

Strategic Alliances Strategies and Processes Benchmarking Study

June 2009

NASA Johnson Space Center

**Space Life Sciences Directorate
Advanced Planning Office**

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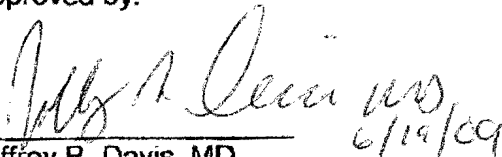


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1.0 Executive Summary

An essential component of the Johnson Space Center (JSC) vision and the Space Life Sciences Directorate (SLSD) Strategy is the creation of alliances and collaborations to drive innovation. To best position the Center and the Directorate to successfully engage in these partnerships, the SLSD and JSC Advanced Planning Office jointly conducted a benchmark to assess how best to identify, establish, and manage alliances. The best practices and critical success factors presented in this report demonstrate how various organizations effectively use alliances and collaborations to achieve their strategic goals.

All benchmark participants use alliances and collaborative opportunities to facilitate and improve the quality of innovation, enhance their portfolios by supplementing internal core capabilities with external capabilities, and remain competitive. Alliances may also be leveraged to address risk sharing, financial, and knowledge management challenges.

Creating a culture that promotes collaborative innovation is essential to developing and managing successful alliances. Senior management commitment is critical to establish this collaborative culture and drive effective alliance strategy. The strategic approach should include establishing a unifying vision for the organization, aligning the alliance strategy with the organizational strategy, and clearly defining alliance objectives and processes.

Additional factors critical to success include creating a unifying vision for the partnership with clear, common objectives; recognizing and emphasizing the importance of communication, trust, and relationship management; developing and implementing a deliberate process to analyze gaps, identify and evaluate prospective partners, and manage the alliance; and creating an infrastructure with dedicated resources for alliance support.

Recommendations for effective alliance development and management for the Center include developing a JSC alliance strategy; broadly communicating the strategy and encouraging a culture that embraces teamwork, inclusion, and relationship management; and promoting the value of a JSC portfolio that balances externally acquired capabilities with internal core capabilities.

The JSC strategy should address alliance management processes and support systems; a recognition and reward system that values both collaborative innovation and individual accomplishments; evaluation and implementation of collaborative innovation methods and techniques; and facility development.

In addition to implementing Center strategies and processes, the Space Life Sciences Directorate will develop and execute a deliberate system for pursuing life sciences alliances and collaborative innovation opportunities; create and encourage a culture where calculated risks are embraced; and enhance communication of the directorate and alliance strategies and collaborative innovation successes internally, and human system portfolio gaps externally.

2.0 Background

“One man may hit the mark, another blunder; but heed not these distinctions. Only from the alliance of the one, working with and through the other, are great things born.”

Antoine de Saint-Exupery

The vision for the Johnson Space Center (JSC), as stated by the Center Director, Mike Coats, is to “Lead the International Community in the Human Exploration of Space.” An essential component of the JSC leadership is tied to our ability to create alliances, collaborations, and partnerships. While the majority of collaborations established in the past have been to leverage capabilities within the Center for an external organization, JSC now seeks to build new partnerships and leverage resources outside the Center in pursuit of its vision.

The Space Life Sciences Directorate (SLSD) identified establishing alliances as key to driving innovation in its May 2007 Strategy. This approach is aimed at creating a balanced portfolio which supplements internal core capabilities with externally acquired resources and capabilities to most effectively and efficiently achieve its mission of optimizing human health and productivity for space exploration.

3.0 Approach

The purpose of this benchmark, a joint SLSD and JSC Advanced Planning Office effort, is to assess best practices in identifying, establishing, and maintaining alliances to inform the creation of alliance strategies for the Center and the Directorate. Identification of potential partners and collaborative innovation opportunities is a secondary goal. Benchmark results presented in this report demonstrate how various organizations use strategic alliances and collaborations to facilitate innovation and achieve their goals.

Benchmark participants are presented in Attachment 1. This group was down-selected from a larger group of organizations recognized as leaders in alliance creation and management by their peers through professional associations such as the Association of Strategic Alliance Professionals, and/or were known to JSC personnel. Representative organizations from the corporate, government, and academic sectors were included in the study to provide us with a diverse set of best practices from which to draw our recommendations.

