MANUAL ON STARTING AND OPERATING A RESEARCH CENTER

GEORGIA INSTITUTE OF TECHNOLOGY

GEORGIA TECH RESEARCH CORPORATION

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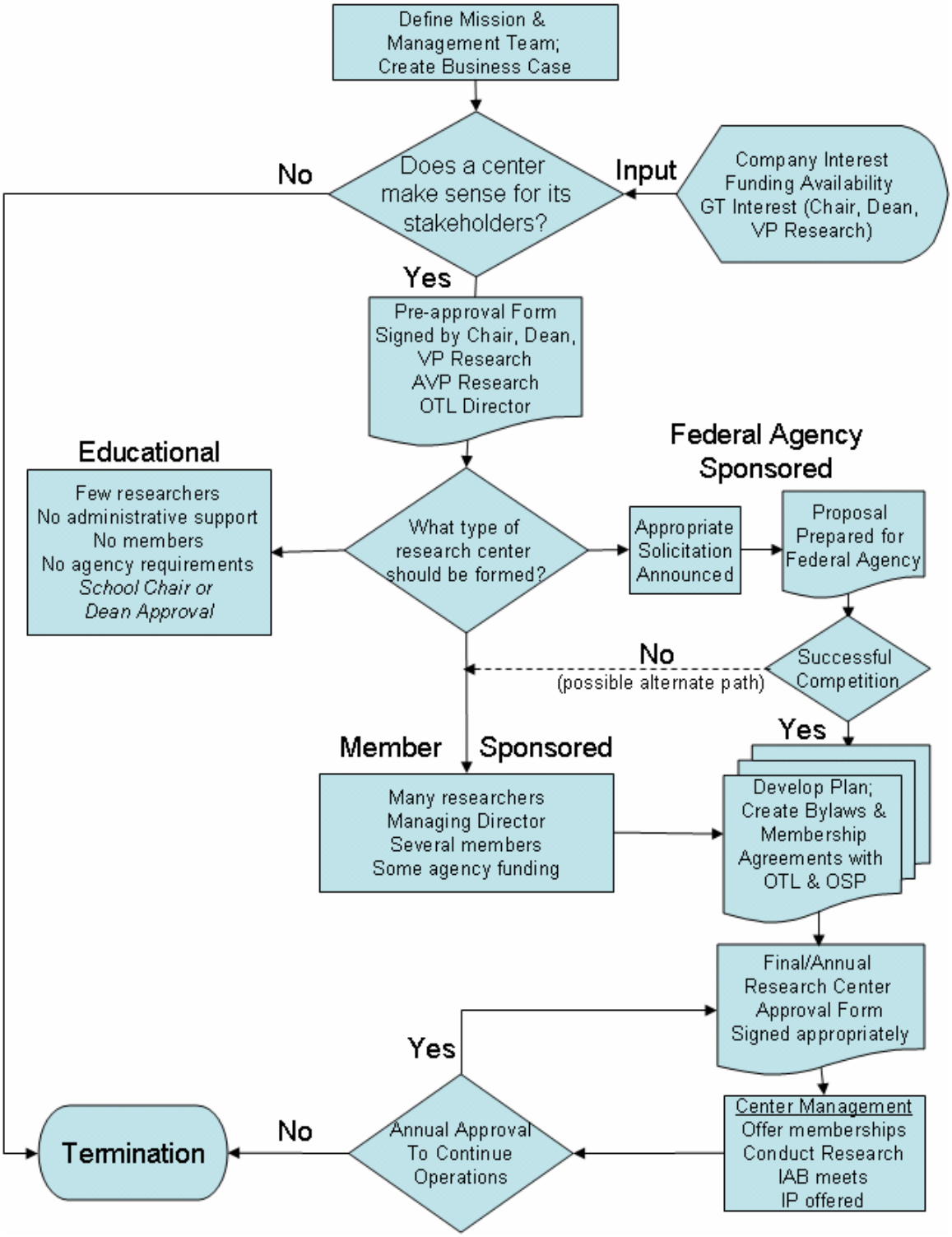
EXECUTIVE SUMMARY

This manual was developed to provide a resource for those interested in starting a new research center with industry memberships, as well as for current center directors and management of research centers with industry memberships. The process for starting such a center is described along with approval procedures. The section on research center operations provides ideas and best practices for organizational structure, financial management, industry relations, marketing and advisory boards. For those developing proposals for federally-sponsored research centers with industry memberships, some suggestions on education, outreach & diversity, and knowledge transfer and commercialization programs that may wish to be considered are included in the appendices. Special cases such as partnering with other universities to form centers and the "Umbrella Center" concept are noted and discussed.

Industry membership level structures, member benefits, and intellectual property expectations for research centers with industry memberships as significant components are described in detail. Templates for bylaws and membership agreement documents are provided. Definitions, FAQs, and other resources are also supplied.

A process for initial and annual renewal approvals for research center operations is proposed. In several cases at universities around the country, the process for center membership renewals has not been clear or may have lapsed, resulting in accounts receivable items that are not collected, damage to industry-university relations and causing the university's budgets to fall into disarray. Many other misunderstandings regarding member benefits and intellectual property rights can also arise if proper management processes are not in place. A university management approval process provides a check in the system to minimize the likelihood of irreparable industry relations situations and financial disasters for the institute.

The Process of Starting and Operating a Research Center at Georgia Tech



Research Center Manual

1) Purpose of this manual

The purpose of this manual is to provide a resource for those interested in forming a new research center that is partly or wholly supported by industry members. Research centers with industry memberships typically provide benefits in return for membership fees, obligating Georgia Tech to the commitments described in the research center bylaws and the membership agreement. Therefore, member sponsored research centers have specific membership benefits and intellectual property policies that must be defined to protect Georgia Tech and the member companies. This manual contains ideas and templates for center directors to begin structuring new research centers that involve industry memberships.

2) First principles of a research center

Research centers with industry memberships are an important part of higher education. They are a vehicle for focusing on a technology critical to the advancement of society and for interdisciplinary collaboration. Research centers are one of the primary means by which Georgia Tech fulfills its mission to serve industry through relevant research, innovation, continuing education, and education of students to become leaders in technology driven companies. A research center is championed by a leader in the technology with the vision that determines the direction of a center and inspires loyalty to its objectives. The mission of the center must have a strategic fit with the institute to be successful on campus. This mission will define the competencies required to accomplish the technical objectives. Researchers from other universities may be invited to participate if they add value to the center, while the institute that the director is employed by takes the lead role in center management.

As centers grow they require management to ensure smooth operation, fulfill reporting obligations and respond to sponsor and member needs and requests. A large center with numerous faculty researchers, graduate students, industry members, and in some cases other universities, needs a professional to manage the industry relations, an accountant to handle the finances, and administrative assistance to organize the research review meetings that are usually held twice each year and support the center management staff. This type of management structure requires a financial model that will fund the personnel and activities required by the mission, bylaws and membership agreements.

3) Does forming a research center make sense?

Before proposing a new membership supported research center for the campus, it is important to critically review the value proposition of the technology and determine the appropriate vehicle for its advancement. The first step in this process is to define the technology and mission of the proposed center and think about who the stakeholders are. Following is a list of questions to consider along with descriptions of different types of research centers. It is highly recommended that the potential director of a research center thoughtfully answer the questions. If forming a research center is the appropriate course of action, utilize the answers to these questions as the basis for the proposal described in Section 4.

a. What are the mission and vision of the center

b. Does a research center make sense for the Georgia Institute of Technology (GIT), the technology, potential industry members, and other stakeholders?
    i. Is there a critical mass of faculty and students to conduct research in the proposed center who are willing to participate in center activities?
c. Are there other centers already fulfilling this need?
    i. See the list of Georgia Institute of Technology (GIT) centers in Appendix A or at www.research.gatech.edu (with links to the websites of the centers). Contact the center directors of research centers with similar or overlapping missions or technologies to discuss your ideas.
    ii. Are there other universities with similar centers? How much competition is there for industry members and funding? Should there be a collaborative relationship?
    iii. Is your proposed center unique enough to justify another center on campus? Why?
    iv. If so, proceed. If not, can you add value to an existing center?
d. What is the best way to accomplish the mission and vision?
    i. Types of research centers -The following terms are typically used interchangeably to describe activities considered in general as research centers.
        1. Research Center –a group of GIT researchers dedicated to a shared research mission. Research centers may be sponsored by federal funding, industry membership funding, or a combination of funding from more than one source.
        2. Institute - an association organized to promote science and education. Institutes usually have an educational component and many award their own degrees or certificates.
        3. Consortium - a group of unaffiliated entities that contribute funding for and participate in research to solve a defined problem. They are usually temporary groups assembled to collaborate on a specific research area with defined deliverables and shared rights to the deliverables. Consortia may be composed of universities, companies, federal laboratories and/or federal agencies.
    ii. Research centers as defined by type of sponsorship
        1. Educational Research Center – centers that educate and train students in the center's mission. These centers do not seek significant research funding or industry memberships, and do not require the structure or ideas described in this manual. Research projects may be conducted under specific directed research project agreements or other contract research funding, with participants, intellectual property (IP) rights and deliverables defined for each project.
        2. Member-Sponsored Research Center – the mission of this type of center is to develop technology relevant to a particular industry. A defined portion of membership fees is used to support "center exploratory research" and center administration. In some centers, a portion may be available for "center elective research" that is

defined by an individual member or group of members. Federal or state research funding may partially support this type of center, but the industry members are a significant funding source and the center is governed by GIT with industry member participation.

3. Federal Agency Sponsored Research Centers – the mission of this type of center is defined by the successful proposal in response to a Federal Agency Solicitation. Many aspects of the center administration are governed by the terms set forth by the federal agency. Industry memberships may be offered in this type of center, and may be a significant source of support particularly in the later years of an award. However, the federal agency is the initial prime sponsor and terms and conditions of any sub-agreements or membership agreements depend on the terms of the award from the federal agency. There are several common federal agency sponsored research centers, including ERCs, I/UCRCs, MURIs, and NCI Centers (See Section 7 for definitions of these types of centers).

iii. Research centers defined by type of participation and approval needed (Important: the VP of Research needs to be notified of all centers formed for university coordination and communication efforts).

1. Participating researchers all come from GIT –Requires approval of appropriate Chair(s) and Dean(s).
2. Participating researchers come from different universities – Requires approval of appropriate Chair(s) and Dean(s) and VP of Research or similar officer of each university. In addition, the proposal must be reviewed by OSP prior to submission.

e. Is there appropriate demand & support for this type of a research center?

i. Will the technology be able to attract research funding?

1. What funding agencies have solicitations with topics in this area, what are the funding levels for the grants, and what does the competition look like?
2. Is this an area that is identified by the state as an area for future economic development? Check the Georgia Research Alliance's activities at www.gra.org

ii. Will the center or the research topic be able to attract industry members, and how much will they invest to become a member?

iii. Will the center or the research topic be able to attract faculty, post doctoral researchers and students to conduct the research? From where?

f. What value added benefits will this center bring to GIT? Or, what is the business case for GIT to support this center?

i. Will the center attract additional directed research funding from industry?

ii. How will students benefit?

iii. How will the technologies developed through the research center be disseminated?

1. How will publications (including theses and dissertations) be handled?

2. What kinds of intellectual property are most likely to result from the research conducted by the center?
    a. Industry standards
    b. Copyrighted material, *e.g. software, data sets, reports*
    c. Patents
3. How are the results anticipated for this center usually disseminated?
    a. Publications including reports, websites, peer-reviewed publications, theses and dissertations
    b. As cross-licensed or non-exclusively licensed patented technology
    c. As exclusively licensed patented or copyrighted technology
4. Will commercial investment be an important part of bringing any resulting technology into public use i.e. will the research most often result in early-stage technologies that require further development before they are useful?
5. Will there be licensing opportunities?
6. Will companies be formed?
7. How will intellectual property that was not anticipated be handled?

g. What is the value proposition for industry members?
    i. What benefits will be offered to industry members in return for their investment in the center?
        1. The opportunity to define industry problems and shape a research agenda that is focused on innovation and solving problems in the center's technological area.
        2. Access to center resources, faculty, researchers, and activities.
        3. Access to a private, password protected center member's-only website.
        4. Early knowledge of inventions and potentially access to intellectual property developed by the center.
    ii. Will there be an Industry Advisory Board?
        1. How will it be structured? Will it be comprised of one representative from each industry member?
        2. How often will the IAB meet?
        3. How will the IAB's advice be used?
        4. Will voting be weighted by membership fees?
    iii. Will access to intellectual property be offered? The access afforded to consortium members will generally be broader than in other types of centers since all parties are contributing to the research which may build upon background intellectual property belonging to one or more of the consortium participants. In general, members of research centers will have access to IP, whether a "first look", an option for a non-exclusive restricted license, or an option for a broader non-exclusive license. The following questions are important:
        1. Will access differ depending on the type of research – exploratory or elective, or type of membership?

