

Overview

This document summarizes how research teams interact with the Bioinformatics Core Facility (BICF), how the BICF operates, and delineates high-level expectations before, during, and at the close of projects. An understanding and adherence to these expectations allows for a successful launch of the BICF into the UTSW research community and allow the BICF to support researchers into the future as a self-sustained entity.

We look forward to working with you.

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A. EXECUTIVE SUMMARY

In light of the rapidly increasing need for competent analysis of high-dimensional and multi-modal data sets, the BICF:

- provides access to state-of-the art high-performance computing and software infrastructure for both end-users of bioinformatics tools and tool developers,
- tailors support to unique demands of particular projects via several support modalities,
- offers educational programs that train users at all levels of expertise, and
- functions as the conduit between bioinformatics research programs and the clinical and basic science research community at UTSW; this includes provision of access to UTSW proprietary and public databases and standardized software pipelines.

B. FOUNDING AND SUPPORT

The integrated bioinformatics infrastructure (including the new department, the BICF, and the high performance computing (BioHPC) group) became a reality with: a generous gift by the Lyda Hill Foundation, a CPRIT grant, the Harold C. Simmons Comprehensive Cancer Center, and diverse institutional support from UTSW. The executive leadership of the Department of Bioinformatics, are working diligently to implement an administrative strategy to guarantee continuation of the computing and service infrastructure beyond the sunset of initial CPRIT funding and gifts.

C. LEADERSHIP

The BICF is led by senior-level investigators and executives. Three groups comprise the leadership: Steering Committee, Executive Leadership, and External Advisory.

Steering Committee meets bimonthly, to make strategic decisions, specifically prioritizing projects and fellows program, provides oversight of implementation of business plan, and access to all programs and services.

- Gaudenz Danuser, Ph.D., Lyda Hill Department of Bioinformatics, Chairman
- Yang Xie, M.D., Ph.D., Associate Professor, Departments of Clinical Sciences and Bioinformatics, Director BICF
- Steve Jiang, Ph.D., Vice Chair Department of Radiation Oncology
- Dipti Ranganathan, M.Sc., Associate Vice President Information Resources
- Robert Toto, M.D., Associate Dean for Clinical and Translational Research
- Representative from the Harold C. Simmons Cancer Center, TBD

Executive Leadership provides operational expertise, is the liaison between BICF, the department within which it resides, and UTSW leadership, and executes Steering Committee directives as they relate to the BICF and the investigative teams engaged with the BICF.

- Yang Xie, M.D., Ph.D., Departments of Clinical Sciences and Bioinformatics, Director BICF
- Minsoo Kim, M.S., Manager BICF
- Denise Niles Canales, M.A., Bioinformatics Department Administrator

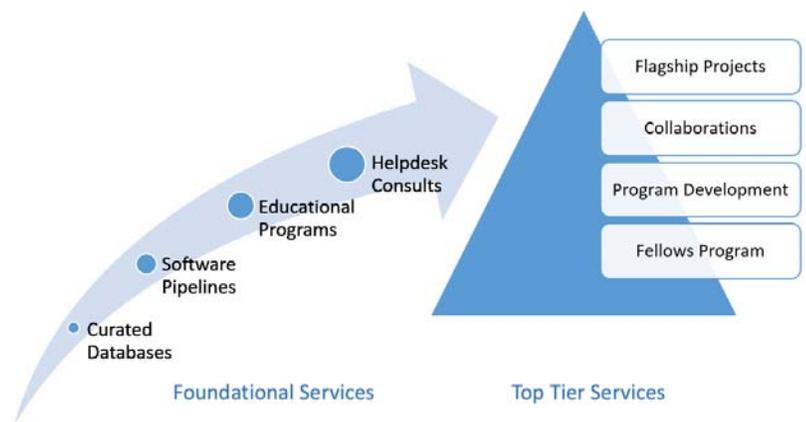
External Advisory Board meets annually with the Steering Committee and provides additional consultation as needed to the Steering Committee and Executive Leadership.

- John Halamka, M.D., Ph.D., CIO Beth Israel Deaconess and Harvard Medical School
- Robert Murphy, Ph.D., Director Lane Center for Computational Biology, Carnegie Mellon University
- Hongyu Zhao, Ph.D., Chair Department of Biostatistics, Yale School of Public Health

D. MODES OF INTERACTION

BICF consists of experts in computational biology and biostatistics who provide support in a wide area of biomedical data analysis, but especially in the integrated processing of 'omics' data sets, medical data records, and images, via the following modes of interaction:

- Curated Databases
- Software Pipelines
- Educational Programs
- Helpdesk Consults
- Fellows Program
- Program Development
- Collaborations
- Flagship Projects



Entities may make use of any of the foundational services (Curated Databases, Software Pipelines, Educational Programs, and Helpdesk Consults), offered to the research community, at any time, as needed. These foundational services occur whether an entity has formally engaged the BICF or not.