To set benchmark partner expectations, guide the benchmark discussion, and assist in evaluation of data gathered, categories of alliances best practices and a set of specific questions for each category were developed and are presented in Attachment 2: Benchmark Criteria. This benchmark criteria matrix was developed on the basis of a literature review and personal interviews (see Attachment 3: References). A detailed analysis of key findings/responses by benchmark participant category is presented as Attachment 4, and Section 4.0 summarizes best practices and lessons learned.

Final recommendations for the Center and specific recommendations for SLSD are presented in Section 5.0. These recommendations were drawn from benchmark participant

best practices considered to have the best fit with the JSC organization. In addition, recommendations were supplemented by the literature, personal interviews, and a Harvard Business School MBA student project on *Leveraging Collaborative Innovation at NASA Space Life Sciences* (see Attachment 3: References).

4.0 Key Findings, Critical Success Factors, and Best Practices

4.1 Key Findings

Why collaborate? All benchmark participants use alliances and collaborative opportunities to facilitate and improve the quality of innovation, enhance their portfolios by supplementing internal core capabilities with external capabilities, and remain competitive (whether for profit or to compete for funding). Collaboration and alliances may also be used to address multiple additional challenges including:

- Efficient, cost effective way to find innovative solutions
- Risk sharing
- Enhancing capabilities in the face of flat budgets
- Addressing technical challenges in a rapidly changing environment
- Market development and growth
- Leveraging brand name
- Knowledge transfer

4.2 Critical Success Factors

A detailed analysis of key findings/responses by benchmark participant category is presented in Attachment 4. Section 4.3 describes benchmark partner best practices in strategies and planning for alliances; processes and practices for identifying and evaluating potential partners and establishing alliances; and managing and maintaining productive alliances.

Critical success factors for identifying, establishing, and managing best practices in priority order may be summarized as:

- Identifying and managing cultural issues within the organization and with the alliance partner—never underestimate the impact of culture on an alliance
- Senior management commitment and support
- Creating a unifying vision for both partners, aligning alliance strategy with organizational strategy, and clearly defining goals and objectives
- Recognizing and emphasizing the importance of communication, trust, and relationship management
- Conducting annual planning that includes a strategy/gap analysis to provide the basis for identifying and evaluating potential alliances and new products
- Using a deliberate process for identifying and evaluating prospective partners and developing an optimal alliance agreement
- Establishing a win-win agreement with clear guidance regarding reviews and follow-up
- Creating an infrastructure with dedicated resources to identify, establish, and manage alliances
- Some organizations also recommended:
 - Establishing individual performance planning incentives, and aligning incentives between the partnering organizations

- Using metrics to evaluate alliance success and improve alliances processes
- Co-locating internal groups in different divisions and providing state-of-art facilities to effectively attract collaborators and encourage partnerships
- Soliciting annual survey and critique of the alliance by the partner

4.3 Best Practices

4.3.1 Strategies and Planning for Successful Alliances

Key to planning and executing successful alliances and collaborations is embedding the alliances strategy into the overall strategic planning process of the organization. The more integrated this process is, the more adept the organization becomes at identifying the right partners, efficiently and effectively establishing the alliance, and successfully managing a productive partnership.

“Culture eats strategy for breakfast”

Charles O’Reilly
Stanford Business School

Benchmark participants universally agreed that the most critical aspect to developing and managing successful alliances is creating a culture that promotes collaborative innovation, and further emphasized that senior management commitment and support is essential to establishing this collaborative culture and driving effective alliance strategy.

To optimize the value of alliances, the strategy should include a unifying vision for the organization, aligning the alliance strategy with the organizational strategy, and clearly defining alliance objectives. A key question to ask during the planning cycle is “can we get there faster with a partner than by ourselves?” Addressing how to manage cultural issues and relationships are critical components of the strategy. It is recommended that alignment of the alliance plan with division/business unit/sector strategy and objectives be periodically reviewed to assess consistency and address issues.

The annual planning process must also include a gap analysis of core capabilities/core competencies to provide the basis for identifying and evaluating potential alliances and new products or research deliverables. Most organizations use a mix of internal experts and external consultants to identify gaps and assess opportunities to achieve the most informed and objective outcome.