2. Will access expire after a defined time?
3. What form will the access to IP take?
4. How will the center pay for intellectual property protection?
5. How will the center ensure that IP is disseminated if the members do not elect to license it?
6. How will the rights of a start up company be protected if members have IP rights?
7. Is the Research Center planning to use income from intellectual property to partially support its operations?

4) Institute management of research centers

Research centers that are large enough to be run as separate budgetary units require management oversight to ensure that funds are available annually to cover the budgeted expenses and that funding is utilized appropriately. When memberships are offered to companies, the members expect benefits such as some access to intellectual property to the research funded by their membership fees, and the institute has the responsibility to fulfill the contractual obligations. It is therefore a significant commitment to develop the appropriate governing bylaws and membership agreements that are tailored to each research center, yet standardized to comply with institute policies and procedures. Therefore, a proposed research center must go through a pre-approval process to justify the development of the documents that govern the center. The proposing director writes a brief (two-page) white paper describing the concept of the center to accompany the Research Center Approval Routing Form in Appendix E. Once this approval is received, the bylaws and membership agreements are prepared jointly by the center director and GTRC. The advice of potential industry members is important at this stage. The business plan for the center, described in Section 4 is also prepared by the director at this time and presented with the bylaws and membership agreements and the form in Appendix E to institute management for final approval of the center.

In several cases at universities around the country, the process for center membership renewals has not been clear or may have lapsed, resulting in accounts receivable items that are not collected, damage to industry-university relations and causing the university's budgets to fall into disarray. Many other misunderstandings regarding member benefits and intellectual property rights can also arise if proper management processes are not in place. A university management approval process provides a check in the system to minimize the likelihood of irreparable industry relations situations and financial disasters for the institute. Therefore, each year, the director requests renewal of the center operations by submitting the center's annual report, including a financial summary, along with the renewal form in Appendix E to institute management.

Following are descriptions for the various roles in this process.

a. Management Accountability – The appropriate school chair(s) and college dean(s), that pre-approve center formation will review the proposed business plan, including the financial model, bylaws and membership agreements, and approve research center formation. They will also review the annual report of the center, including the financial statement by the end of March of each year and notify the

Director and GTRC of its status for receiving funding and offering or renewing memberships for the next fiscal year.

b. Director Accountability – The center director is responsible for proposing the business plan, the organization, fiscal management and strategic plan of the center. An annual report, including a financial statement, must be submitted to institute management by the first of March of each year. Depending on the size of the center, the director may delegate administrative responsibilities to the center management team.
c. Researcher Accountability – Large centers with several research focal areas may define goals for each focal area leader to attract and/or maintain a target number of industry members and secure a target value of research funding each year. Renewal of funding for the next fiscal year for that research focal area may depend in part on the success of the focal area in achieving these goals as well as members' interests in the focal area.
d. GTRC Accountability – GTRC contracts and is paid for the research done at GIT, owns the intellectual property developed by GIT researchers, and is responsible for all center documents, bylaws, intellectual property and technology transfer.
    i. Bylaws – Each center is governed by a bylaws document that defines the mission of the center, the membership structure, the management of the research projects, the intellectual property rights of the members, and the terms and conditions of membership in the center. (See the bylaws template in Appendix B)
    ii. Membership agreements – Each member must execute a membership agreement that identifies the membership level and benefits selected and the membership terms and conditions. (See the membership agreement template in Appendix C)
        1. Fulfilling membership fees with in-kind donations – Center directors are strongly encouraged not to accept in-kind donations as payment for membership fees. Such policies must be consistently extended to all members, and a center cannot operate without a minimal amount of **CASH** funding to support administrative operations.
        2. Centers that have accepted in-kind donations typically discount the in-kind donation, for example, the center may require that the fair market value of a donation be 1.5 times that of the cash value of the membership (e.g., $150,000 of in-kind satisfies a $100,000 membership level). Regardless of the value required for membership, the fair market value of a donation is determined according to the requirements of A-110 (A circular from the U.S. Office of Management and Budgets setting forth standards for uniform administrative requirements for grants and agreements with Non-Profit Organizations).
        3. Donations to the Georgia Tech Foundation cannot be counted towards membership fees in a research center. The donor generally expects tax benefits from such donations, and according to tax laws cannot receive any benefits associated with the

donation. If GIT does provide benefits in return for a donation, it is in jeopardy of losing its non-profit, tax exempt status.

iii. Sponsored research agreements – Centers may conduct research under sponsored research agreements that may be separate from the center's exploratory or elective research. Such research is conducted under the terms and conditions of the agreement, and the results may not be available to all of the members of the research center. (See the sponsored research agreement template in Appendix D)

iv. Intellectual property – as a benefit of center membership, industry members generally expect access to intellectual property developed by the research conducted through their membership fees. GTRC and the center are, in many cases, obligated to disclose inventions to the members that are the result of research funded by the members. In general, members that recommend and financially support the patenting of a particular technology may be granted a non-exclusive, non-transferable license to the patented technology if the membership fees were current when the technology was invented or patented. (See Section 5.f. and the details of the intellectual property rights in the bylaws template of Appendix B)

The institute recognizes that some research centers may be interested in operating under an "Umbrella Centers" arrangement, which is a group of related centers that offer reciprocal memberships and benefits to members. Additional approvals are needed from appropriate Chair(s), Dean(s) and GTRC to offer such memberships. Bylaws and membership agreements of the centers involved must have consistent structures, policies and terms. The directors of the centers must propose justification for forming umbrella center relationships. The bylaws and membership agreements must contain consistent policies, or be amended to be consistent. All members of all involved centers must be offered the same umbrella center membership opportunities. Policies must be developed among the centers and agreed upon by the directors that detail the distribution of membership funding between the centers and the faculty researchers, the exploratory and elective research funding, and administrative funding of the centers. Finally, a financial model must be proposed that demonstrates that there is enough funding to cover the administration and exploratory research commitments for each center.

5) Preparing a research center proposal

The research center proposal process depends on whether the proposal is in response to a federal agency solicitation or proposed for institute support by the director. In either case, the routing sheets for research center proposal pre-approval and final approval may be found in Appendix E. (Note: the answers to the questions in Section 2 may be used as the basis for the research center proposal described in this section.)

4.1) Following is the typical outline of the proposal process for a research center in response to a federal agency solicitation

a. The Office of Sponsored Programs has an outline of the federal agency grant process at: http://www.osp.gatech.edu/process.shtml

(There may be requirements of specific federal agencies identified through this resource.)

b. Proposal routing forms to initiate federal agency grant proposals are available at: http://www.osp.gatech.edu/forms.shtml and may be needed in addition to the process herein.

c. Some Broad Agency Announcements allow a limited number of proposals to be submitted by a university. In these cases there may be an internal "competition" in order to determine the best proposal to submit in response to the solicitation. This process is coordinated through the office of the VP of Research.

d. Typical center technical proposal and management elements (may vary among solicitations)
   i. Rationale: strategic importance of technology, impact
   ii. Management & administration: organization, advisory boards
   iii. Research plan & management: overall research goals and goals for each research focal area, identification of focal area leaders, and the researchers in each focal area
   iv. Education, outreach & diversity plan (if required) (see Appendix F for suggestions)
   v. Knowledge transfer and commercialization plan (see Appendix G for suggestions)
   vi. Industry membership structure, fees and benefits
   vii. Intellectual property plan
   viii. Budget and financial model (note the importance of understanding the reasonable expectations on the amount of funding to support education and outreach efforts in proportion to the funding available for research, and ensure administrative buy-in)(see Appendix H)
   ix. Cost sharing or matching is usually provided by Georgia Tech only when it is required by the sponsor as documented by the published solicitation. If approved, Georgia Tech will generally provide cost sharing at the level required in the published solicitation. Center directors are advised that, if proposed, cost sharing becomes a mandatory condition of the award. Federal funds may not be used for cost sharing. Cost-sharing must be approved by the VPR. Sources of cost sharing include chair endowments, cost shared effort ("release time"), schools, college and the President's office.
   x. Center life cycle or sustainability plan, and exit strategy

e. Important issues for researchers invited to collaborate with another university that will be the lead university in a major center proposal in response to a federal agency solicitation- GTRC and the VP Research need to review and pre-approve proposal commitments and obligations early in the process (not on the proposal submission deadline or after proposal submission) in particular for the following areas:
   i. An Intellectual Property plan
   ii. Cost Sharing (need form in Appendix I); GIT should not be asked to provide more than its pro rata share of cost sharing

iii. Indirect costs; GIT expects to recover the cost for facilities and administration used in support of centers at the rate permitted by the federal sponsor as documented in the published solicitation. Therefore, reductions or waivers of indirect costs are relatively rare and must be justified by exceptional circumstances.
iv. GIT Faculty time commitments

4.2) The following outline is typical of proposals for GIT member-supported research centers

a. Business plan – mission, purpose and management
   i. Budget; cost sharing is not generally provided; the Industry F&A rate is generally used.
b. Membership and financial model
   i. Member benefits distinguish the different membership levels. Discuss with potential members the magnitude of membership fees that make sense for the type of center and benefits proposed. (See Appendix H for examples of different membership and financial models and how the funding may be used).
   ii. Who are potential industry members, what is the current relationship with these companies?
   iii. Will there be an Industry Advisory Board, what is its purpose, how will it function, and how often will it meet to review research progress?
c. Research Management
   i. Describe how research projects will be organized. If organized by Focal Areas, name Focal Area leaders and participating researchers.
   ii. Describe the type of research that would be conducted as Center Exploratory Research Projects and Elective Research Projects, how projects will be selected, and how research funding will be distributed among projects.
d. Center life cycle or sustainability plan; startup plans and exit strategy

6) Research center operations

Once a research center is granted approval to offer memberships and begins operation, it is expected to operate as a financially responsible unit of the institute, whether within a school or college or housed in the Office if Interdisciplinary Programs. Following are some of the principles that may be used for the successful operation of a research center. *(Credit for many of the ideas in this section is attributed to the Engineering Research Center Association's Best Practices Manual found at: http://www.erc-assoc.org/manual/bp_index.htm, please see this continually updated site for more ideas.)*

a. Organization
   i. Director - the director is responsible for the vision that determines the direction of a center and inspires loyalty to its objectives. The director must decide to what extent s/he will delegate responsibility for specific aspects of the center's operations and s/he must then hire or assign employees or faculty

members to fulfill these functions. The new director also must work to build harmonious relationships with the university's hierarchy and the relevant departments.

ii. Managing Director - An integrated center with numerous faculty members and dozens of students is simply too large for one person to manage effectively. When a center becomes this large, a Managing Director who is responsible for general management of the day-to-day operations of the center may be required. It is essential that the person understands fully the vision of the center, its ideals, and its intended impact, and that s/he be treated as a partner in bringing them to fruition. The managing director accepts the responsibility of implementing the center's vision in a manner acceptable to the university. There must be a mutual respect, with the director articulating the concepts and ensuring buy-in and the managing director providing a reality check on what is possible and identifying ways to implement the concepts. The accounting, administrative, education and knowledge transfer teams typically report to the managing director, and the managing director and the research focal area leaders report to the director. Administrative teams are easy to expand but difficult to contract. For this reason, the establishment of a large team constitutes a commitment to the center, on the part of the director, the university administration and the industry members.

iii. Research Focal Area Leaders - Management of a complex research strategy involving multiple teams, multiple team members, and varying objectives and goals is difficult at best. The ultimate success of the center requires the establishment and integration of research project goals and objectives, including the proper prioritization of time, effort, and resources to be applied to each. This level of research management requires that each project or groups of projects include firm estimates of the resources required to address the project (including people, money, and equipment) in the time given to complete the project. The focal area leaders are responsible for this planning as well as the execution of these plans, assisting with the relationships with industry members, and/or securing other research funding to sustain the projects in their focal area. It is the responsibility of the focal area leaders to hold project leaders accountable for achieving milestones on schedule. Similarly, it is the responsibility of the center director to hold the focal area leaders accountable for programs in their areas.

iv. Education Director (optional) - To implement an education program consistent with the center’s mission, a full-time Education Director may be required. The appropriate positioning of this person as a member of the center's leadership team will determine the success of the center's education program. In cases where curriculum development is required, management may require that this person have a PhD to elicit the full respect and cooperation of faculty. His or her interest in interacting with students should also be a major selection factor.

v. Knowledge Transfer Director or Industrial Liaison Officer - Responsible for establishing and maintaining relationships between the center and its industrial sponsors. It must be someone who has the recognition and respect

of both the faculty and industry, who can articulate what the center has to offer and can generate enthusiasm, effectively marketing the center. He or she is responsible for managing the annual or semiannual meetings, coordinating industrial visits, and disseminating information and intellectual property. Industry input suggests that having a dedicated person in this role is the most successful model, with the greatest likelihood for maintaining consistency and improving the center-industry interaction. ERC industrial outreach initiatives may include professional short courses and workshops, internship programs, fellowship programs, mentorship programs, and industrial residence programs.

