Academic Program Review
University of Washington
Biomedical and Health Informatics

Report of the Review Committee
4 June 2009

David Notkin (Committee Chair), Professor and Bradley Chair
University of Washington, Department of Computer Science & Engineering

Rodney A. Schmidt, Professor
University of Washington, Department of Pathology

Jennifer Turns, Associate Professor
University of Washington, Department of Human Centered Design and Engineering

Reed M. Gardner, Professor Emeritus & Former Chair
University of Utah, Department of Biomedical Informatics

George Hripcsak, Vivian Beaumont Allen Professor and Chair
Columbia University, Department of Biomedical Informatics

Executive Summary

The Biomedical and Health Informatics (BHI) division is an extremely good, young program. The Ph.D. program is especially strong with evidence including the receipt and renewal of a prestigious and competitive NLM training grant, an excellent and dedicated faculty, high-quality students, and a spirit of responsiveness that other UW units would do well to mimic.

The foremost question now facing BHI is, "How should we take the next big step?" They have laid a strong foundation for answering this question, and the answers must surely take into account their specific context. This context includes: (1) national matters including the rapid progress of informatics as a central pillar of medical research and practice and the recent investment of $19 billion in electronic health records; (2) and local, extraordinarily strong organizations ranging from the medical school, the other health sciences schools, the hospitals, and the Information School to the major biotechnology and high technology companies and institutes in the region (such as Zymogenetics, Microsoft, etc.). These, along with some outstanding faculty, provide a competitive-edge that BHI can and must exploit. BHI must now develop a vision of where they hope to be in five to ten years. This vision could include a deep and broad integration into the medical center, both using it as a laboratory and also influencing its use of informatics in every dimension, a significantly deeper integration in grants and contracts across the medical school and the health sciences schools to fundamentally enhance and enable leading-edge research that is increasingly dependent on informatics, and further establishing the national strength of the Ph.D. program. As one committee member stated, the vision must include a clear goal of "driving change in the practice of medicine."

Like all units at UW, BHI faces some challenges in both long-term and also day-to-day activities. On the funding side, BHI does not yet get its fair share of indirect cost returns due in part to the complexity and variety of its faculty appointments and in part due to the medical school culture, they should look more aggressively for private support and endowments, they should look at creating self-sustaining programs, and they should be even more aggressive in using their state funds to support the educational program while simultaneously enhancing the research program. Consolidated space is crucial to BHI to allow a broadly diverse Division to have a genuine home; incremental space is also essential to allow "core" faculty who are primary in other units to shift their primary appointment to BHI if desired.

A crucial step and challenge for BHI is to define a clear self- and external image. Because of the breadth of activities, both because of the nature of the program and also because of its relative youth, the BHI "story" tends to come across in a confusing way. A lucid characterization and image of BHI would enhance the substance of the program as well as increase its visibility. We note, explicitly, that it's far better to be where BHI is now – a great program with a somewhat fuzzy image – than in the opposite situation. Clarity in terms of vision might also help the program choose more effectively among the many opportunities it faces: virtually all of these opportunities are worthwhile, but nonetheless a characterization of priorities will be invaluable. In addition, these priorities should be influenced by a thoughtful look at potential collaborations that enhance BHI and UW's capabilities without competing with other UW units.

Make no mistake: BHI has, through hard work and exceptional intellect, created an excellent program that already does great credit to the field and to UW. And, with a modicum of support from UW and the medical school, the best is surely yet to come.

Summary of Process

The review process conformed to standard UW Graduate School Academic Program Review guidelines with respect to the production of the supporting documentation, creation of the committee, selection of the site visit dates, drafting and finalization of the committee's charge, and developing the schedule. Additional materials were provided upon request by the committee between the charge meeting and the site visit and some during the site visit, including BHI's plans to address the American Medical Informatics Association's (AMIA) recommendations for a Board Certification in Clinical Informatics, data on faculty grant and contracts applications (including in response to the recent NIH Challenge Grant program, part of the Federal stimulus package), some budget breakdowns of MEBI and BHI, etc.