The ability to effectively develop and manage alliances is considered to be a core competency by many organizations with successful alliances, and managing the alliance is generally considered to be the most challenging competency. Development and support of these capabilities should be addressed in the alliance strategy.

Once an alliance opportunity and partner have been identified, the resulting collaboration plan must reflect a win-win arrangement where the benefits to both

parties are identified. For the agreement to be successful, a very clear set of objectives consistent with the overall strategy should be specified and assessed periodically. The deal can be strengthened significantly by inviting the partner to jointly develop the collaboration plan.

Establishing a performance plan that defines how an individual, team, and the organization contribute to collaborative innovation and the overall strategy, and that rewards those who engage in collaboration, is important. In addition, incentives between the two partnering organizations should be aligned. For research organizations, embracing a culture that promotes collaborative discovery and innovation, encouraging self-formed collaborations and data sharing, and valuing and rewarding collaboration more than individual publications optimizes innovation.

4.3.2 Processes and Practices for Identifying and Evaluating Potential Partners and Establishing Alliances

Thorough preparation is key to identifying the best partner and establishing an effective alliance. The strategic alliance process should be used to understand the need for partnerships, select the right partners, and design an optimal partnering model. Specific best practices and processes for identifying and evaluating potential partners and establishing alliances vary among benchmark participants, but all agree that having dedicated resources to accomplish these tasks greatly facilitates the process and contributes to the success of the resulting partnership.

Benchmark participants use a variety of methods to identify prospective partners to address gaps and meet strategic objectives, including:

- proactive outreach using internally or externally provided databases
- person to person contact based on personal relationships
- person to person contact through meetings held at partnering conferences and association or other national/international meetings
- employing dedicated scouts who are part of a competitive intelligence department to find new opportunities
- using a relational database customized to collect information on prospective opportunities and partners
- advertising gaps/needs/alliance opportunities through websites, proposal solicitations, and development and licensing meetings held specifically for this purpose
- providing facilities/campuses designed to attract and facilitate collaborative innovation
- using web-based technology/service providers to look for entities for collaboration, and mapping who and what technologies are in the marketplace
- targeting prospective alliance partners through a compiled list of specialists
- evaluating unsolicited opportunities received from potential partners

It is recommended that prospective partners be assessed on multiple dimensions including strategic, cultural, operational, and brand fit. Strategic fit, including having a common vision, values, principles, and goals are of particular importance, while differences in culture can be leveraged and embraced if properly addressed.

Each partner should be able to bring something to the table that the other organization does not have to complement internal core capabilities. As previously mentioned, the agreement must be win-win—an alliance will only be successful if there is significant value creation for both parties.

It is important to address principles of alliance management when discussions with prospective partners are first initiated, including principles for decision making and how to resolve issues that may arise. Building trust so that each partner feels comfortable with the other and understands and supports the alliance goals is critical. Partners must be willing to share sensitive information, and be able to admit what they don't do well for the strongest alliance to be developed.

Best practices for establishing a successful alliance include:

- Establishing a deliberate process for identifying and evaluating prospective partners.
- Involving the right people, and including people at all levels: those with decision making authority are essential. Additionally, direct management, executive sponsorship, discipline experts/project managers, and a dedicated team of lawyers who are determined to make the alliance work.
- Building the relationship from the start: partners must treat each other as equals and acknowledge expectations and cultural differences. Tough negotiations can result in solid relationships, therefore it is important to remember that eagerness to cooperate weakens the negotiation position, and over-promising reduces the chance of success.
- Creating a win-win strategy: identify the key principles of cooperation prior to the formal negotiation. A common strategic vision and definition for success is critical. Partners should agree on the scope and time horizon; align strategic objectives, risk, rewards, and incentives; and discuss termination. Some organizations establish a joint steering committee to carry out these tasks.
- Defining responsibilities and obligations for alliance participants at all levels, including a process for dispute resolution.

Best practices specific to research applications include:

- Using a mixed model approach to fund research that includes both traditional proposal solicitations and collaborative methods.
- Employing collaborative innovation techniques such as the Sandpit process (a forum where a diverse group of scientists from a range of disciplines immerse themselves in a collaborative process aimed at developing innovative solutions and preparing research proposals) to facilitate innovation.
- Involving the widest community possible through the use of the Crowdsourcing Model, which uses an undefined, generally large group of

people or community in the form of an open call to perform a task, or other techniques based on the notion of simultaneous discovery.