b. Financial management & budgets

i. Financial integrity is critical to the successful management and continuation of the center. Defining the center's financial reporting requirements is a top priority and will shape internal policies and procedures. It is important that financial information from all of the organizations that provide support to the center is capable of being integrated in the center's financial reports. Internal reports must be provided to center management and special reports to sponsors may be needed.

ii. Budgeting takes place at all levels of the center. The director must identify who is responsible for budgeting at each level and within each management area. A consultation and approval process, and a timetable, for establishing "functional budgets" (e.g., research funds by group; technology transfer; etc.) will need to be communicated.

iii. Cost-sharing may be required for some awards. Check all agency and institutional policies regarding cost sharing. All cost-shared and/or matching funds must be documented. The cost sharing form may be found in Appendix I.

iv. The concept of "leveraged funding" is important to the functioning of the center and the achievement of the goals of federal agency sponsored centers in particular. By design, projects are highly interwoven and dependent upon one another. It is to the benefit of the center to be able to demonstrate how the federal agency funding has leveraged funding from other sources to enhance the effectiveness of the center's operations.

c. Expected funding for exploratory research and directed research, and research funding distribution policies - If possible, the accounts administrator should provide a numerical account code system that provides each focal area and research activity with its own operating budget. Most centers pay no salary to faculty members who are simply team members of a project, while some will support no more than one month's summer salary. Focal area leaders at most centers receive no more than two months' summer salary support for their efforts. Given some rough idea of the income available to the research program, decisions must be made as to how to dispense these resources among the many research focal areas and industrial activities. Some centers decide to fund individual projects for 1-2 year periods and then to collect, administratively, common projects as "Center Exploratory Research". Other centers choose to fund the research budget requests of a focal area, with the dispensation of funds within the focal area being left to the discretion of the focal area leader and the PIs in that

focal area. Continued funding of any project should be reviewed every year, so that no focal area thinks of itself as an "entitlement program." PIs should be given enough notice of the termination of center funds to allow them to secure other sources of support. In this regard, if all projects (and possibly even focal areas) are made aware that support is of finite duration and based upon clearly stated performance criteria, then the need to seek external support should be a constant goal, not an unexpected surprise.

d. Research Center Membership Accounting – Following is a general plan for use in accounting for Center membership fees, research projects funded by membership fees, and other activities to be supported by these fees. It is intended to be used to develop specific procedures for the individual Centers based on the provisions included in the membership agreements.

   i. New Center Memberships
      1. Center administration will initiate activities to prepare a membership agreement and submit the agreement to OSP (Office of Sponsored Projects) with a completed routing sheet and standard OSP requirements.
      2. OSP will complete required contracting work and request that an invoice for the initial dues payment be prepared by GTRC Accounting (not Grants & Contracts (G&C) Accounting).
      3. The membership agreement and the initial invoice will be sent by OSP to the prospective member.
      4. Upon receipt of the signed membership agreement and the dues payment, OSP will request a project and fund number from G&C Accounting.
      5. G&C Accounting will establish a new Fund number, old account number, and matching PeopleSoft project number (last three digits to match last three digits of Old number).
      6. OSP will enter the full year’s dues as the award amount and the amount received as the funded amount of the award (used for authorization of expenditures).
      7. When membership agreements provide for quarterly (or other) payment plans for single year’s dues, the funded amount of the award (and the budget) will be increased as payments are received during the year.
   ii. Center Membership Renewals
      1. The Center administration is responsible for initiating membership renewals, and should submit the agreement to OSP with a completed routing sheet and standard OSP requirements at least two weeks before renewal is required to be sent per the membership agreement.
      2. OSP will complete required contracting work and request that an invoice for the renewal dues payment be prepared by GTRC Accounting (not G&C Accounting).
      3. OSP will send the renewal membership agreement and the invoice to the member.

4. Upon receipt of the signed renewal agreement and the dues payment, OSP will increase the award amount of the existing award (Fund, old account) by the full amount of the annual dues.
5. OSP will enter the amount received as an increase in the funded amount of the award (used for authorization of expenditures).
6. When membership agreements provide for quarterly (or other) payment plans for single year's dues, the funded amount of the award (and the budget) will be increased as payments are received during the year.

iii. Distribution of Membership Fees to Designated Activities

A center may prefer to establish a combined Center Membership Fund or Main Project Budget, particularly if the Center membership agreement includes provisions for a portion of the dues to be assigned to other specific activities (Center Exploratory Research Projects, administrative support, facilities support). In these cases the following is to occur.

1. The Center Director must send a letter of authorization to G&C Accounting (copy to OSP) with instructions for the transfer. This letter will be maintained in the G&C Project file as an amendment to the OSP Project Header.
2. When required, G&C will establish a separate Fund to account for the activities of each authorized activity (Center Exploratory Research Projects, administrative support, facilities support). These stand-alone funds should be closed and replaced each five years.
3. G&C Accounting will transfer the authorized amount of funds from the member's fund to the benefiting fund. This transfer will includes reducing the member's project budget and increasing the benefiting fund budget by the amount authorized, and requesting that GTRC transfer cash collections to the benefiting fund.
4. Within each of these funds, sub-projects may be established to provide for desired management of specific activities.

iv. Member Funded Research Projects

If the Center membership agreement includes provisions for an individual member to request research projects to be performed using a portion of their dues, the following is to occur.

1. The Center financial officer, when authorized would initiate a request for a sub-project using the Budget Revision Features of the Web based PEB system. This system required identification of the Project Director, home unit, amount of funding, and other project specific details. Note: When there is no authorized financial officer, a request for a subproject would be submitted to G&C Accounting for processing.
2. Upon receipt of this information at G&C Accounting, the requested sub-project will be established. The sub-project request is added to the G&C Project file as a permanent record.

v. Jointly Funded Research Projects

If the Center membership agreement includes provisions for two or more members to request a research project to be funded with a portion of their dues, the following is to occur.

1. A letter of authorization from the Center Director identifying the project and Project Director is to be submitted to G&C Accounting. The amount of funding to be obtained from each member is to be specified in the authorization letter. This letter will be maintained it the G&C Project file as an amendment to the OSP Project Header for each membership.
2. G&C will establish a separate Fund to account for the research activities as authorized.
3. G&C Accounting will transfer the authorized amount of funds from the members' fund to the benefiting fund. This transfer will include: reducing the members' project budgets and increasing the benefiting fund budget by the amount authorized, and requesting that GTRC transfer cash collections to the benefiting fund.
4. Within each of these funds, sub-projects may be established to provide for desired management of specific activities.

e. Reporting requirements - All PIs funded by the center should be expected to participate in meetings, write center reports, and assist in maintaining relationships with industry members and securing additional outside funding. It should be recognized that the center needs to support itself as it changes in size. Annual reviews of research and financial status must justify the continuation of center operations to institute management for the next fiscal year. Federal agency sponsors have additional reporting and review requirements that must be understood by the director and all center participants as well.

f. Strategic plan development and best practices - Decisions about the investment of center resources in specific research projects and in the support of students in specific research areas must be guided by a strategic plan in which the center is united. When that critical time of each year rolls around when decisions have to be made about how resources should be allocated to the various research focal areas, the director will be in a situation dictated by choices s/he has made at the outset. Either there will be a clearly stated strategic plan that makes the executive committee's job possible, or there will be a struggle for funds and the director will have to make all of the final decisions. If there is a clearly stated strategic plan, the director should be vigilant to discern the real authorship of key inputs to that plan. The strategic plan of a center can be manipulated by a small group of faculty with preconceived notions of what direction they want the center's research to take or, at an extreme, by a single strong personality--often the Director--who simply tells the troops that this is what s/he has decided. Institute management and advisory boards can detect such a situation fairly easily and should not tolerate it. Research centers will not be successful in the long term when the research program loses its cohesiveness and strategic direction and collapses into a collection of loosely connected single-investigator projects. Effective strategic planning can prevent this tendency toward centralized self-interest.

g. Industrial Collaboration, intellectual property and technology transfer – Centers can be a catalyst for stimulating important collaborative university-industry research, benefiting both the company involved and the students trained in the applied research. They are pioneering new ways of bringing research results to market, breaking down many traditional barriers that have hindered cooperation between universities and industry. Industry brings an understanding of what research is relevant, this is an essential element of systems-oriented, interdisciplinary research and helps provide students with an engineering systems perspective. It is important for the center to establish the vision and infrastructure that are required for an effective industrial collaboration and technology transfer program, including systems for tracking interactions with industry.

i. Intellectual property - To be successful at the ultimate goal of commercialization of the center's research, it is important to ensure the equitable treatment and ownership of intellectual property (IP) resulting from research by individual researchers, the center, the university, and industry and other sponsors. In addition, it is important to protect the rights of a start-up company to form if that is the best way to commercialize the technology. It is Board of Regents policy that GTRC owns and is responsible for licensing IP. Access to licenses is based upon membership category, varying from royalty-free licenses to all center-developed IP to early access without automatic licenses for any members. The Bylaws template in Appendix B offers two alternate IP rights depending on membership fees and the funding model in Appendix H depicts the implications on Center financial management.

1. Low Member fee model: If all of the center's research activity is pre-competitive and supported primarily by federal agencies, members may be offered early access to intellectual property, but not non-exclusive, royalty-free licenses. Options must expire within a defined timeframe so that they do not hinder the formation of a start-up company.
2. Significant Member fee model: If a large part of the center's research activity is pre-competitive and supported in common primarily with member fees, shared rights for all members are appropriate as long as they do not hinder the formation of a start-up company, which might be the best way to commercialize the technology. If the center has, in addition to generally supported research, special projects support by individual companies, the arrangement should reflect each company's unique contribution and rights. Other IP issues that may be included in the agreement or dealt with on a case-by-case basis include restrictions on licenses, financially supporting and maintaining patents, and royalty amounts.

ii. Protection of start-up company rights - Time limits must be placed on the election of intellectual property rights in order to protect the formation of a start-up company to commercialize a technology. When the time period expires, members waive their rights to a technology and the institute (GTRC) can pursue other commercialization options (e.g. startup without restrictions; license exclusively to a non-member company).

h. Marketing the center - Every center uses its Director, staff, faculty members, and sometimes students in its marketing efforts, proactively or responsively. It is the high quality of research (and graduates) that is always most valuable to companies. Carefully identifying the companies that might benefit from the research in the center-that is, finding the right partners-is important in successful marketing. Presenting information about the center's respected faculty members must be accompanied by clearly defining the value of center participation from the company's perspective. This is particularly difficult in industries with a poor track record for R&D funding. Marketing techniques include literature, newsletters, and brochures; visits to industry by directors and faculty; visits to the center by industry representatives; booths and exhibits at trade association meetings; participation at technical society conferences; publication of technical papers; participation in industry research consortia; a center website; informational videotapes; letters to potential industrial sponsors identified through contacts; and topical workshops.

i. Advisory board(s) - An Industry Advisory Board (IAB) shall be established for the center consisting of one representative from each member company. A Chair shall be appointed or elected to lead the IAB. The IAB shall advise the Center on the research direction, the allocation of resources to achieve the mission of the center, and the operational policies of the center. The IAB may create subcommittees as it deems necessary, typically a patenting review committee is formed. The IAB shall typically meet two times in each fiscal year.

7) FAQs about research centers

a. I am interested in forming a center. Who should I talk with initially about my concept/idea?

Meet with the Chair of your department first to discuss the merit of your idea. Prepare a two page white paper of your idea and with your Chair's approval set up a meeting with the Dean and then the VP of Research. Obtain their signatures on the Research Center Pre-approval form (Appendix E) and meet with the Associate VP Research and the Director of the Office of Technology Licensing and the Manager of Industry Contracting in the Office of Sponsored Programs to initiate the preparation of the center governing documents.

b. Who on campus can I talk with to get advice and guidance on proposing a new center?

You can speak with other center directors, the Associate VP of Research (currently Jilda Garton at x4-4819), and the Director of the Office of Technology Licensing (currently George Harker at x4-7059.

c. What GIT organization is responsible for review and approval of proposed bylaws and membership agreements of a new research center?

The Office of Sponsored Programs – Industry Contracting Office (currently Chris D'Urbano at x5-6797.)

d. What are the key issues that must be addressed in the proposal and formation of a new research center?

The key issues are identifying the funding sources, establishing the membership fees and benefit structure, and defining the intellectual property rights.

e. What are the differences between Institutes, Centers, Consortia and Laboratories?