The site visit was held on April 20-21, 2009, with all committee members present throughout (except for one UW member who had a teaching obligation during one session). The final schedule for the site visit is provided as an appendix: minor changes were made to this before and during the site visit, most notably short one-on-one sessions with Fred Wolf, chair of Medical Education and Biomedical Informatics, and with Peter Tarczy-Hornoch, division head of the BHI program. In addition, several scheduled people were unable to attend: these are noted in the appended schedule with ~~crossouts~~ (except for the student meeting, where we did not take attendance). Liz Williams, the Graduate and Professional Student Senate (GPSS) Chief of Staff, also attended the student meeting and asked one or two questions and reported to the committee that "GPSS sent out a survey to the department a few weeks ago and received 7 responses. They were generally positive, with the students highly satisfied with their departments."

We did not visit any BHI facilities, except for their cramped and poorly-ventilated but nonetheless "best ever" department and division conference room. The Department and Division were gracious hosts, including ensuring wonderful weather that allowed us to revive by eating our lunches outside.

Writing this report was a group effort done electronically in the weeks after the site visit.

Continuation Recommendations

We were specifically asked to "review the M.S. and Ph.D. degrees and graduate certificate program offered by the Department of Medical Education and Biomedical Informatics at the University of Washington (UW)." Our review focused heavily on the Ph.D. degree program, somewhat on the M.S. program, and not at all on the inactive certificate program. Consistent with the requirements of the charge letter, we recommend "continuing status with a subsequent review in 10 years."

UW Biomedical and Health Informatics

The University of Washington over several decades has developed a unique and exciting opportunity for graduate training of Biomedical and Health Informatics. Beginning in the 1980's the faculty at Washington started using computers to assist with Artificial Intelligence and Radiation treatment planning projects. Soon there were developments across the entire campus at Washington which included faculty from Medicine, Genetics, Library Sciences, Nursing, Hospital and Outpatient Medical Care, Pharmacy, Community Medicine, Public Health, Computer Science, and Bioengineering which developed a very decentralized and diverse set of collaborations in the field of Informatics. Several of these faculty members provided the vision and leadership to obtain State of Washington, Foundation, Regional, Federal and Private Grant funding to initiate unique and outstanding centers of excellence using Informatics techniques at the University. As a consequence, the Division of Biomedical & Health Informatics was established; the Graduate School of the University approved requests for MS and PhD Degrees in the field by the Division. The Division has now graduated 25 MS and nine PhD students.

In 2002 the Division (PI Dr. Tarczy-Hornoch) was awarded a prestigious National Library of Medicine "Informatics Training Grant" and this was renewed in 2007. The Division now has the capability of training its students in three broad and outstanding centers of emphasis:

A. Genomic and Translational Informatics – The recently established Institute of Translational Health Sciences funded by the NIH which includes three BHI faculty (Tarczy-Hornoch, Brinkley and Anderson) provides unique opportunities for Informatics students to be learn about, be involved with and contribute to this exciting new field.

B. Public Health Informatics – The leadership of the Informatics faculty (Dr. Fuller and others) and the newly established Center for Public Health Informatics provides a unique opportunity for BHI students. These opportunities include public health issues within the University healthcare setting, the State of Washington, the consortium of Washington, Wyoming, Alaska, Montana and Idaho (WWAMI region) as well as some recently established and growing Global Health initiatives.

C. Clinical Informatics – With newly obtained access to the Cerner Clinical Record System at the University of Washington Hospital; access to the Epic Health Records for outpatients; and a growing interaction with a broader community of Electronic Health Records (EHR) systems in the region, students have faculty support for and access to an unusually broad and exciting set of opportunities for research and development.