- Soliciting input from top scientists to help identify potential synergistic technologies/innovations for a particular theme.
- Involving scientific liaisons/technical experts to coordinate the scientific assessment and evaluate whether the opportunity is best pursued as a collaborative or an internal effort.

4.3.3 Best Practices for Managing and Maintaining Productive Alliances

Successful alliances require effective planning, active follow-through, and management at all levels and stages of the process. Clear guidance for reviews and follow-up in the alliance agreement is essential. Optimally, alliance capabilities are completely integrated in a deliberate process that addresses strategies, tools and processes; alliance champions; management and support organizations; and best practices including metrics.

The three most common reasons identified by benchmark participants for failed alliances are differences in culture that are not adequately addressed, breakdowns in communication resulting in lack of trust, and incompatible objectives between partners. Effective process management, communications and relationship management, and organizational support are critical to successfully addressing these challenges.

Process Management

Key elements of the management phase include managing the alliance according to the collaboration plan, evaluating alliance performance against objectives, assessing the success of the partner relationship, effectively addressing issues that arise, and identifying potential risks and follow-on opportunities. Including one or more managers on the management team that had been involved in the establishment phase will facilitate a smooth transition to operations.

As previously mentioned, benchmark participants identified addressing cultural issues, and doing it early and often, as critical to creating and managing successful alliances. Internally this requires acknowledging that no one organization can know/discover everything itself, eliminating the "not invented here" syndrome, establishing a collaborative culture, and communicating the benefits of collaborative innovation throughout the organization.

Equally important is addressing the cultural differences between the collaborating organizations. This does not translate to trying to change the culture of either partner. What is needed instead is development and execution of a plan aimed at understanding, managing, and leveraging these differences to ensure a productive and successful alliance.

Because the effectiveness of the organization and the success of alliances depend heavily on the involvement and support of senior management, a management

review of plans, milestones, and the status of alliances and key alliance deliverables should be conducted on a regular basis. This review should address strategy (is the alliance achieving its strategic goals?), finance (is the alliance meeting its financial metrics?), operations (are alliance operations working as planned?), and relationships (are relationships helping or hindering the alliance, and how can they be maintained or improved if necessary?).

To successfully manage an alliance there must be a balance between trust and control, and a well-developed governance system with representatives from both parties to achieve this balance. When strategies are aligned and objectives have been jointly defined, partners can work together productively and avoid the need for separate dispute resolution processes. Maintaining an acute awareness of obligations, addressing them early, and anticipating needs optimizes alliance management.

Periodic assessment of the success of the partnership and identification of areas for improvement was recommended by most benchmark participants. Various approaches included conducting periodic internal exchanges regarding alliances lessons learned, using an internal confidential survey tool customized for each alliance to identify opportunities for improvement, surveying how partners view the success of the alliance, and providing annual (or more frequent) training on alliance capabilities.

Some organizations use the Bell Mason Framework (<http://www.bellmasongroup.com/framework/>) to manage and evaluate alliances. This methodology involves a stage-gated framework and rules-based methodology for managing risk and charting the course for new initiatives, and for the organizational structure that manages broader innovation initiatives including alliances.

Communication and Relationship Management

“Trust comes by foot and goes by horse” (one ill advised email can disrupt an entire alliance)

A benchmark partner

All alliances are personal and all take time. Mistrust and poor communication can doom an otherwise promising partnership. Benchmark participants agree that communication and relationship management are critical components in establishing and maintaining successful alliances. A strong focus on relationships, communicating openly and with candor, having mutual respect, and agreeing upon processes and who has decision rights from the start are essential.

Effective communication is also important to understanding differences between the partners and making an effort to address them to make the alliance work. Some organizations build in social time/activities to encourage collaboration between partners, and/or conduct periodic conferences to engage stakeholders and assure their needs are being met.

To successfully maintain an alliance from an internal perspective, it is very important to communicate early and throughout the process to avoid conflicts with existing

organizations, and ensure all understand that the partnership is a benefit and not a competition. Holding internal town hall meetings for idea sharing, communication of plans, soliciting feedback, publicly celebrating collaborative successes, and actively seeking new ways to enhance existing strategic alliances encourages a collaborative culture.