An Institute is defined as an association organized to promote science and education. A Center is defined as a group dedicated to a particular activity. A Consortium is an association of companies for some definite purpose. A Laboratory is defined as a workplace for the conduct of scientific research. The terms are typically used interchangeably. Technically, Institutes have an educational component and many award their own degrees or certificates. Centers do not always have an educational component unless identified in their name or mission, but will have a basic research component that is shared among members. A Consortium is usually a temporary group assembled to solve a particular problem or collaborate on a specific research project with defined deliverables and shared rights to the deliverables. Laboratories refer to a physical space with specific instrumental capabilities more than an association of researchers.

f. Why do Research Centers need approvals and notifications?

It is important for the institute to be aware of the different entities on campus for many reasons. Industry and private donors may be interested in funding focused activities, so institute management and the development offices need to be aware of the various centers and how to contact them. The institute also identifies and reports funding and statistics of center activity and how resources are leveraged. Furthermore, in establishing a center, the institute may have certain legal and financial obligations that must be considered. When entering into membership and specific directed research agreements the institute is obligated to fulfill the terms and conditions of such agreements. Annual institute approval ensures that centers have the resources to fulfill the commitments and do not become a drain or liability to the institute.

g. Why can't donations be accepted as membership fees?

When companies donate funding or equipment to Universities, they receive tax benefits. Tax laws state that donors can not receive any benefits or deliverables as a condition of a donation. If the University provides center membership benefits for donations, the University could risk losing its non-profit status.

h. What are typical IP terms for research centers?

Centers with low membership fees that receive most of their funding through other research grants provide early access and notification of discoveries and inventions to their members, but no automatic IP rights or licenses. Members of centers with significant membership-supported research will expect IP rights

and licenses to center research results. Specific terms are defined in the Bylaws template in Appendix B.

i. What can qualify as in-kind donations?

Centers that have allowed in-kind donations have accepted equipment, software or other items towards fulfillment of membership obligations. Such donations require documentation of value and approval of the Center Director and GTRC. The value of the in-kind donation may be discounted in comparison to cash, for example, $150,000 in equipment may be considered equivalent to $100,000 in cash at the $100,000 membership level.

j. Who can be a Center Director?

Any GT or GTRI employee who qualifies as a Principal Investigator may be a Center Director. Principal Investigators must have faculty status and this designation typically includes research engineers. Graduate students and post doctoral assistants do not qualify.

k. Are there a minimum number of members required?

The minimum number of members depends on the financial model of the center. If the Center needs funding to cover administrative management, there must be enough membership fees each year to cover the budgeted expenses.

l. What are the time periods for memberships?

The minimum membership time period is one year. Many centers include language in their agreements expecting members to commit to two or three years. This commitment is stated to ensure that graduate students working on projects are covered for the time it takes for them to fulfill their graduation requirements.

m. Is there a minimum life span for a Center?

The life span for a Center should be defined in the mission statement. Once a Center fulfills its mission its usefulness is complete.

n. What is the policy on waiving overhead?

Georgia Tech expects to recover the cost for facilities and administration used in support of centers at the rate permitted by the federal sponsor as documented in the published solicitation. Therefore, reductions or waivers of indirect costs are relatively rare and must be justified by exceptional circumstances.

o. What is cost sharing and how does it apply to research centers?

Some sponsors of research centers require cost sharing, which is the commitment that the Research Center will find other funding to contribute to the operation and research expenses of the center. Cost Sharing may be mandatory or voluntary, and may come from the University or other sources such as companies. Mandatory cost sharing/matching refers to that portion of the University contribution to a sponsored project which is required by the terms of the project's

Request for Proposal or Application (RFP/RFA). By accepting an award with mandatory cost sharing, the University incurs an obligation to document its financial contributions to the sponsored project. All proposals and awards must be carefully reviewed to make sure that any cost sharing requirements are consistent with agency and University policies and appropriate for the value of the project to the University.

Awards from for-profit sponsors should not require mandatory cost sharing. Voluntary cost sharing refers to University-initiated contributions to a sponsored center. Voluntary cost sharing is discouraged as it commits University resources and creates additional award administration documentation requirements. If the proposed cost sharing amount is included in the center budget, the fulfillment of the cost sharing must be documented and reported as if it were mandatory cost sharing. The extent of voluntary cost sharing should be reasonable and prudent, considering the Principal Investigator's other commitments of time and University policy regarding full recovery of costs. As with mandatory cost sharing, voluntary cost sharing must be approved by individuals who have authority over the stated source of the cost sharing. The form to be used for Cost-Sharing may be found in Appendix I.

8) Definitions

a. **Center Exploratory Research** – precompetitive, basic research conducted with pooled funding from membership fees and possibly funding from federal agency grants.

b. **Center Elective Research** – research defined and funded by an industry member or small group of industry members.

c. **ERCs** – Engineering Research Centers are NSF sponsored centers that focus on the definition, fundamental understanding, development, and validation of the technologies needed to realize a well-defined class of engineered systems with the potential to spawn whole new industries or radically transform the product lines, processing technologies, or service delivery methodologies of current industries. ERCs play critical roles in academe by integrating research, education, diversity, outreach, and industrial collaboration.

d. **Industry Advisory Board** – The IAB advises the Center on the research direction, the allocation of resources to achieve the mission of the Center, and the operational policies of the Center. Each Member has one representative seat on the IAB. A Chair may be appointed or elected to lead the IAB.

e. **I/UCRCs** (Industry/University Cooperative Research Centers) are NSF sponsored centers with the objective of developing long-term partnerships among industry, academe, and government. The centers are catalyzed by a small investment from NSF and are primarily supported by industry center members. Each center is established to conduct research that is of interest to both the industry and the

center. An I/UCRC contributes to the Nation's research infrastructure base and enhances the intellectual capacity of the engineering and science workforce through the integration of research and education. These centers are governed by the agreement with NSF that flows terms and conditions through to the industry memberships.

f. **MURIs** – Multidisciplinary University Research Initiatives (MURI) are multi-agency DoD programs that are designed to address large multidisciplinary topic areas representing exceptional opportunities for future DoD applications and technology options. The awards provide long-term support for research, graduate students and laboratory instrumentation development that supports specific science and engineering research themes vital to national defense. Industry participation is not a requirement of a MURI, but researchers may collaborate from more than one university or federal research laboratories. MURIs are typically not funded at the level or duration of a center and do not require the administrative oversight of a center but can develop into a center if successful.

g. **NCI Centers** – The Cancer Centers Program of the NCI supports major academic and research institutions throughout the United States to sustain broad based, coordinated, interdisciplinary programs in cancer research.

h. **NCI CCNEs** - The NCI Alliance for Nanotechnology in Cancer sponsors the Centers of Cancer Nanotechnology Excellence (CCNEs). These are the core units of the science and technology programs supported by the Alliance. Each CCNE will function as a consortia or network of laboratories and research facilities organized to address one or more specific cancer nanotechnology platform needs.

i. **Research Focal Area** – Large centers with a dozen or more researchers may find it convenient to organize into groups that may be called Focal Areas or Thrusts. A researcher may be asked to lead the Focal Area and be responsible for setting the goals, maintaining the key industry relationships, and attracting additional funding for the research in the Focal Area.

j. **Umbrella Centers** - A group of related centers that has institute authorization to offer reciprocal memberships and benefits to members.

9) Appendices

Appendix A: Current GIT Research Centers
(from OIP and www.research.gatech.edu)

Research & Graduate Studies
Air Resources and Engineering Center
Bioengineering Research Center
Biomedical Interactive Technology Center
Bioscience Center
Center for Human Movement Studies
Center for Optical Science and Engineering
Emory-GIT Biomedical Technology Research Center
Environmental Resources Center
Georgia Center for Advanced Telecommunications Technology
Georgia Transportation Institute
Georgia Water Research Institute
GITMCG Biomedical Research and Education Center
Institute for Sustainable Technology and Development
Interactive Media Technology Center
Manufacturing Research Center
Microelectronics Research Center
Nanotechnology Center for Personalized and Predictive Oncology
Parker H. Petit Institute for Bioengineering and Bioscience
Polymer Education & Research Center
Software Technology Branch (ARL)
Southeast Applied Analysis Center
Specialty Separations Center

College of Architecture
Advanced Wood Products Laboratory
Center for Assistive Technology and Environmental Access
Center for Geographic Information Systems
Center for Quality Growth and Regional Development
Center for Rehabilitation Technology
Construction Research Center

College of Computing
Center for Experimental Research in Computer Systems (CERCS)
Graphics Visualization and Usability Center
Georgia Tech Information Security Center

College of Engineering
Broadband Telecommunications Center
Composites Education and Research Center
Center for the Engineering of Living Tissues
Center of Excellence in Rotorcraft Technology
Center for Experimental Research in Computer Systems (CERCS)
Center for High Yield Pulp Science
Center for Human Machine Systems Research
Center for Information Insertion
Center for Integrated Diagnostics
Center for Nanoscience and Nanotechnology
Center for Polymer Processing
Center for Surface Engineering and Tribology
Computer Aided Structural Engineering Center
Composites Manufacturing Research Programs
Electronic Commerce Resource Center
Engineering Computing Services
Fluid Properties Research Institute Industrial Associates Program
Fusion Research Center
Georgia Tech Broadband Institute
Georgia Tech Wireless Institute
Health Systems Research Center
The Logistics Institute
Manufacturing Education Program
Mechanical Properties Research Laboratory
National Electric Energy Testing, Research, and Applications Center
National Textile Center
Neely Nuclear Research Center
Packaging Research Center
Rapid Prototyping and Manufacturing Institute
Signal and Image Processing
Statistics Center
Technology Policy and Assessment Center
University Center of Excellence for Photovoltaics Research

College of Sciences
Center for Education Integrating Science, Mathematics, and Computing
Center for Computational Materials Science
Center for Dynamical Systems and Nonlinear Studies
Molecular Design Institute

DuPree College of Management
DuPree Center for Entrepreneurship and New Venture Development
Center for International Business and Education Research
IXL Center for Electronic Commerce

Ivan Allen College
Center for International Strategy, Technology and Policy
Center for New Media Education and Research
Southern Industrialization Center
Technology Policy and Assessment Center

EDI
Advanced Technology Development Center
Center for Economic Development Services
Center for International Standards and Quality
Center for Lean Enterprise Solutions
Center for Manufacturing Information Technology
Center for New Market Opportunities
Economic Development Administration's University Center
Energy and Environmental Management Center
Georgia Tech Procurement Assistance Center
Industrial Assessment Center
Information Technology Solutions Center
Southeastern Trade Adjustment Assistance Center
The Center for Public Buildings

GTRI
Agricultural Technology Research Program
Center For Emergency Response Technology, Instruction and Policy
Center for Enterprise Systems
Center for Geographic Information Systems
Center for International Development and Cooperation
Phosphor Technology Center of Excellence
Severe Storms Research Center
Space Technology Advanced Research Center
Test and Evaluation Research and Education Center

Appendix B: Research Center Bylaws Template

GEORGIA TECH RESEARCH CORPORATION
CENTER NAME
BYLAWS

(Note: Use Option A for high-fee memberships with full intellectual property rights and delete Option B, or delete Option A and use Option B for low-fee memberships with limited intellectual property rights.)

ARTICLE I
MISSION AND ORGANIZATION

1.1 **Mission**. The Center Name (hereinafter "Center") has been established and administered by Georgia Tech Research Corporation ("GTRC") to brief technology description (the "Research Area"), and to promote research, education and training in the Research Area. The Center plans to conduct research focused on the Research Area and invite interested organizations to become members (hereinafter "Member(s)") and participate in the research activities conducted therein.

1.2 **Organization**. The Director shall lead the Center with the assistance of the Members through an Industry Advisory Board ("IAB") that has the purpose of advising on the research directions and operational policies of the Center as further defined by Articles II and III. The final selection of research projects to be performed and the manner in which such projects shall be performed shall be made by the Director of the Center on behalf of GTRC.

ARTICLE II (Option A)
MEMBERS

2.1 **Eligibility and Admission of Members**. Eligibility for membership shall be determined by the Director of the Center. An organization may become a Member of the Center upon being nominated by the Center Director or an existing Member, and fulfillment of applicable membership obligations. Requests for membership by non-U.S. corporations shall be reviewed by GTRC. Notwithstanding anything to the contrary contained herein, all membership benefits are explicitly conditioned on full and timely compliance with all applicable U.S. export laws and regulations.

2.2 **Membership Requirements**. Membership in the Center is offered to companies at three levels. Membership levels I and II are open to all companies. Membership level III is only open to suppliers.

Membership Level	I	II	III
Eligibility	Open	Open	Suppliers
Dues	$250,000	$100,000	$50,000
Funding Split	35% Exploratory Research Projects 65% Elective Research Projects		
Number of Chips	8	4	2
Chips available for	4	2	1

Elective Research Projects			
Cost of Extra Chips	$37,500	$37,500	$20,000

2.2.1 Dues shall be apportioned for the support of research and research-related programs of the Center as set forth in the table above. Not less than 25% of the dues shall be used for support of Center Exploratory Research projects and related research expenses, and all such projects shall be selected by the IAB and the Director of the Center.