BHI has established a well rounded curriculum for its students to prepare them for the diversity of Informatics challenges of the future. The nature of the curriculum, in this rapidly changing field, requires changes and updates at frequent intervals. The faculty and its committees are sensitive to and responsive to these needs. Dr. George Demeris, Director of the Graduate Program, provides excellent organizational leadership for faculty and counseling for students in the Division.

Context: External

Biomedical informatics is becoming increasingly visible around the nation and is becoming critical to the mission of the academic medical center. The American Recovery and Reinvestment Act of 2009 is providing $19 billion to promote the adoption of electronic health records. This will create a demand for informatics-trained personnel (estimated at 35,000 by the American Medical Informatics Association), it will create new opportunities for informatics research in improving the quality and efficiency of health care, and it will promote the collection of enormous data sets for clinical research. Informatics methods are permeating basic and clinical research. Grant review committees are demanding informatics expertise for a wide variety of projects. Research data and findings are expected to be converted to a standardized format and to be uploaded to national databases. Analytic research methods are expected to be coded in open-source software and shared. To be competitive, researchers need to reuse other researchers' software, and they need to incorporate the knowledge embodied in the national databases into their own projects.

Universities are responding to this challenge by creating new centers, divisions, and even departments of informatics, recruiting associate professor-level faculty from existing departments. This has created a huge vacuum in existing departments. In New York City, for example, two major informatics research groups were created in the past year, pulling Informaticists from Mayo Clinic and from Vanderbilt University. In the past four years, four Columbia University informatics faculty members have gone on to create new informatics groups. This is excellent for the field but challenging for existing departments.

Context: Local

Biomedical informatics is a broad field with fuzzy borders. At the University of Washington, strong biomedical informatics activities are distributed in multiple schools, departments, and centers. Many of these predate the creation of BHI. There are particular strengths in the Schools of Nursing, Public Health, Medicine and the iSchool, as well as within Departments of Computer Science & Engineering, Biological Structure, Bioengineering, Genome Sciences, and Epidemiology. Activities are physically dispersed between the health sciences complex, upper campus, Children's Hospital, South Lake Union, and Harborview. Central computer support services for the medical centers (MCIS, now ITS) have been relatively unfriendly to investigational and developmental opportunities throughout most of the life of BHI. (As discussed below, this is changing in positive ways.)

Local strengths also include the local biotechnology community, including many companies that are University spinoffs, and local software companies that are eager to be more involved in the medical computing space (e.g. Microsoft).

Since its inception, BHI has formed strategic alliances with faculty across many of these schools, departments, centers, and across different physical locations. These partnerships are a strength of BHI as they draw together faculty with shared interests and provide an outstanding breadth of training opportunities for Ph.D. students. With the recent change in leadership at ITS, there is now much more openness by the medical centers computing systems to collaborative work with BHI.

Recommendations

We have a set of recommendations, at various levels of detail, for BHI and the broader University leadership. Most of these recommendations arise from two powerful tensions. The first is the program's youth, which provides enormous energy and excitement, yet still requires the care and feeding needed to build it into the mature unit it needs to become within the University. The second is the program's wide, interdisciplinary intellectual reach across much of the UW campus and beyond, including a physically dispersed community of faculty and students, juxtaposed with the need to be cohesive. The challenge will be to find balances that reap the benefits without suffering unnecessarily from the costs.

Recommendation: Enhance the Division's Vision and Image

BHI has several challenges and opportunities in its future. Two challenges that are distinct but intertwined are (1) defining a vision for where BHI should be in the upcoming decade and (2) defining an internal and external image that is consistent with this vision and that aids in achieving this vision.

As described above, BHI has an exceptional context from which to lay this vision: a wonderful program with great faculty and students combined with a fertile ecosystem, nationally and locally, for biomedical and health informatics research, education and funding. Information and Informatics are emerging as the glue that holds together the broad fields of medicine and medical care. Increasingly there will be a need for "Informaticists" to assist with and in many cases develop methods by which the health care system can be improved and research findings can be more promptly and effectively applied. The University of Washington is in a unique position to build on its present expertise to become a world leader in the field.