Lastly, relationships should not be based upon a single point of contact, it is recommended that they be spread throughout the organization at all levels so that if principle contacts change, the organization can transition and continue to sustain the alliance. It is important to build both executive links and a contact network so that there are multiple touch points in the relationship to create a cohesive alliance.

Organizational Support and Infrastructure

A significant barrier to forming and managing alliances is a lack of dedicated resources to successfully bring two different groups together and manage the differences in strategies, processes, and organizations. Often the people involved in alliances also have day to day jobs and are tasked to work on the alliance in addition to these responsibilities; a dedicated alliance support function can be essential to success when this is the case.

In addition to facilitating internal integration and providing needed capabilities, dedicated alliance resources can improve knowledge management within the organization and enhance external visibility.

Benchmark partners differed in how they structured dedicated resources; some used a centralized function, others employed a distributed model, and some used a hybrid approach. However, all agreed that dedicated support resources are critical to effectively establishing and managing alliances regardless of the organizational structure. Further, most offered that having a dedicated set of lawyers who are invested in trying to figure out how to make the alliance work is the most important factor from a resource perspective.

Various models include:

- A centralized support infrastructure that may involve safety, quality, legal, and a pool of resources for special projects, and a dedicated operations team to execute alliances.
- A distributed structure with an alliance integration leader who is responsible for integrating support and technical/business entities, managing the collaboration relationship, and ensuring adherence to the alliance agreement.
- A dedicated alliance management group to manage the alliance relationship and oversee compliance with the agreement, with a project management group to handle the day to day activity and manage the technical relationships.
- A multi-functional alliance office that provides resources to support alliance development and management across the organization, including developing and improving alliance capabilities, providing alliance expertise and

experience, engaging directly with managers and/or technical experts to develop alliances, and assessing and communicating best practices.

Multiple benchmark partners also cited the use of facilities as an important factor in attracting collaborators and encouraging partnerships. Co-locating partners and/or prospective collaborators and providing state-of-the-art facilities with intentionally large work spaces eliminates boundaries and forces sharing, which encourages collaboration and stimulates innovation.

5.0 Recommendations

Recommendations for effective alliance development and management for the Center and the SLSD based on benchmark participant best practices and recommendations are presented in the sections below.

5.1 Recommendations for the Johnson Space Center

- Develop a JSC Alliance Strategy which establishes a culture of collaborative innovation, guides alliance pursuits, and defines alliances goals and objectives to address the following elements.
- Demonstrate senior leadership commitment by broadly communicating the strategy, encouraging a culture that embraces teamwork, inclusion, and relationship management, and promoting the value of a JSC portfolio that balances externally acquired capabilities with internal core capabilities.
- Establish alliance management processes for:
 - Aligning alliance, Center, and direct line organization (DLO) strategies
 - Developing and assessing achievement of management goals specifically related to collaboration and innovation
 - Conducting gap analyses of strategies/core capabilities to identify opportunities for alliances and collaborations using a mix of internal experts and external consultants
 - Streamlining existing partnership agreement processes and developing new alliance agreement models
 - Assessing, developing, and improving alliance capabilities and processes, including metrics for achieving both alliance goals and alliance progress (leading indicators)
 - Interacting/seeking approval with NASA Headquarters as required
- Create alliance management and support functions which provide dedicated resources to effectively select, hire, and develop people to establish and manage alliances using a hybrid approach which includes:
 - A centralized office for core functions: legal, technology transfer, business development, organizational development (including training), alliances development, and communication
 - Decentralized support in DLOs for technical capability, champions, relationship management
 - Assessment of partnerships with other NASA centers and/or hiring contract partners as a preliminary step
- Create a recognition and reward system that values both collaborative innovation and individual accomplishments, and identify alliances capabilities, relationship management, and collaborative innovation as core competencies.
- Evaluate various collaborative innovation methods and techniques to determine optimal models for JSC applicability, for example:
 - Enhanced innovation watch (matching problem solvers with portfolio gaps)
 - Expanded incentive prize offerings
 - Increase transparency/improve communication of innovation needs/gaps

- Consider facility development
 - Innovation center/technical campus arrangements such as with University of California on the NASA ARC site
 - Co-location of expertise

5.2 Recommendations Specific to the Space Life Sciences Directorate

In addition to the Center-wide recommendations presented above, the following activities and best practices are recommended for the SLSD.