Top tier services (Fellows Program, Program Development, Collaborations, and Flagship Projects) are more formally defined relationships, centered on specific research activity.

Curated Databases:

- Currently under development

- Open to community and accessible via Intranet.
- Free to entity
- User support is provided through educational programs and help-desk services
- Disclaimer: BICF does not provide a scientific interpretation of the results generated by using these data sets

Software Pipelines:

- Currently under development
- Open to community and accessible via Intranet
- Free to entity
- User support is provided through educational programs and help-desk services
- Users acknowledgement required
- Disclaimer: BICF does not provide a scientific interpretation of the results generated by a pipeline

Educational Programs:

- Didactic lectures on a wide range of topics in bioinformatics (monthly to biweekly)
- Nanocourses (2-day course including didactic lectures and hands-on exercises) in a wide range of topics in bioinformatics
- Monthly Data Clinic

Helpdesk Consults:

- Daily 1-hour help desk consultation on a first-come-first-served basis. New users prioritized over repeat users. Free of charge. Examples of free helpdesk consult work includes:
 - Consultation re data access
 - Consultation re routine data analysis
 - Consultation re study design
 - Consultation re grant application
- Help desk consults needing more than brief interaction (such as the following) may also be scheduled. Such activity is offered on a fee-for-service basis at a rate of \$120 USD/hour, \$90 USD/hour for members of the Cancer Center: Examples of fee-for-service helpdesk work includes:
 - More involved data access
 - Performance of simple data analysis
 - More involved standard support in study design
 - More involved standard support with grant application
- Review and triage of projects toward program development and collaboration level as appropriate (see below)

Fellows Programs:

- Applications processed as defined on website (add link)
- Selection by Steering Committee
- Fellowship supported by PI
- IP created stays with fellow for publication and patenting
- Software products stay in BICF code repository and are accessible to all BICF programs for future development

Program Development:

- Applications via helpdesk consultation and/or inquiries to Executive Leadership
- Provision of bioinformatics expertise to newly forming project teams. This may include attendance of project meetings by an appropriately qualified BICF staff member as well as dedicated contributions to study design, acquisition of preliminary data, and participation in grant application.

- This service is free for members of the Cancer Center. The Executive Leadership, if necessary in consultation with the Steering Committee, will monitor the level of effort dedicated towards a specific project and assess the appropriateness of the service in relation to BICF's available capacity. More involved program developments may need to be negotiated on a case-by-case basis and may require contributions to FTEs of BICF personnel similar to the operation mode of Collaborations (see below). Non-members of the Cancer Center may make use of this service at the regular rate set for Helpdesk consults (see above).
- Prioritization of program developments will be on projects that have a high chance of evolving into a Collaboration (see below).

Collaborations:

- Application via helpdesk consultation
- Selection up to capacity, prioritization by Steering Committee
- FTEs of BICF personnel allocated; requirement of grant support by BICF collaborator
- Software products stay in BICF code repository and are accessible to all BICF programs for future development
- Authorship for BICF staff is negotiated on a case by case basis. In the situation of uncertainty or conflict the Steering Committee will be called as the arbitral.

Flagship Projects:

- Inquiries through members of Steering Committee or Executive Leadership
- Selected by Steering Committee
- Free to entity, BICF supported
- Authorship for BICF staff is negotiated on a case by case basis. In the situation of uncertainty or conflict the Steering Committee will be called as the arbitral.

E. PROJECT SELECTION

Steering Committee decisions are guided by the following objectives:

- offer equal opportunity to all UTSW researchers with priority for cancer researchers prioritize well-defined initiatives with high probability of success and impact, and
- prioritize initiatives that strengthen BICF's potential to further serve research at UTSW as a self-funded entity

F. HARDWARE AND SOFTWARE FEES

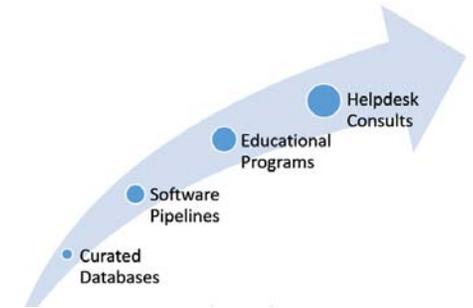
Hardware and software usage for Help Desk supported projects, fellowships, and flagship projects are free. Users will obtain a BioHPC account. For fellows, a limited number of high-end work stations and Thin Client workstations will be available in the office space of the Lyda Hill Department of Bioinformatics (E building, 4th floor).