BHI itself must define the vision. It may well include a deep and broad integration into the medical center, both using it as a laboratory and also influencing its use of informatics in every dimension; a significantly deeper integration in grants and contracts across the medical school and the health sciences schools to fundamentally enhance and enable leading-edge research that is increasingly

dependent on informatics; and further establishing the national strength of the Ph.D. program. As already noted, the vision must include a clear goal of "driving change in the practice of medicine."

This vision will have to be supported by an effort to clarify BHI's image, both internally and externally. At present, BHI is viewed very positively by those who know of it, but not enough people and organizations know of it and some of those who do are unsure about many aspects of the program. (To ensure no confusion, we must state once again that it is far preferable to have a great program with a somewhat muddled image, than vice versa.) BHI has extraordinarily talented people and has national visibility within the biomedical informatics community, and it needs to achieve similar visibility locally. In particular, BHI needs to enunciate a compact formulation of what it is, as opposed to the current formulations which tend to run toward their widespread intellectual efforts and complicated organizational structure. As one committee member observed, "BHI presents a complex story as starting point; they need a simpler starting story (and leave it to the listeners to complicate)."

Recommendation: Improve the Division's Organizational Structure

The intellectual organization of BHI is not in sync with the formal organization of the University. Most committed faculty members ("Core" faculty) have primary programs, departments or schools other than in BHI. Many hold joint appointments in BHI, but many don't. Even for the medical school, where affiliations are often complicated, BHI's faculty roster is byzantine in structure. This makes it difficult for both participating faculty members and BHI to receive appropriate credit for their activities.

Consider two concrete examples.

- The allocation of indirect cost return funds is problematic: What units are involved when PIs from BHI submit grants? Where are the grants managed? There are a number of imaginable reasonable answers, but the current situation appears to be a jumble of one-off solutions based on discussions – and non-discussions – among chairs and center directors and administrators, often based on vague history. At present, BHI generally takes the short-end of this stick.[1]

- Several core faculty are not joint members in BHI –Linda Shapiro (Professor in Computer Science & Engineering and in Electrical Engineering) is one example. This is terrific for BHI in the sense that they get a dedicated, active faculty member "for free" (and for Professor Shapiro, who doesn't have formal obligations to yet a third unit); however, it is risky to rely heavily on faculty whose home units may have relatively little interest in or ability to replace them with another BHI core faculty member when they depart.

Over time, BHI needs to consolidate its faculty in the sense of having more faculty with primary appointments within BHI. This will help mitigate problems with research fund flow and "credit." Also, current faculty with primary appointments in BHI need to work to assure that more grants are administered through BHI. This may require vigorous activity on the part of the MEBI chair to negotiate agreements about grant distribution with other organizational units.

The précis for the organizational discussion, in both comments we heard and also questions we asked, focused on, "Should BHI become a department?" This is a complicated question that raises issues of structure, finances, space, history, current events, politics, personnel, and perhaps even intellectual scope. Another version of the question is, "Does the current structure allow the faculty and students to

[1] It is significant that several dedicated core faculty members argue to feed their indirect costs to the centers and colleges in which they hold appointments; this surely does not make it easier for BHI to argue for indirects, but it reflects politics at least as much as policy.

have a home that provides easier and more natural opportunities for intellectually important interactions among faculty and students?"

It seems clear to us that the current structure of BHI as a Division within MEBI has a limited lifetime in terms of the general movement nationally towards BHI-like departments and in terms of the local needs for BHI. We anticipate that in the foreseeable future the overall structure of (MEBI and) BHI will need to change to ensure that BHI will have appropriate national and local visibility and to enable it to become even more effective. Although we fully anticipate a change in organizational structure, it could become all too easy to allow this to dominate the core intellectual issues; any action in this arena must be managed thoughtfully and with all critical stakeholders at the table from early on.