- Develop and execute a deliberate system for pursuing life sciences alliances and collaborative innovation opportunities
 - Conduct a research and technology development (R&TD), operations, and process gap analysis, and map to collaboration modes that best suit the SLSD strategy and capabilities
 - Evaluate the success of collaborative innovation techniques employed by other R&TD organizations (Sandpit, Crowdsourcing, etc.)
 - Seek funding for open collaboration pilot projects
- Create and encourage a culture of teamwork where calculated risks are embraced
 - Identify and address cultural, organizational, and functional silos
 - Develop and manage two cultures
 - Parent organization, risk averse, “failure is not an option”
 - New organization, risk tolerant, “fail forward, fail fast, fail often”
- Enhance promotion of SLSD strategy, alliance strategies, and collaborative innovation successes internally, and human system portfolio gaps externally
- Create a recognition and reward system aligned with the Space Life Sciences Strategy that values both collaborative innovation and individual accomplishments

Attachment 1: Benchmark Participants

Corporate participants

- Baxter Healthcare
- GE Healthcare
- Genentech, Alliance management and Portfolio Planning
- Google
- Merck Research Laboratories
- Philips, Corporate Strategies and Alliances
- Wyeth Pharmaceuticals

Government agencies/other NASA centers

- National Institute of Standards and Technology
- National Science Foundation, Biological Sciences Directorate
- NASA Ames Research Center¹
 - Office of the Center Director, Institutions and Management
 - Office of the Center Director, University R&D/ University Affiliated Research Center
 - New Ventures and Communications Directorate
 - Space Biosciences Division, Science Directorate
 - Earth Science Division, Science Directorate
 - NASA Advanced Supercomputing Division
 - Aeronautics Test Program

Academic institutions:

- University of Michigan Life Sciences Institute
- University of Texas M.D. Anderson Cancer Center

Northrop Grumman, Business Development; DARPA, Space and International Support Activities; and the European Space Agency, Washington, DC Office were also targeted as benchmark partners. However, interviews conducted with each indicated that they did not actively pursue or manage external alliances to achieve goals. Since the intent of the benchmark was to assess alliances best practices, their responses were not addressed in the report or included in Attachment 3: Benchmark Analysis: Key Findings by Participant Category.

- Northrop Grumman primarily engages in traditional procurement relationships rather than collaborative partnerships.
- DARPA generally does not pursue partnerships to achieve their mission of investing in the development of high-risk, high-pay out technologies.
- ESA alliances strategies and best practices are aimed primarily at maintaining relationships within the ESA alliance rather than achieving strategic goals.

¹ While a total of seven NASA Ames Research Center offices were interviewed, they are considered to be one organization in the final tally of Attachment 4: Key Findings by Benchmark Participant Category. The Center's alliance philosophy was developed and promoted from the top down and was consistent among all offices interviewed.

Attachment 2: Strategic Alliances Benchmarking Criteria

Goal: *To capitalize on strategic alliances best practices and lessons learned to effectively leverage external resources and expertise for achieving NASA's goals for human space exploration*