2.2.2 The remaining dues shall be used to support Elective Research projects and related research expenses. Each Member may elect to fund Elective Research projects individually or with other Member(s) in equal funding increments (chips) with funds from their dues. Each Member will receive chips to be used in support of Elective Research projects in accordance with its Membership Level, as described in the table above. Extra chips may be purchased to fund additional research beyond that funded by the dues structure in the table above. Each Member purchasing extra chips to support Elective Research projects must purchase those chips in two successive years.

2.3 **Membership Benefits.** All Members shall receive the following benefits.

2.3.1 One representative to the IAB as defined by the membership level and Article III.

2.3.2 At least two research review meetings per calendar year held in conjunction with IAB meetings.

2.3.3 Access to Center resources, faculty, researchers and students, and activities specified by the Center from time to time.

2.3.4 Access to the applicable areas of a private, password protected Center Member's website.

2.3.5 Intellectual Property Rights as defined in Article IV.

2.4 **Fulfillment of Membership Commitment**.

2.4.1 Membership shall be effective upon payment dues and execution of the membership agreement. Special payment terms may be allowed with the approval of the Director and GTRC.

2.4.2 All membership periods shall be effective July 1 through June 30. Members may prorate membership funding when joining midyear. Memberships may be renewed on an annual basis when the dues are received on or before the date the current membership term expires.

ARTICLE II (Option B)
MEMBERS

2.1 **Eligibility and Admission of Members**. Eligibility for membership shall be determined by the Director of the Center. An organization may become a Member of the Center upon being nominated by the Center Director or an existing Member, and fulfillment of applicable membership obligations. Requests for membership by non-U.S. corporations shall be reviewed by GTRC. Notwithstanding anything to the contrary contained herein, all membership benefits are explicitly conditioned on full and timely compliance with all applicable U.S. export laws and regulations.

2.2 **Membership Requirements**. Membership in the Center is offered to companies at three levels as defined in the following table:

Membership Level	I	II	III
Eligibility	>1000 Employees	50-1000 Employees	<50 Employees
Dues	$15,000	$10,000	$5,000

2.2.1 Dues shall be utilized for the support of research and research-related programs of the Center and member benefits.

2.3 **Membership Benefits**. All Members shall receive the following benefits.

2.3.1 One representative to the IAB as defined by the membership level and Article III.

2.3.2 At least two research review meetings per calendar year held in conjunction with IAB meetings.

2.3.3 Access to Center resources, faculty, researchers and students, and activities specified by the Center from time to time.

2.3.4 Access to the applicable areas of a private, password protected Center Member's website.

2.4 **Fulfillment of Membership Commitment**.

2.4.1 Membership shall be effective upon payment dues and execution of the membership agreement. Special payment terms may be allowed with the approval of the Director and GTRC.

2.4.2 All membership periods shall be effective July 1 through June 30. Members may prorate membership funding when joining midyear. Memberships may be renewed on an annual basis when the dues are received on or before the date the current membership term expires.

ARTICLE III
INDUSTRY ADVISORY BOARD

3.1 **Composition of IAB**. An IAB shall be established for the Center consisting of one representative from each Member as defined by the membership levels in Article II. A Chair shall be elected by majority vote of the Member representatives to lead the IAB.

3.2 **Purpose of the IAB**. The IAB shall advise the Center on the research direction, the allocation of resources to achieve the mission of the Center, and the operational policies of the Center. The IAB may create subcommittees as it deems necessary.

3.3 **Meetings of the IAB**. The IAB shall meet at least two times in each calendar year. Notice of the time and place of the regular meetings shall be communicated to each Member a reasonable time before each meeting.

3.4 **Quorum and Voting Rights**. At all meetings of the IAB, a majority of the then current number of voting Members shall be necessary to constitute a quorum for the transaction of business, and the act of the majority of the voting members present at any meeting at which there is a quorum shall be the act of the IAB, provided, however, that any action or resolution that is opposed by a majority of all of the voting Members shall not be deemed taken by the IAB. Each Member has a number of votes equal to the number of chips possessed during the applicable membership year. (Delete final sentence for Option B.)

ARTICLE IV (Option A)
INTELLECTUAL PROPERTY POLICY

(Note: Use this version for centers with significant membership fees. Member rights to any Intellectual Property may have to be adjusted depending on Funding Levels – consult with the Office of Technology Licensing to modify as needed. See Option B for center memberships with low membership fees.)

4.1 **Intellectual Property Rights.** As a benefit to Center Members, GTRC shall grant to Members certain rights and privileges in Center developed Intellectual Property. Intellectual Property includes, without limitation, any inventions, improvements and discoveries, including all computer software, works, material and data, conceived in the course of performance of dues-funded research projects, whether or not protectable by a patent.

4.2 **Disclosure of Intellectual Property.** Inventions resulting from research performed by the Center and funded by Members will be disclosed to GTRC by the inventor(s). Title to any patent, software or any other product resulting from the research funded in whole or in part by Center Membership dues shall remain exclusively with GTRC and Member shall not be entitled to any rights in such Intellectual Property other than the specific license grants set forth in these Bylaws. The Intellectual Property Policy of the Georgia Institute of Technology in effect at the time an invention is disclosed to GTRC shall govern the management of Intellectual Property developed as a result of research undertaken by the Center.

4.3 **Intellectual Property License.** Members shall have rights to license, subject to the terms and conditions in this Section 4, inventions that result from any Exploratory Research project and Elective Research projects supported by that Member with one or more chips. (Center Exploratory Research is precompetitive, basic research conducted with pooled funding from membership fees and possibly funding from federal agency grants; Center Elective Research is research defined and funded by an industry member or small group of industry members.) These rights do not include inventions/software resulting from research performed under contracts with individual Members or other third parties for specific research projects.

4.4 **Payment of Patent Expenses/Election of License.** Invention disclosures will be made available for review to Members who have the right to license them per paragraph 4.3. Such members agree to keep any such disclosure confidential. Specifically, for inventions, these rights apply if Member was a member on the date of invention. For patentable inventions, each Member will indicate within forty-five (45) days of receipt of invention disclosure, its recommendation as to whether or not the invention should be patented. GTRC, at its option, will file patent applications on any Center disclosure or information recommended for patenting by Members. Any positive recommendation by a Member for patenting shall also be a commitment to pay for all (if only one member is interested) or a pro rata amount of any associated patent expenses (if more than one member is interested), and be an indication that the Member will take a license per paragraph 4.5. The expenses for any U.S. patent prosecution will be paid by Members recommending such a patent(s) be obtained. Only those Members requesting foreign patent filings shall

pay foreign patent costs and be entitled to receive a license to practice the Intellectual Property in such foreign jurisdiction.

4.5 **License Terms for Exploratory Research**. GTRC shall grant each Member recommending patenting and paying patent costs pursuant to paragraph 4.4 a non-exclusive, royalty-free, non-transferable, non-commercial license to make, have made, and use in its own facilities any patented or unpatented technology that is supported, in whole or in part, by dues-funded research projects. (See Section 4.8 for Commercial Licenses.) Any Member recommending patenting and electing a license under this section who later ceases to pay patent costs pursuant to paragraph 4.4 shall lose all rights granted under this license. Upon resignation of membership in the Center, Member shall lose all rights to any Intellectual Property resulting from Center research other than rights in those inventions for which Member took a license under 4.5, 4.8, or 4.9 and for which Member continues to pay any and all applicable patent and/or licensing costs associated with such license and otherwise remains in good standing under the applicable license terms and conditions.

4.6 **License Terms for Elective Research**. In the event that all Member(s) having the right to license inventions resulting from an Elective Research project per section 4.3 do not elect to pay patent costs and to take a license to such invention under section 4.5 or to take a commercial know-how license under 4.10 ninety (90) days prior to the expiration of any deadline to file appropriate Intellectual Property Protection, then other Members will be eligible to elect to pay patent costs and take a license under 4.5. In the event that no Members elect to pay patent costs and take a license under 4.5 to an invention resulting from an Exploratory Research project, and certain Member(s) desire to continue to fund the project as an Elective Research project, then after a period of one year after the initial disclosure of the invention to all Members, the invention will be treated as if it had resulted from an Elective Research project, and will be subject to all the same rights and restrictions described herein for any other invention arising out of an Elective Research project.

4.7 **License Eligibility**. In the event that some but not all eligible Members (Members eligible pursuant to 4.3) elect to pay patent costs and take a license to an invention pursuant to 4.5, and at a later date a non-electing, eligible Member desires to take a license to the invention under 4.5, such Member shall be granted a license upon payment of its prorated share of the patent costs to-date plus a $5000 license administration fee. In the event that a non-eligible Member desires to take a license to an invention licensed to eligible Members under 4.5, the non-eligible Member shall be granted a license upon payment of a fair and reasonable license fee and its prorated share of the patent costs to-date, such license fee to be no less than a proportionate share of the amount paid by the eligible Members to fund the project which resulted in the invention.

4.8 **Commercial Licenses**. In the event that a Member has an interest in commercialization of inventions that result from Center dues funded research and that are patented or for which a patent application has been filed, a license agreement may be negotiated through GTRC in consultation with the Director of the Center in accordance with the Georgia Institute of Technology Intellectual Property Policy.

4.9 **Other Licenses**. In the event Member desires to commercialize unpatented Center technology that is subject to non-disclosure under paragraph 4.14 and has not otherwise been published, GTRC will negotiate in good faith a technical license and know how

agreement with such Member in accordance with the Georgia Institute of Technology Intellectual Property Policy.

4.10 **Licenses to Non-Members**. In the event a non-member company requests a license from GTRC to rights in Intellectual Property arising out of Center dues funded research that is not subject to non-disclosure under paragraph 4.14 and has not otherwise been exclusively licensed to a Member, GTRC shall negotiate a commercial license with such non-member, subject to any existing Member rights, for fair and reasonable consideration, which shall at a minimum provide for royalties and a license fee, or equivalent consideration, equal to no less than membership dues at an appropriate dues level for the number of years over which the licensed invention was developed.

4.11 **Software Licenses**. Software developed by the Center shall be copyrighted by GTRC at its option. Member shall be entitled to a non-exclusive, royalty-free end-user license for internal use only to all software resulting from research funded by that Member. These rights do not include software resulting from research performed under contracts with individual members or other third parties for specific research projects. Others may be granted a non-exclusive, royalty-free, end-user license for internal use only to such software upon payment of a fair and reasonable license fee.

4.12 **Title of Intellectual Property**. All persons working on any Center sponsored project shall execute a release of any individual as well as Member or institution rights, other than GTRC institution rights, to intellectual property created in the performance of such Center sponsored project. Member agrees that title to any intellectual property which may be conceived and/or developed by any employee of the Member while that employee is assigned to sponsored projects at the Center, which funding shall be deemed to include in-kind membership contributions, shall reside exclusively with GTRC and shall be subject to the intellectual property provisions of these Bylaws as detailed in Article IV herein. This provision does not apply to pre-existing intellectual property.

4.13 **Compliance with Bayh-Dole Act**. Member acknowledges and agrees that GTRC shall grant the U.S. Government a non-exclusive, nontransferable, paid-up, worldwide license to practice or to have practiced any Center Intellectual Property developed or resulting from federally funded research.

4.14 **Publication Rights.** GTRC reserves the right to publish the results of Center research in scientific journals. However, any Member having rights pursuant to 4.3 shall have the opportunity to review any such article prior to submission for publication for the purpose of identifying patentable developments or any proprietary information owned by the Member. Member shall have forty-five (45) days from the date the proposed publication is mailed to Member to request a delay of publication for the purpose of filing patent applications. The delay period shall not exceed a total of one hundred twenty (120) days from the date the proposed publication is mailed to Member. Submission of information for publication will be permitted at any time following filing of a patent application.

4.15 **Specific Directed Research Projects**. All Members may, at their option, enter into agreements with GTRC for specific non-Membership funded research projects. The intellectual property from these agreements with GTRC shall be governed by the terms of such specific research contracts.

ARTICLE IV (Option B)
INTELLECTUAL PROPERTY TERMS AND CONDITIONS

4.1 **Disclosure of Intellectual Property**. Members are given early notification of research breakthroughs associated with the Center and thus, are the first to know. Intellectual property resulting from research funded through the Center (Center Intellectual Property) will be disclosed to GTRC by the inventor(s) in accordance with GIT and GTRC policy. Within forty-five (45) days of receipt of any such disclosure, GTRC shall make a non-confidential disclosure available to Center Members for review. Based on this non-confidential disclosure, Member may acquire further technical and licensing information by entering into a confidentiality agreement with GTRC.