For collaboration, usage of hardware and software is tracked. In case of high demand, hardware and software may need to be purchased by the collaborating entity. BICF staff, in consultation with the BioHPC team, will identify needs and determine suitability for deployment of computing and storage tasks through the local BioHPC infrastructure and/or cloud-computing services. Updated pricing structure for hardware for computing and data storage is published on the BioHPC website. The planning of hardware and software demands will be part of the discussion discussed on a project by project basis during the initial consultation.

Under all circumstances and without exception, upon termination of a project in any of the categories of BICF engagement, data created and/or stored will be migrated off BICF hardware. Cost, methods, and timelines for such work will be discussed during the initial consultation.

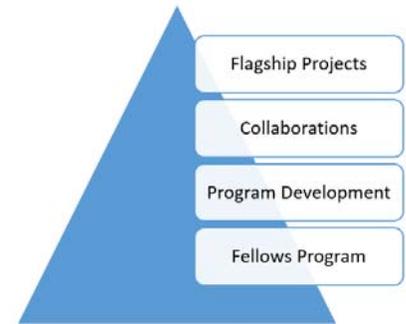
For ongoing computing and storage outside of an active BICF service modality defined above, please contact IR at (name and phone num) (GD meeting w IR re how they want these potential clients to flow into their operations for potential long term storage of data and getting one contact for such activity). Departments with BioHPC membership will be able to use their quotas for further access to the data.

G. Modes of Interaction Summary Tables



FOUNDATIONAL INTERACTIONS				
	Curated Databases	Software Pipelines	Educational Programs	Help Desk Consults
Access	Under development, will be open to community, accessible via intranet	Under development, will be open to community, accessible via intranet	Schedule posted on website (registration required for some activity)	First come / first serve; established via phone call, or web request, new users prioritized
Activity	Self-serve, user support provided via educational programs and help desk	Self-serve, user support provided via educational programs and help desk	Includes but not limited to: -didactic lectures -2 day nanocourses -monthly data clinics	Office hours, brief interactions: consults, simple analysis, design support, grant appln support
Cost	Self-service free; user acknowledgement required; support through educational programs, helpdesk, and collaborations	Self-service free; user acknowledgement required; support through educational programs, helpdesk, and collaborations	Free, BICF supported	Free consult; for additional support fee for service 90/hr cancer center 120/hr all other
Authorship	N/A	N/A	N/A	N/A
Data & Results	BICF does not provide a scientific interpretation of the results generated by a pipeline	BICF does not provide a scientific interpretation of the results generated by a pipeline	N/A	N/A
Software Related Products & IP	N/A	N/A	N/A	N/A

Modes of Interaction Summary Tables



TOP TIER INTERACTIONS				
	Fellows Program	Program Development	Collaborations	Flagship Projects
Access	Application process defined on website, selected by Steering Committee	Inquire via Executive Leadership or Helpdesk consultation; effort levels on individual projects will be monitored and appropriateness assessed re BICF's available capacity; if capacity limited, prioritization by Steering Committee	Application via helpdesk consultation; should capacity be limited, selection by Steering Committee	Inquire via members of Steering Committee or Executive Leadership, selected by Steering Committee
Activity	Project specific	Provision of bioinformatics expertise for newly forming projects	BICF FTE's allocated to specific projects	Project specific
Cost	Free; fellows supported by PI	Free for Cancer Center members; charges for more complex engagement will be defined on a case-by-case basis. Non-members of Cancer Center charged at Helpdesk consult rate (see above)	Entity covers % BICF FTE; during CPRIT funding Steering Committee can waive this for strategic research programs	Free, BICF supported
Authorship	First author with fellow, BICF co-authorship negotiated based on contribution, Steering Committee will arbitrate if needed	N/A	Negotiated per project; Steering Committee arbitrate as needed	Co-authorship of involved BICF staff; Steering Committee arbitrate as needed
Software Related Products & IP*	Software products stay in BICF code repository, are open sourced, accessible to all BICF programs for future development; IP resides with the fellow **	N/A	Software products stay in BICF code repository, are open sourced, accessible to all BICF programs for future development; IP resides with the collaborator	Software products stay in BICF code repository, are open sourced, are accessible to all BICF programs for future development; IP shared ownership
Data & Results	Belong to the fellow	N/A	Belong to the collaborator	Belong to the BICF

* all IP produced in the BICF is owned by UTSW

** in case of significant contribution by fellow, shared ownership may be considered