Recommendation: Consolidate and Increase Space for BHI Faculty and Students

BHI has specific and substantial justifications of its space needs.

The first recommendation is to consolidate its space. As mentioned previously, it has faculty (core and otherwise), students and staff in nooks and crannies and trailers; this complicates the intellectual interactions needed to further enhance the research and educational goals of BHI. Biomedical and health informatics, as a broad and interdisciplinary field, will never be able to collocate all people dedicated to its mission. At the same time, the present situation is untenable and more of the core people need to be brought much closer to one another.

The second recommendation is the need for some additional space. There are core faculty with primary appointments in other units who explicitly stated that they have intellectual connections that are much stronger with BHI but that they cannot move their primary appointment due to the lack of space. When space unequivocally precludes a more appropriate structure, it must be addressed. Note that there are other additional needs for office and laboratory space, but in this recommendation the specific issue is to find additional space for core faculty who wish to be collocated with other BHI faculty.

The third recommendation is for the Dean's office: the committee understands the general complexity of space and space allocation, but we do not understand why the Dean's office cannot provide a much more explicit roadmap to BHI about what must be contributed in terms of grants, private fundraising, etc. to make consolidation and expansion of space possible. We found answers to questions like these evasive and cannot imagine how a chair or a division head can lead effectively without additional clarity.

Recommendation: Continued Retention of the NLM Training Grant

Let there be no confusion whatsoever about the absolute criticality of continuation of the NLM Training Grant to the success of BHI. Even though the grant does not drive all intellectual aspects of BHI, it provides a financial and reputational foundation that cannot be overstated. BHI, MEBI, the Dean's office, and the University as a whole must share this clarity.

Recommendation: Become More Actively Engaged in Developing and Evaluating Electronic Health Records

The committee is certain that Electronic Health Records is a golden opportunity for BHI and the broader university. Projecting to the future of "informatics" in medicine, having access to and ability to use and interact with the data collection, storage, coding, knowledge management, and decision-support in medicine all require access to "real patient data." And UWMC – specifically, its proximity and current organizational structure – provides this opportunity in spades. After initial discussions with the UWMC Information Technology Services (ITS) leadership during the review, and after a number of extensive

electronic and phone interactions afterwards, it became evident that BHI and ITS both understand this opportunity, the necessity of pursuing it aggressively, and indeed have taken genuine steps in this direction.

At the same time, the committee, especially the outside experts, were surprised by the inconsistencies in what is happening between BHI and ITS compared to what could be happening. The external materials and the first full day of the review conveyed little or nothing about the existing and planned interactions between these units. We have concluded that the faculty and the students do indeed have an opportunity – already exploited to some degree, which is terrific – to work with ITS and have access to and work with the medical center's information systems. We cannot overstate the importance of this opportunity – one that was previously impossible due to a less friendly and opaque approach to UWMC's ITS: in addition to the obvious and profound benefits to clinical informatics, electronic health records and having access to them will provide remarkable opportunities for the other two key divisional areas of excellence, Public Health Informatics and Translational Medicine. Both of these areas can be enhanced by having intelligently coded and high quality data.

BHI must establish even stronger personal, academic and research relationships in the EHR area. Furthermore, this issue may relate in part to the "image" recommendation – what happens is most important, but how what is happening is conveyed is also important. The committee's confusions surrounding electronic health records, BHI and ITS are likely shared by other stakeholders and might in turn compromise to some degree efforts to establish deeper relationships.

Recommendation: Conduct Faculty and Leadership Planning

A number of core faculty contribute energetically and effectively to BHI's activities, and few if any of them of them are easily replaceable. A few warrant specific note, although we note unambiguously that this is an incomplete list – virtually all BHI faculty are onboard and pushing BHI's missions.