4.2 **Offer of Intellectual Property Rights**. GTRC shall not offer to any organization that is not a member of the Center rights in any Center Intellectual Property, unless Members have been previously offered rights in such Center Intellectual Property at least sixty (60) days earlier and in accordance with the provisions of these Bylaws. Such period may be extended for an additional thirty (30) days upon written request by a Member.

4.3 **Compliance with Bayh-Dole Act.** Member acknowledges and agrees that GTRC shall grant the U.S. Government a non-exclusive, nontransferable, paid-up, worldwide license to practice or to have practiced any Center Intellectual Property developed or resulting from federally funded research.

4.4 **Specific Directed Research Projects**. Member may, at its option, enter into an agreement with GTRC for specific research projects. Any GTRC intellectual property first conceived in the performance of such project(s) shall be available for exclusive licensing to Member in the category or field of the funded project on fair and reasonable terms and conditions to be agreed to at the time of licensing. If two or more Center Members enter into an agreement as a consortium with GTRC for specific research projects, the intellectual property rights for intellectual property first conceived in the performance of such project(s) shall be governed by the research project agreement.

4.6 **Publication Rights**. GTRC reserves the right to publish the results of Center research in scientific journals, subject to terms of specific research funding agreements. (Such publication may be delayed to ensure patent applications/filings before disclosure of inventions if Members exercise options pursuant to Section 4.1.)

ARTICLE V
GENERAL

5.1 **Notices**. Under the provisions of these Bylaws whenever notice is required to be given, such notice may be given in person, by telephone, e-mail, telecopy, or by mail or private courier, to Members at such address as appears on the records of the Center and GTRC at 505 Tenth Street, Atlanta, Georgia 30332-0415, Attn: Director. Written notice shall be deemed to be given at the time when the same shall be delivered, received or properly mailed.

5.2 **No Effect on Non-Profit Status**. GTRC intends that these Bylaws comply with the requirements of Section 5.03 of IRS Revenue Procedure 97-14 (and interpretations thereof) dealing with cooperative research agreements and shall be interpreted in a

manner consistent with such requirements. GTRC reserves the right to amend these Bylaws to the extent necessary to ensure GTRC's continued tax-exempt status or continued compliance with tax covenants made by GTRC in connection with the issuance of tax-exempt bonds, or to comply with other laws or regulations.

5.3 **Amendments**. The Center, alone or upon the recommendation of its Membership, may propose amendments to these bylaws and/or such additional bylaws as it may deem necessary, which, upon written approval of GTRC, shall govern the operation of the Center.

5.4 **Termination of Center**. In the event that GTRC terminates this Center, Members may receive a prorated refund of the membership dues paid for time periods after such termination.

5.5 **Confidentiality**. The Center shall distribute research reports and similar papers in confidence to Members. Members are encouraged to use for their own internal purposes information provided in those reports and papers. As technical information and know how are valuable assets, Members, the Center and GTRC agree to maintain in confidence any reports and papers for a maximum of two (2) years from the initial disclosure of such reports and/or papers or until such information is submitted for publication in a scientific journal or until a patent application is filed (Confidentiality Period). The Confidentiality Period may be reduced from the maximum of two (2) years by the mutual agreement of the Center and the funding Members. In order to be considered in confidence written notice must be given at the time such reports or papers are distributed and each report must be marked “In Confidence”. Members are encouraged to communicate with Center researchers regarding technical know how associated with such documents. A Member is not required to keep such documents confidential if the information contained therein: 1) is presently in the Member's possession, provided that such information has not been obtained from the Center or GTRC and that such possession can be demonstrated by the Member's written records; 2) is, or becomes, generally available to the public through, for example, such sources as patents or other generally circulated publications, and such availability to the public does not result from any fault of the Member; 3) is received by the Member in written form from a third party having no obligation to the Center or GTRC to keep it confidential; or 4) is disclosed, with the approval of GTRC, through publication.

5.6 **Indemnification**. Member agrees to and does hereby indemnify, hold harmless and save from liability GTRC, Staff Members, the Center and the Georgia Institute of Technology and the Board of Regents of the University System of Georgia, including their officers, and employees from and against any and all claims, demands and actions arising out of or relating to Member's commercial use of reports, information, or technology licensed to Member under the Bylaws.

5.7 **WARRENTY DISCLAIMER**. GTRC, THE CENTER AND THE GEORGIA INSTITUTE OF TECHNOLOGY DISCLAIM ANY AND ALL WARRANTIES BOTH EXPRESS AND IMPLIED WITH RESPECT TO THE SERVICES TO BE PERFORMED HEREUNDER AND ANY DELIVERABLES RESULTING THEREFROM, INCLUDING THEIR CONDITION, CONFORMITY TO ANY REPRESENTATION OR DESCRIPTION, THE EXISTENCE OF ANY LATENT OR PATENT DEFECTS THEREIN, AND THEIR MERCHANTABILITY OR FITNESS

FOR A PARTICULAR USE OR PURPOSE, THE USE OF ANY OF THE INVENTIONS OR IP WILL NOT INFRINGE ANY RIGHTS OF THIRD PARTIES.

Appendix C: Research Center Membership Agreement Template

CENTER NAME
MEMBERSHIP AGREEMENT

This agreement ("Agreement") is made by and between
GEORGIA TECH RESEARCH CORPORATION, a Georgia nonprofit corporation having a business at 505 Tenth Street, Atlanta, Georgia 30332-0420
(hereinafter referred to as "GTRC")

and

COMPANY NAME, a State corporation, having a business at address, city, state, zip (hereinafter referred to as "Company").

SUBJECT

The purpose of this Agreement is to promote research and training in technology (the "Research Area") and through interaction with industry to stimulate the application of useful knowledge to technological innovation by means of membership in the Center Name (hereinafter referred to as "Center"). GTRC is a tax-exempt entity under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended (Code) and is a supporting organization of the Georgia Institute of Technology ("GIT") under Section 509(a)(3) of the Code. The research and training activities of the Center will be performed by employees, independent contractors, subcontractors, consultants and student assistants of GIT. Accordingly, establishing and operating the Center furthers the tax-exempt charitable purposes of GTRC, which functions as an extension of GIT.

IT IS HEREBY AGREED BY THE PARTIES AS FOLLOWS:

1.0 The Center plans to conduct research focused on the Research Area and invite interested organizations to become members (herinafter "Member(s)") and participate in the research activities conducted therein. The organization and operation of the Center, together with terms and conditions of sponsorship, are set forth in the Bylaws (which may be adopted from time to time).

2.0 Company hereby becomes a member of the Center as of the Effective Date designated on Attachment A, subject to the terms of this Agreement and Center Bylaws (Attachment B). Company shall be entitled to appropriate privileges defined as membership benefits in the Center Bylaws. Company agrees to support the research, training and education programs of the Center through its membership and by encouraging its employees to participate in Center activities.

3.0 Member agrees to the membership level selected on Attachment A and to pay the respective membership fees for each year of the Membership Period. The Membership Period shall begin upon the first day of the fiscal year following the execution of this Agreement below. For purposes of this agreement the fiscal year shall run from July 1st of one year to June 30th of the following year. If Member desires to join Center before the beginning of the next succeeding fiscal year, Membership shall become effective and Member shall be entitled to all benefits of Membership upon the execution of this

Agreement and the payment of a prorated portion of the annual dues payment corresponding to the amount of time remaining in the fiscal year. Company shall annually complete Attachment A, which is incorporated herein by reference, to indicate the membership level in which Company desires membership for each year. Company may terminate membership in the Center by providing GTRC three (3) months written notice prior to the effective termination date. Company shall be liable for payment of dues through termination. This Agreement shall renew automatically each year unless a written termination notice is received three (3) months prior to the anniversary date of this agreement or any renewal.

4.0 Member shall be invoiced upon execution of this Agreement and automatically each year, three months prior to the anniversary date of this agreement. Member agrees to pay each invoice within forty-five days of the invoice date. Any invoice not paid within ninety days of the due date will be considered delinquent and subject to a one and one-half percent (1.5%) per month fee for each month or fraction thereof, until the payment is received. GTRC reserves the right to suspend the privileges of Membership, as defined in the Bylaws, if Member fails to pay any GTRC invoice within the time specified.

5.0 GTRC, Center and Company shall be and act as independent contractors, and under no circumstances shall this Agreement be construed as one of agency, partnership, joint venture or employment between the parties. GTRC, Center and Company shall each be solely responsible for the conduct of their respective employees, agents and contractors in connection with the performance of their obligations hereunder.

6.0 Neither GTRC on behalf of Center nor Company shall have any right to assign this Agreement without the prior written consent of the other party. This Agreement and all of the terms and provisions hereof will be binding upon, and will inure to the benefit of, the parties hereto and their respective successors and permitted assigns.

7.0 This Agreement shall be governed by the laws of the State of Georgia without reference to any conflicts of laws provisions that would apply under the laws of another state.

8.0 It is understood that this Agreement may be modified only under terms mutually agreed upon in a duly executed amendment to this Agreement.

9.0 The parties hereto have caused this Agreement to be executed by duly authorized representatives on the date indicated below with the Effective Date of membership as indicated on Attachment A.

COMPANY		GEORGIA TECH RESEARCH CORPORATION	
By:	_____	By:	_____
Name:	_____	Name:	_____
Title:	_____	Title:	_____
Date:	_____	Date:	_____

CENTER NAME

MEMBERSHIP AGREEMENT

ATTACHMENT A

MEMBER:

EFFECTIVE DATE:

MEMBERSHIP EXPIRATION DATE:

Select the desired Membership Level:

☐ Level 1	☐ Level 2	☐ Level 3
$250,000	$100,000	$50,000
$15,000	$10,000	$5,000

Use the first line for Member Fee Option A
Use the second line for Member Fee Option B, or insert as defined in Bylaws

	Member Point of Contact for Agreement	IAB Representative Point of Contact
Name:	_____	_____
Title:	_____	_____
Phone:	_____	_____
Email:	_____	_____
Address:	_____	_____
	_____	_____
	_____	_____

Upon execution of this membership agreement, GTRC will invoice Member for appropriate membership fees.

Payments are to be made to:
Georgia Tech Research Corporation
ATTN: Center Membership
P.O. Box 100117
Atlanta, Georgia 30384

Appendix D: Sponsored Research Project Agreement Template

GEORGIA TECH RESEARCH CORPORATION
Cost Reimbursement Research Project Agreement

Research Project No. _____

THIS AGREEMENT is made by and between **GEORGIA TECH RESEARCH CORPORATION**, a Georgia corporation, having its principal offices at Georgia Institute of Technology, 505 Tenth Street, Atlanta, Georgia, 30332-0420 (hereinafter known as "GTRC") and _____, a _____ corporation having an office and place of business at _____ (hereinafter known as "COMPANY").

In consideration of the mutual premises and covenants herein contained and intending to be legally bound, we agree as follows:

Section 1. Definitions.

1.1 "Research Project" shall refer to the performance of the Statement of Work entitled " ," attached hereto as Exhibit A and incorporated herein by reference. The Research Project is undertaken on a best efforts basis in accordance with the research and educational mission of the Georgia Institute of Technology (GIT) and GTRC.

1.2 "Staff Member" shall mean employees, independent contractors, subcontractors, consultants, student assistants and students of the Georgia Institute of Technology (hereinafter, "GIT"), a unit of the University System of Georgia, who shall perform the Research Project.

1.3 "GTRC" is tax-exempt under Section 501 (c)(3) of the Internal Revenue Code of 1986, as amended ("Code") and is a supporting organization of the GIT under Section 509(a)(3) of the Code. GTRC was formed for the purpose of entering into sponsored research contracts for GIT. GTRC owns and administers intellectual property developed at GIT.

1.4 "Intellectual Property" means any intellectual property, including, without limitation, any inventions, improvements and discoveries, including all computer software, works, material and data, whether or not protectable by patent, trade secret or copyright which is made, created or conceived in the course of performance of the Research Project.

1.5 "Background Intellectual Property" means all GTRC, COMPANY, and third party Intellectual Property conceived and/or first reduced to practice either prior to or outside the scope of this Agreement.

1.6 "GTRC Intellectual Property" means individually and collectively all Intellectual Property which is made, created or conceived solely by Staff Members in the course of performance of work under the Research Project.

1.7 "COMPANY Intellectual Property" means individually and collectively all Intellectual Property which is made, created or conceived solely by employees or personnel of COMPANY in the course of performance of work under the Research Project.

1.8 "Joint Intellectual Property" means individually and collectively all Intellectual Property which is made, created or conceived jointly by Staff Members and employees or personnel of COMPANY in the course of performance of work under this Research Project.

Section 2. Term.

2.1 GTRC shall undertake the Research Project during the term of this Agreement which shall commence upon _____ ("Effective Date") and shall continue through _____ unless sooner terminated or extended in accordance with the terms of this Agreement.