| Strategies for establishing alliances | Processes and practices for identifying and evaluating potential alliance partners and establishing alliances | Best practices for managing and maintaining productive alliances | Best practices for identifying and implementing new ways to work together in an established alliance | Ways for creating and managing expectations for alliances with NASA |
|--|--|--|--|--|
| <ol style="list-style-type: none"> 1. Why are alliances important to you? 2. What was the strategy and motivation behind your decision to pursue a particular alliance? 3. How do you balance between the pursuit of company strategies with the unexpected requests for alliances from other organizations? 4. How do you map the alliance strategy to the corporate strategy? 5. What is the linkage between the corporate strategy organization and the alliance organization? (are they one and the same organization?) | <ol style="list-style-type: none"> 1. Do you have a different process for alliances created for access to technology, extending corporate capabilities, extending market access or political purposes? 2. How do you determine the scope of an alliance (what is included/not) What is most valuable when you establish an alliance? 3. How do you identify prospective partners? 4. What criteria do you use for selecting potential partners? 5. What do you value the most when you choose a partner? (is it one thing or case dependent?) 6. How do you determine how much to invest in this process? 7. Do you have a specific group assigned to do this? 8. Are alliances identified established and maintained at various levels of the organization? 9. Did you need to change your culture to establish this alliance? | <ol style="list-style-type: none"> 1. How do you balance the economics of alliances with the political, cultural, organizational, human considerations? 2. How do you make your alliance succeed? 3. What do you think is most valuable to maintaining an alliance? 4. How does the alliance get embraced by all levels of the organization? 5. Did you need to change your culture to maintain this alliance? 6. What are the most demanding elements of an alliance? 7. What is the process for making decisions in an alliance re: new issues? 8. What are your criteria for success? 9. Why do alliances succeed / fail? 10. Do you have a different process for maintaining alliances depending on the purpose for which they were created? | <ol style="list-style-type: none"> 1. Do you try to find new ways to yield benefits/create new value in existing alliances? 2. How do you do this (approach)? 3. How do you manage relationships among various alliances/ partners? | <ol style="list-style-type: none"> 1. Have you worked with NASA and/or other federal agencies in an alliance (or otherwise)? 2. How do other organizations perceive NASA as a prospective partner? 3. What can NASA do to create a favorable environment for establishing alliances? 4. Who else would you recommend that we benchmark with on this topic? |

Attachment 3: References

1. Garg, Vivek, Dave Munichiello, and Rich Urman, "*Leveraging Collaborative Innovation at NASA Space Life Sciences*," Harvard Business School MBA Project, 2009.
2. Pisano, Gary P., and Roberto Verganti, "Which Kind of Collaboration Is Right for You?" *Harvard Business Review*, 2008.
3. Gomes-Casseres, Benjamin, personal interview, Feb 2008.
4. Lahkani, Karim R., and Jill A. Panetta, "The Principles of Distributed Innovation," *Research Publication No. 2007-7*, *The Berkman Center for Internet and Society at Harvard Law School*, Oct 2007.
5. Hughes, Jonathan, and Jeff Weiss, "Simple Rules for making Alliances Work," *Harvard Business Review*, 2007.
6. Huston, Larry and Nabil Sakkab, "Connect and Develop: Inside Procter & Gamble's New Model for Innovation," *Harvard Business Review*, Mar 2006.
7. Bamford, James D., Benjamin Gomes-Casseres, and Michael S. Robinson, "*Mastering Alliance Strategy, A comprehensive Guide to Design, Management, and Organization*", 2003.
8. Dyer, Jeffrey H., Prashant Kale, and Harbir Singh, "How to Make Strategic Alliances Work," *MIT Sloan Management Review*, Vol. 42 No. 4, Summer 2001.
9. Moss Kanter, Rosabeth, "Collaborative Advantage: The Art of Alliances," *Harvard Business Review*, July-August, 1994.

Attachment 4: Benchmark Analysis: Key Findings by Participant Category

The following elements, in priority order, were identified by benchmark participants as critical to attracting partners and successfully managing alliances².

1. Identifying and managing cultural issues (both within the organization and addressing the partner's culture)
 - 100% of participants
2. Support of senior management
 - 100% of participants
3. Aligning alliance strategy and goals with corporate/institution strategy and conducting a gap analysis to target collaboration opportunities
 - 100% of participants
4. Emphasizing communication, trust, and relationship management
 - 100% of participants
5. Establishing a win-win agreement
 - 100% of corporate participants
 - 66% of government agencies
 - 0% of academic institutions
6. Providing infrastructure/dedicated resources to identify, establish, and manage alliances
 - 100% of corporate participants
 - 33% of government agencies
 - 100% of academic institutions
7. Providing clear guidance regarding reviews and follow-up of alliance agreement
 - 100% of corporate participants
 - 0% of government agencies
 - 50% of academic institutions
8. Employing an active search/scouting mechanism to identify prospective partners
 - 80% of corporate participants
 - 33% of government agencies
 - 100% of academic institutions
9. Co-locating and providing state-of-art facilities to effectively attract collaborators and encourage partnerships
 - 40% of corporate participants
 - 66% of government agencies
 - 50% of academic institutions
10. Using metrics to evaluate alliance success and improve alliance processes
 - 80% of corporate participants
 - 0% of government agencies/NASA centers:
 - 50% of academic institutions

² The seven NASA Ames Research Center offices interviewed are considered to be one organization