Because BHI is such a strongly interdisciplinary and dispersed unit, and Dr. Tarczy-Hornoch has been so instrumental in drawing it together in terms of intellect, hard work, vision and managerial acumen, his retention is essential to the viability of the division in the near-term. (Of course we assume that his strengths in leading BHI have been noticed externally.) Other BHI faculty are also particularly strong and should be specifically encouraged, mentored, retained and promoted. Professor Demeris is clearly a strong asset to BHI, and Drs. Kalet and Fuller continue to provide leadership and inspiration.

Recently hired junior faculty members are bright and engaged. Their research areas appear to be well-tuned with the division, offering the right blend of focus and diversity. They are getting good to exceptional teaching evaluations and are contributing in substantial ways to the teaching mission of the department. The junior faculty report that they are being mentored. When asked what they would need to accomplish to get promoted, they responded with fairly concrete criteria (covering 70% of their salaries with grants, and publishing 10 papers, etc.). It's hard to tell if this is what they are told or if this is what they hear, but in any case they (and BHI) would benefit from a broader view of success: they need to have uniquely innovative research, the research needs to have significant impact, they need to publish in top journals (even in journals such as JAMA, NEJM, Nature, Science, AJPH), and they need to obtain sustained competitive funding with grants such as R01s. The group of junior faculty represents a lever point for the culture of the entire faculty. Expectations for grant writing and other fund raising and for publishing can be set with the junior faculty, and this can set a precedent for the entire group. Continued and aggressive grant writing – perhaps as many as four-six major grant proposals per year – is a reasonable expectation for faculty members at this stage of their careers.

A quickly maturing program such as BHI spends virtually all of its time on getting things done, as it should. At the same time, especially with the difficulties with wildly different appointment situations and poor physical proximity, BHI must begin to consider leadership planning both to lessen the cost of particularly critical people leaving (for whatever reason) and also to more easily share responsibilities somewhat more evenly among the faculty. Apprenticing and mentoring faculty is a sometimes difficult and time-consuming activity, but one that is necessary, valuable and often rewarding. It is also a chance to share not only knowledge, but also culture, which is again an especially important activity for BHI to grow as a cohesive unit.

As a slightly related observation, the staff has generally seen relatively rapid turnover. This makes leadership development at the faculty level more difficult; so staff development and retention should be looked upon not only as good in and of its own right, but also as key to faculty leadership development. Kelly McNeill, the administrator, impressed us and should be considered to be a key piece of the unit's leadership; staff like Ms. McNeill can often provide more insight into what is going right and what is going wrong on the ground than can faculty.

Recommendation: Consider Augmenting Masters Program and Clinical Informatics Programs

With a strong national emphasis on making medical care more efficient and national funding initiatives to support development and deployment of electronic healthcare records, this could be a very opportune time to enhance the existing Masters program to become a professional Masters program in Biomedical Informatics. If organized to leverage the courses already extant for the doctoral program and if based on student-provided funding, this could expand the visibility of BHI, promote its educational mission, and help the financial state of the division. Such a degree could, in principle, be offered both locally and via distance learning for the growing number of professionals who will be needed in the future to implement Electronic Health Records and provide the expertise to help improve the quality of health in the United States and the World.

The unit is clearly aware of the need to increase the Masters program; the committee recognizes that this is only one way in which to proceed, although we also recommend strongly that the merits of this approach be seriously considered.

Another self-sustaining program that the unit might consider is one that focuses on the development and training of physicians who would become Board Certified in the field of Clinical Informatics. The American Medical Informatics Association (AMIA) has developed requirements for and made recommendations for Training programs to establish a Board Certification for Physicians in Clinical Informatics. Although it is likely that the approval of Clinical Informatics for physicians will take a few years, the University of Washington, with its BHI and clinical facilities and physician training programs is in an ideal position to be a leader in this area.