Section 3. Compensation and Expenses; Contract Cost Limitation.

3.1 COMPANY agrees to reimburse GTRC for the actual direct and indirect costs incurred by GTRC in the performance of the Research Project , which shall not exceed **_____US Dollars ($_____)** without first obtaining the written approval of COMPANY. GTRC reserves the right to modify its direct and indirect Rates effective July 1, each year.

3.3 COMPANY agrees to make an advance payment in the amount of **_____($_____)** to GTRC upon execution of this Agreement. The advance payment will be applied against the final invoices. Any outstanding balance will be refunded to COMPANY at completion of the Research Project. GTRC will render its invoices monthly to the address shown below, covering the previous month's actual cost chargeable to COMPANY. COMPANY agrees to pay each invoice within fifteen (15) days of the invoice date. Any invoice not paid within thirty days of the due date will be considered delinquent and subject to a one and one-half percent (1.5%) per month fee for each month or fraction thereof, until the payment is received.

COMPANY

BILLING ADDRESS: _____

_____

_____

_____

Attention: _____

Title: _____

Phone Number: _____

FAX Number: _____

Billing Reference Number: _____

3.4 Payments are to be made to:

Georgia Tech Research Corporation
P. O. Box 100117
Atlanta, Georgia 30384

Or, for electronic payments:

Georgia Tech Research Corporation
c/o Bank of America
600 Peachtree Street, NE
Atlanta, GA 30308
Account No. 0100825661
Routing Transit No. 026009593

3.5 GTRC reserves the right to discontinue the Research Project if COMPANY fails to pay any GTRC invoice within the time specified. GTRC shall not be obligated to incur costs in excess of the cost limitation set forth in Section 3.1.

Section 4. Reports.
4.1 GTRC agrees to render to COMPANY a final report summarizing the results of the Research Project.

Section 5. Publicity.
5.1 Each party agrees not to authorize or commission the publication of any promotional materials containing any reference to the other party without the prior written approval of the other party; provided however that, GTRC and GIT may include COMPANY's name and Research Project title in published listings of research sponsors. The provisions of this Section shall survive termination of this Agreement.

Section 6. Publication.
6.1 GTRC and GIT may catalog and place reports of the Research Project in the GIT Library as to ensure that such results are available to the interested public, and they may issue publications based on the Research Project and use any results non-proprietary to COMPANY in their research and educational programs. GTRC will give COMPANY an opportunity for thirty (30) days prior to any presentation or submission of any publication to review such publication or presentation and, if necessary, request GTRC to delete any reference to COMPANY'S confidential intellectual property included in the publication. Furthermore, COMPANY shall have the right to request a delay in publication for up to thirty (30) additional days, if necessary, to allow for filing of patents if such publication contains patentable subject matter.

Section 7. Intellectual Property.
7.1 Intellectual Property Rights.

a. Background Intellectual Property Rights. All Background Intellectual Property is the separate intellectual property of COMPANY or GTRC, respectively, and is not affected by this Agreement. This Agreement shall not be construed as implying that either party hereto shall have the right to use Background Intellectual Property of the other in connection with this Agreement, except as otherwise provided.

b. GTRC Intellectual Property Rights. All right, title and interest to all GTRC Intellectual Property which is solely made, created or conceived by Staff Members under this Research Agreement shall be owned solely and exclusively by and vest entirely in GTRC.

c. COMPANY Intellectual Property Rights. All right, title and interest to all COMPANY Intellectual Property which is solely made, created or conceived by employees or personnel of COMPANY under this Research Agreement shall be owned solely and exclusively by and vest entirely in COMPANY.

d. Joint Intellectual Property Rights. All right, title and interest to all Joint Intellectual Property which is made, created, or conceived jointly by employees or personnel of COMPANY and Staff Members under this Research Agreement, shall be jointly owned by GTRC and COMPANY.

e. Either party will promptly notify the other party of any Intellectual Property and/or Joint Intellectual Property conceived, created, or reduced to practice within the scope and during the term of the Research Project.

7.2. Licensing Rights of Intellectual Property.

a. GTRC grants to COMPANY a right of first refusal to negotiate an exclusive license, in a designated field of use and subject to any existing third party rights, to any GTRC Intellectual Property and GTRC's rights in any Joint Intellectual Property. Any such license shall be negotiated in good faith on fair and reasonable terms by GTRC and COMPANY.

b. The period of COMPANY's right of first refusal shall commence upon disclosure and terminate six (6) months after disclosure of such Intellectual Property. COMPANY shall exercise its right by written notice to GTRC, prior to the expiration of the six (6) month term, of its desire to license such Intellectual Property. COMPANY shall have the option of extending the option period for a period of six (6) additional months by agreeing to reimburse GTRC for patent expenses. The option is subject to COMPANY and GTRC reaching an agreement on fair and reasonable terms within three (3) months of COMPANY's written notice of election of the option

c. In any license granted under this Agreement, GTRC shall retain for itself and GIT a non-exclusive, fully-paid license, to use all licensed Intellectual Property for academic research and education purposes.

d. GTRC shall grant to COMPANY a non-exclusive, royalty-free license to any GTRC Intellectual Property developed under this Research Agreement for internal research and development use only.

e. COMPANY shall grant to GTRC a fully paid-up, royalty-free license under COMPANY Intellectual Property first conceived or reduce to practice under this Research Agreement, to use such COMPANY Intellectual Property solely for its own internal academic and research purposes.

Section 8. Indemnity.

8.1 COMPANY agrees to and does hereby indemnify, hold harmless and save from liability GTRC, Staff Members, and the Board of Regents of the University System of Georgia, including their officers, and employees from and against any and all claims, demands and actions arising out of or relating to COMPANY's commercial use of intellectual property licensed to COMPANY under this Agreement. The obligations of this section shall survive any expiration or termination of this Agreement.

Section 9. Disclaimer.

9.1 GTRC AND GIT DISCLAIM ANY AND ALL WARRANTIES BOTH EXPRESS AND IMPLIED WITH RESPECT TO THE SERVICES TO BE PERFORMED HEREUNDER AND ANY DELIVERABLES RESULTING THEREFROM, INCLUDING THEIR CONDITION, CONFORMITY TO ANY REPRESENTATION OR DESCRIPTION, THE EXISTENCE OF ANY LATENT OR PATENT DEFECTS THEREIN, THEIR MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE, VALIDITY OF ANY INTELLECTUAL PROPERTY RIGHTS OR CLAIMS, OR NONINFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

Section 10. Limitation of Liability.

10.1 The cumulative liability of GTRC to COMPANY for all claims, demands or actions arising out of or relating to this Agreement, the services to be performed hereunder and any deliverables resulting therefrom, shall not exceed the total amount paid to GTRC hereunder during the twelve (12) months immediately preceding such claim, demand or action. Without limiting the foregoing, in no event shall GTRC be liable for any business expense, machine down time, loss of profits, any incidental, special, exemplary or consequential damages, or any claims or demands brought against COMPANY or COMPANY's customers, even if GTRC has been advised of the possibility of such claims or demands. The foregoing limitations of liability, damages and claims are intended to survive termination of this Agreement and apply without regard to any other provisions of this Agreement which have been breached or proven ineffective.

Section 11. Termination.

11.1 COMPANY may terminate this Agreement for any reason upon thirty (30) days written notice to GTRC.

11.2 GTRC may terminate this Agreement upon thirty (30) days prior written notice in the event (i) that GTRC determines that continued performance under this Agreement jeopardizes its tax-exempt status or issuance of tax-exempt bonds under the Internal Revenue Code and associated Regulations or (ii) a material breach by COMPANY of any term or provision hereof, provided such breach remains uncured at the end of said thirty (30) day period. Such notice of a breach shall include a reasonable description of the facts surrounding the alleged breach and a proposed course of action to cure said breach.

11.3 COMPANY shall pay GTRC any costs which have accrued or been encumbered up to the actual date of termination under this Section and shall not be relieved of the obligation to pay such costs because of termination under this Section.

Section 12. Export Control.

12.1 All parties agree that any and all information shall be exported outside the United States only in compliance with all applicable United States export control laws (EAR/ITAR). The transfer of certain technical data and commodities may require a license from a government agency or written assurances by COMPANY that COMPANY will not re-export data or commodities to foreign countries without prior approval of the appropriate U.S. Government Agency. GTRC agrees to cooperate with COMPANY in securing any license necessary in connection with this Agreement. The obligations of this section shall survive any expiration or termination of this Agreement.

Section 13. Miscellaneous.

13.1 All notices and other communication required or permitted to be given under this Agreement shall be in writing and shall be deemed effective upon (a) personal delivery, (b) confirmed transmission of facsimile, (c) five (5) days after deposit in the United States Post Office, by registered or certified mail, postage prepaid, or (d) one (1) day after deposit with any reputable express courier for overnight delivery, and addressed to the parties at their respective addresses set forth below unless by such notice a different person or address has been designated.

To GTRC for administrative matters:	**To COMPANY for administrative matters:**
Georgia Tech Research Corporation	_____
505 Tenth Street, N.W.	_____
Atlanta, Georgia 30332-0420	_____
Attn: Christopher E. D'Urbano	_____
Industry Contracting Officer	_____
Phone: 404-385-6797	_____
FAX: 404-894-6992	_____
E-mail: chris.durbano@osp.gatech.edu	_____

To GTRC for technical matters:	**To COMPANY for technical matters:**
Georgia Institute of Technology	_____
Atlanta, Georgia 30332-____	_____
Attn:	_____
Title: Project Director	_____
Phone: 404-894-	_____
FAX: 404-894-	_____
E-mail:	_____

13.2 GTRC and COMPANY shall remain independent contractors and nothing herein shall be construed to create a partnership, agency or joint venture between the parties. Each party shall

be responsible for wages, hours and conditions of employment of its personnel during the term of, and under, this Agreement.

13.3 All questions concerning the validity, operation, interpretation and construction of this Agreement will be governed by and determined in accordance with the laws of the State of Georgia.

13.4 No waiver by either party of any breach of any provision of this Agreement shall constitute a waiver of any other breach of that provision or any other provision.

13.5 This Agreement sets forth the entire agreement and understanding between GTRC and COMPANY as to the subject matter hereof and merges all prior discussions between them; and neither party shall be bound by any conditions, definitions, warranties, understandings or representations with respect to such subject matter other than as expressly provided herein. This Agreement may not be modified or altered except in writing by an instrument duly executed by authorized officers of both parties. Provided, however, that no provision appearing in any standard form document originated by COMPANY, including but not limited to any purchase order or confirmation order, shall be applicable, even if signed by both parties, unless the parties also execute a separate instrument expressly modifying this agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their duly authorized officers the day and year set forth below.

Georgia Tech Research Corporation	**COMPANY**
By: _____	By:_____
Typed Name:_____	Typed Name:_____
Title:_____	Title:_____
Date:_____	Date:_____

By:_____

Typed Name:_____

Title:_____

Date:_____

Appendix E: Routing Sheets for GIT Research Center Approvals

GEORGIA INSTITUTE OF TECHNOLOGY
RESEARCH CENTER ROUTING FORM
Pre-Approval to Develop Center Documents

Center:		GTRC use only:
Center Director:		Department:
Research/Academic Title:	Phone:	Fax:
E-mail:		Campus Mail Code:
Type of Center: ☐ Educational ☐ Industry Member Sponsored ☐ Federal Agency Sponsored		
Approval for Development of: ☐ Business Plan ☐ Bylaws ☐ Membership Agreements		

Attach a brief White Paper (less than 2 pages) with a general description of the Center mission, concept, and types of prospective members. If this is a multi-university center with another university as the lead, please attach details.

Routing and Approvals for Completed Proposal

Authorization	Responsibilities	Signature *I certify that I have read and understand the Institute's Conflict of Interest policy; to the best of my knowledge, all required financial disclosures were made; and I will comply with any conditions or restrictions imposed by the Institute to manage, reduce, or eliminate conflicts of interest.*	Date
1. Director	Prepare and obtain approvals for White Paper including concepts for Business Plan, Financial Model & Membership Structure	Printed Name	
2. School Chair or Department Head	Approval of concept	Printed Name	
3. Dean or Director	Approval of concept	Printed Name	
4. Director of OTL	Provides IP policy guidance for Bylaws development	Printed Name	
5. Director of OSP	Provides guidance for membership agreement development	Printed Name	
6. Associate Vice Provost of Research	Provides document development resources	Printed Name	
7. Vice Provost of Research	Pre-approval to establish center	Printed Name	

Comments:

GEORGIA INSTITUTE OF TECHNOLOGY
RESEARCH CENTER ROUTING FORM
Proposal and Document Approval

Center:		GTRC use only:
Center Director:		Department:
Research/Academic Title:	Phone:	Fax:
E-mail:		Campus Mail Code:
Type of Center: ☐ Educational ☐ Industry Member Sponsored ☐ Federal Agency Sponsored		
Approval for Development of: ☐ Business Plan ☐ Bylaws ☐ Membership Agreements		

Attach Proposal including Membership and Financial Model or Research Center Annual Report.
If this is a multi-university center with another university as lead, please provide details in an attachment.

