with state and federal agencies
 - Experience with compliance and grant management
 - Tech transfer expertise, experience, and aspirations (optional)

The position will remain open until filled. For initial consideration, materials should be received by January 1, 2023.

Bigelow Laboratory is an inclusive community of scientists from around the world that welcomes and supports diverse opinions and cultures. Bigelow Laboratory for Ocean Sciences strives to maintain an environment that allows our employees to flourish through respectful, inclusive, and equitable treatment of others. We believe there is power in embracing the full diversity of humanity to advance science and are committed to supporting each other as individuals worthy of respect. Bigelow Laboratory is an Equal Opportunity/Affirmative Action Employer.

Bigelow Laboratory for Ocean Sciences requires that all employees be fully vaccinated against COVID-19. Being fully vaccinated means that an individual is at least two weeks past their final dose of an authorized COVID-19 vaccine regimen. As a condition of employment, newly hired employees will be required to provide proof of their COVID-19 vaccination.

Bigelow Vice President for Research Search Committee

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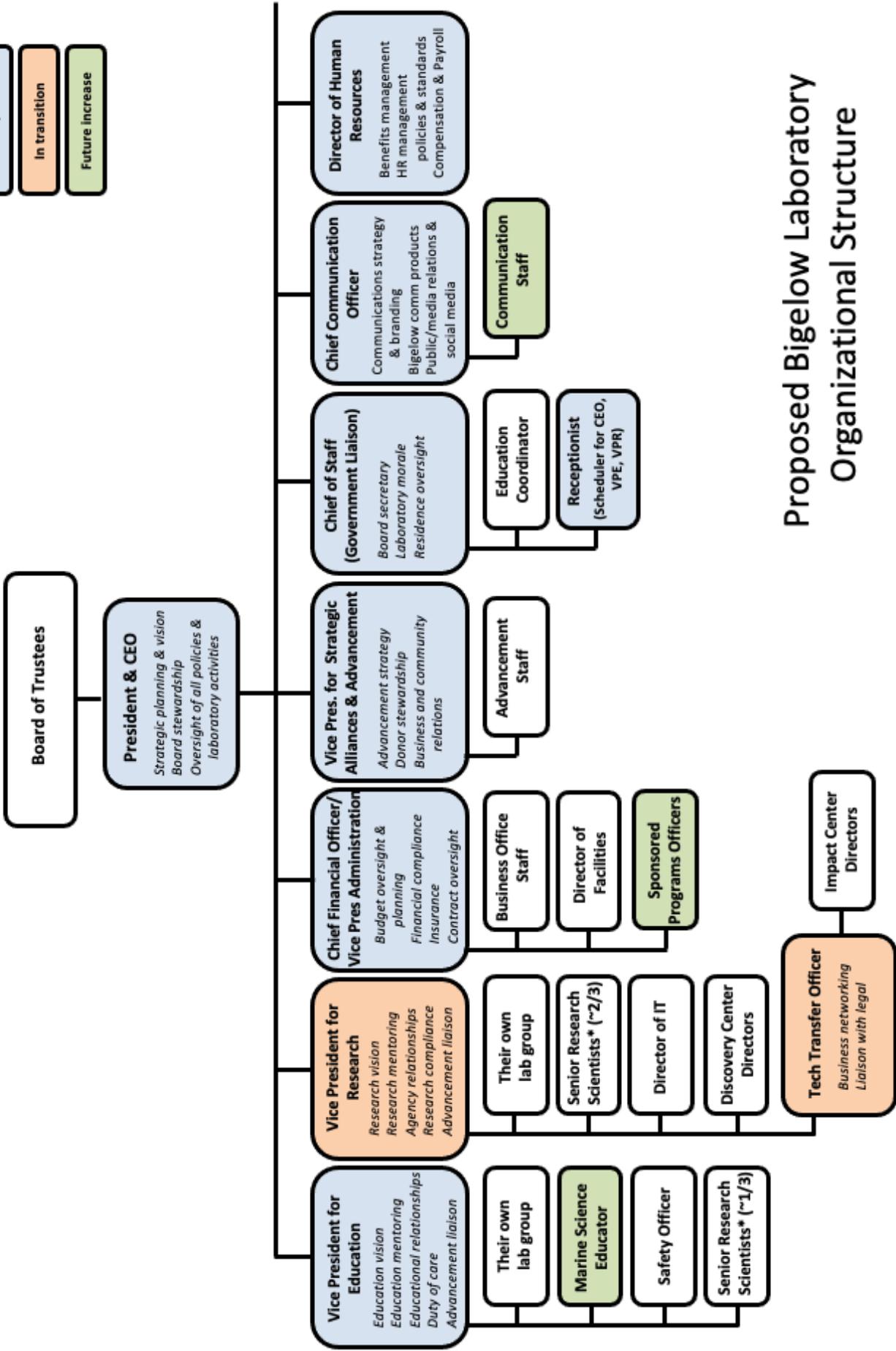
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- Current position
- In transition
- Future Increase



Proposed Bigelow Laboratory Organizational Structure