Routing and Approvals for Completed Proposal

Authorization	Responsibilities	**Signature** *I certify that I have read and understand the Institute's Conflict of Interest policy; to the best of my knowledge, all required financial disclosures were made; and I will comply with any conditions or restrictions imposed by the Institute to manage, reduce or eliminate conflicts of interest.*	Date
1. Director	Prepare and obtain approvals for White Paper including concepts for Business Plan, Financial Model & Membership Structure	Printed Name	
2. School Chair or Department Head	Approval of concept	Printed Name	
3. Dean or Director	Approval of concept	Printed Name	
4. Director of OTL	Provides IP policy guidance for Bylaws development	Printed Name	
5. Director of OSP	Provides guidance for membership agreement development	Printed Name	
6. Associate Vice Provost of Research	Provides document development resources	Printed Name	
7. Vice Provost of Research	Pre-approval to establish center	Printed Name	

Appendix F: Education, Outreach and Diversity Proposal Suggestions

Georgia Tech Education Programs

Elementary School Programs
Kid's Club Saturday Academy for Elementary Students
This CEISMC*-directed and assessed outreach program (grades 3-5) motivates interest in sciences and technology. The program takes place three times each year and impacts approximately 200 students annually. CEISMC works with research centers on campus to develop educational modules for this program.

Middle School and Junior High Programs
CEISMC SummerScape*
This one-week, science-based summer enrichment experience for middle school students is held twice each summer, impacting 100 children and 3 to 5 middle school science teachers annually. CEISMC works with research centers on campus to develop educational modules for this program. Graduate students assist the program and provide mentoring during the summer.

High School Programs
Student and Teacher Enhancement Partnership (STEP)
This program was established at GT in 2001 with funding from NSF's K-12 program, and encourages academic scientists and engineers to shoulder some of the responsibilities for the quality of science, technology and engineering at the K-12 level by developing university K-12 partnerships. STEP is in its 3rd year, and is preparing to embark on a five-year extension. A major part of the program has been the building, nurturing and grooming of partnerships between GT and local minority high schools. Each partnership is anchored by select GT graduate students, who spend 15 hours per week at the partner school assisting with instruction, mentoring students, and coordinating student enrichment programs. One of the STEP schools is Westlake High in Fulton County. Approximately 98% of the 1300 Westlake students are African-American, and it houses the math/science magnet program in Fulton County.

Undergraduate Student Programs
Tutoring
To help retain minority students that enroll at GT, the services of OMED, and educational service unit at GT whose mission is to assist minority students who are inexperienced in the GT environment, will be utilized.

Programs for Teachers
RET-GIFT Program
Historically, GT has regularly participated in the RET-GIFT (Research Experiences for Teachers – Georgia Industrial Fellowships for Teachers) program (6 teachers, each year, 2001-2003, including 2 from Westlake High in the summer of 2003).

Diversity Background and Programs

As Georgia Tech pursues its vision to educate the future leaders of a technologically driven world, one of the goals is to build a diverse community of students, faculty, and staff. To accomplish this, one strategy is to remain among the top producers of underrepresented minority Ph.D.s in the country.

Through focused programs, Georgia Tech will continue to create a campus environment of inclusion, respect, and community, where diversity is viewed as a valuable asset in every aspect of campus life.

Georgia Tech has a history of excelling in minority graduate education. Of all public state universities, *US News and World Report* consistently ranks the GT College of Engineering in the nation's top five programs. *Black Issues in Higher Education* has also ranked GT as the No. 1 producer of African American engineering graduates. GT statistics show that GT is No. 1 in awarding engineering bachelor's degrees to African American students, No. 4 in awarding master's degrees to all categories of minority students, No. 1 in awarding engineering doctoral degrees to Hispanic students and No. 4 in awarding doctoral degrees to African American students.

Faculty
GT has recently implemented aggressive strategies to recruit females and minorities into the College of Engineering. The goals for GT as specified by the Deans of Engineering and Science are to:

- Increase the minority faculty enrollment by 100% in 5 years
- Increase faculty diversity to 25% in 10 years

Minority Recruitment and Retention Programs at Georgia Tech
FACES
The Facilitating Academic Careers in Engineering and Science (FACES) program is a collaborative effort between the College of Engineering and College of Science at the Georgia Institute of Technology, Morehouse College, and Spelman College designed to significantly increase the number of African American students receiving doctoral degrees in engineering and science fields and ultimately increase the number of these individuals entering the professoriate.

FOCUS
FOCUS is a recruiting program designed to increase the number of master's and doctoral degrees granted to minorities, not only at Georgia Tech, but also nationwide.
Established in 1992, FOCUS is held annually during the Martin Luther King Jr. holiday weekend, and is designed to increase minority student awareness of the benefits and necessity of obtaining a graduate degree. Undergraduate students from across the nation come to Georgia Tech to learn about its academic programs and campus life. While students are encouraged to pursue their advanced degrees at Georgia Tech, the hope is that FOCUS will at least inspire the students to attend graduate school no matter their choice.

OMED

A unit on the GT campus that mentors students to ensure success in undergraduate programs. The aim of OMED is to recruit students as freshmen and graduate them at the senior level.

*CEISMC
(Center for Education Integrating Science, Mathematics & Computing)
A center at GT with a long history of developing, implementing, and facilitating programs to actively encourage success for underrepresented and underserved populations in grades K-12. The SummerScape program and Kid's Club Saturday Academy are two highly successful CEISMC programs.

Appendix G: Knowledge Transfer and Commercialization Proposal Suggestions

An important outcome of research centers, as perceived by the sponsors, is the dissemination of knowledge and commercialization of the technologies developed through the sponsorship and collaborations. The audience for this knowledge transfer is the university and industry members, academia and the public. The center's goals for knowledge transfer and commercialization are to:

i. Improve information flow between the center and industry and the public
ii. Improve the efficiency of information sharing
iii. Improve the quality of education of students to produce first class employees for industry
iv. Effectively train center participants in entrepreneurship and proper handling of intellectual property

The Center can facilitate knowledge transfer and commercialization through:

- Publications and attending conferences
- Web-based communications
- Industrial interactions and exchanges
- University based programs
- Education and outreach programs

Publications and attending conferences

Within the academic community, the most effective means of knowledge transfer is also the most widely used: publications. Publications and conferences are also among the most important venues for industrial knowledge transfer, and therefore will also be a major method for disseminating research center technology. The center's publication strategy will be to target select critical technical conferences in order to reach both the science and technology audiences. Center researchers will be involved as officers or symposia organizers for these organizations to drive conference technical development.

Web-based communications

An extensive multimedia information portal with public and secured access can be an effective knowledge transfer tool. The public can have access to education modules, publications, and streaming video of presentations, interviews and virtual lab tours. The secured intranet area can provide center management and sponsors with central databases and a virtual headquarters. Progress reports, publication drafts and presentations can be posted. Industry can have access to these and other resources that will foster collaborations, communications, commercialization and coordination of activities. Students from all campuses involved can collaborate on courses, research, and special activities involving ethics and entrepreneurship.

Industrial interactions and exchanges

Formal opportunities for interactions and exchanges improve the opportunities for successful knowledge transfer and commercialization. The industry advisory board should meet at least twice each year. The meetings should include research reviews, student poster sessions, a commercialization forum and center status overview. They could also include education, ethics,

intellectual property & entrepreneurship and equipment training sessions. These meetings and interactions lead to collaborative opportunities such as summer internships for students, faculty/industry researcher exchanges, and co-locating post doctoral associates. The commercialization forum is a venue for reviewing intellectual property and discussing the various paths for commercializing technologies: should the invention be patented, licensed, or should a start up company be formed. The members need to determine whether they would like to exercise their intellectual property rights, or waive their rights to enable start up company formation. Georgia Tech's VentureLab may be involved with the faculty inventor to assist in business plan formation and market analysis, and could present the case for a start up company to the industry members.

University based programs

The center can organize programs and leverage existing university programs and resources to accomplish public knowledge transfer goals. Examples of effective programs include:

- Workshops
- Lecture series
- Inter-institutional and professional graduate courses
- Faculty exchanges with appropriate national or international universities

Education and outreach programs

To facilitate education of the general public on the relevance and importance of the center research, the center must engage in active outreach. In addition to the web-based communications efforts described above, other activities include:

- Annual meetings, research opportunities, and summer training programs for K-12 educators
- Interactive museum displays
- Publicizing through appropriate local and international technical media, such as Tech-TV
- Participation in programs such as SURF – Summer Undergraduate Research Fellowships

Note: Centers will not have the resources to participate in all of these activities. The objective of this document is to provide as exhaustive a listing of possibilities as possible, though other ideas are certainly encouraged that may be appropriate for your center. The center management team should agree on the knowledge transfer and commercialization goals of the center and brainstorm and prioritize the strategies that have the best chances of enabling the center to achieve these goals.

Appendix H: Funding Model Example

Appendix H — Research Center
Option A- High Member Fees — Funding Model Example

Membership Level	Number of Members	Dues	Total Funding	Administrative Set-Aside 15%	Exploratory Research 25%	Elective Research 60%	Chips
I	3	$250,000	$750,000	$112,500	$187,500	$450,000	4
II	6	$100,000	$600,000	$90,000	$150,000	$360,000	2
III (Supplier)	4	$50,000	$200,000	$30,000	$50,000	$120,000	1
Total	13		$1,550,000	$232,500	$387,500	$930,000	28
Support Level				$1,117 Remaining after covering M.D. & 1/2 Acct & 1/2AA	11 GRAs	27 GRAs	
Grad Student	$35,000						
Managing Director	$166,596	1					
Accountant	$74,043	0.5					
Admin Asst	$55,532	0.5					
Benefit Rate	23.9%						
Indirect Rate	49.4%						

Research Center
Option B - Low Member Fees — Funding Model Example

Membership Level	Number of Members	Dues	Total Funding	Administrative Set-Aside 50%	Elective Research 50%	Definition of Membership Level	Prospects
I	2	$15,000	$30,000	$15,000	$15,000	Companies with >1000 employees	
II	5	$10,000	$50,000	$25,000	$25,000	Companies with 50-1000 employees	
III	3	$5,000	$15,000	$7,500	$7,500	Companies with <50 employees	
Total	10		$95,000	$47,500	$47,500		

Assumptions: Significant federal agency funding provides resources for precompetitive research projects and Administration such as the Managing Director, Accounting and Administrative Assistants

Administrative Set-Aside is used for Member benefits such as IAB meeting expenses, marketing the center, seminars, workshops, short courses, publications & literature

Appendix I: Cost Sharing Form

GEORGIA INSTITUTE OF TECHNOLOGY **OFFICE OF SPONSORED PROGRAMS**

SPONSORED PROGRAM/RESEARCH PROPOSAL COST-SHARING APPROVAL FORM

College, Center, School, Laboratory: BME Date: 10/01/04

Principal Investigator/Project Director: Dr. Georgia Tech

Project Title: Tissue Biodetection

Name of Sponsoring Organization: National Institute of Health

Performance Period: 04/01/05 to 03/31/08 Proposal No. (if any)

NOTE: COMPLETE A SEPARATE FORM FOR EACH FISCAL YEAR OF PROJECT.

			GEORGIA TECH CONTRIBUTION				
SALARIES & WAGES	**EFT (Acad.only)**	**EXPECTED FROM SPONSOR**	School/Lab/Center	Dean/Director/OIP/ GTRI Director	President's Office	**OTHER (SPECIFY)**	**TOTAL PROJECT BUDGET**
Project Director							
Graduate Assts.							
Other							
TOTAL SALARIES & WAGES		0	0	0	0	0	0
Compensated Absences (GTRI only)							
Fringe Benefits							
TOTAL DIRECT LABOR		0	0	0	0	0	0
LAB OVERHEAD (GTRI ONLY)							0
MATERIALS & SUPPLIES (M&S)							0
TRAVEL							0
OTHER OPERATING EXP (GTRI ONLY)							0
EQUIPMENT							0
SUBCONTRACTS							0
F&A (RI) OR G&A (GTRI)*							0
GRA TUITION REMISSION							0
COST OF MONEY (GTRI ONLY)							0
FEE (GTRI ONLY)							0
TOTAL COSTS		0	0	0	0	0	0

COMMENTS:

APPROVED: **SIGNATURE:** **DATE:**

School/Lab/Center Director:

Dean/Director/GTRI Director/OIP:

Vice Provost for Research:

***NOTE: When calculating Cost Sharing be sure to include the appropriate F&A costs on the direct charges to meet the cost sharing requirement.**

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