Recommendation: Improving professional development for graduate students

One of the strengths of BHI is its recurrent intentional, thoughtful, and introspective review of the curriculum. They have been highly responsive to student criticism; weaknesses in current course instruction are being addressed. While we laud such activity, the current state of the curriculum does not seem to warrant an "overhaul" of the type in which some BHI faculty are currently engaged. It may be more fruitful to conserve faculty resources in order to address organizational emphasis, image, and a professional Masters program.

Given the stable state of the curriculum, this frees resources to focus more explicitly on student professional development. Consistent with the meeting with the graduate students and with the GPSS report, we recommend that BHI ensure that there are sufficient opportunities to help the students get the professional development they need. That is, the students need more information on possible careers, opportunities in various sectors, etc. It may be that effective advice is already available but some students are unaware of it; in any case, it is a reasonable concern that is on the students' minds and can be addressed fairly easily. In addition, we recommend that BHI consider letting students more flexibly make use of their three years of NLM support such as letting them defer one year of their NLM support (by taking on a TA or RA position in the intervening period) so that they can call upon the extra year of funding during the period in which they are actively engaged in their own dissertation activities.

Appendix: Final Site Review Schedule

UNIVERSITY OF WASHINGTON
The Graduate School
Department of Medical Education and Biomedical Informatics
Program Review Site Visit
April 20-21, 2009
AGENDA

SUNDAY, APRIL 19	
6:45 p.m.	Dinner and Executive Session – Review Committee Anthony's Homeport Restaurant (Shilshole Bay) 6135 Seaview Ave NW

MONDAY, APRIL 20	**I-264K Health Sciences Bldg**
8:30- 9:30 a.m.	Fred Wolf, PhD, Professor and Chair Medical Education and Biomedical Informatics Adjunct Professor, Health Services and Epidemiology Peter Tarczy-Hornoch, MD, Professor and Division Head, Joint Professor, Neonatology and Biomedical Informatics Adjunct Professor, Computer Science and Engineering
9:30-10:00am	George Demiris, PhD Graduate Program Director, BHI Joint Associate Professor, Biobehavioral Nursing and Health Systems and Biomedical Informatics Director, CIPCT Program
10:00–10:15am.	**Break**
10:15 – 10:45	Ira Kalet Joint Professor, Radiation Oncology and Biomedical Informatics Adjunct Professor, Bioengineering, Biological Structure, and Computer Science and Engineering Chair, BHI Educational Oversight Committee
10:45-11:30am	**Core Faculty Full Professors** Jim Brinkley, MD, PhD Joint Professor, Biological Structure and Biomedical Informatics Adjunct Professor, Computer Science and Engineering Sherrilynne Fuller, PhD Joint Professor, Information School and Biomedical Informatics Adjunct Professor, Health Services Former Health Sciences Library Director Linda Shapiro, PhD Joint Professor, Computer Science and Engineering and Electrical Engineering Adjunct Professor, Biomedical Informatics

11:30-12:30 p.m.	**Lunch –** Review Committee (Catered to conference room)
12:30-1:15pm	**Core Faculty Associate Professors** John Gennari, PhD Associate Professor, Biomedical Informatics Bill Lober, MD Joint Associate Professor, Biobehavioral Nursing and Health Systems and Biomedical Informatics; Associate Director, CPHI Wanda Pratt, PhD Joint Associate Professor, Information School and Biomedical Informatics
1:15-2:00pm	**Core Faculty Assistant Professors** Neil Abernethy, PhD Joint Assistant Professor, Biomedical Informatics and Health Services Nick Anderson, PhD Acting Assistant Professor, Biomedical Informatics Associate Director, Biomedical Informatics Core, Institute of Translational Health Services Anne Turner, MD Joint Assistant Professor, Biomedical Informatics and Health Services
2:00-2:30pm	**Key Administrative Staff** Yu-Chan Chao, MBA Grants Manger, Medical Education and Biomedical Informatics Kelly McNeill, MSEd Administrator, Medical Education and Biomedical Informatics Sandy Turner, Program Coordinator, Biomedical Informatics
2:30-2:45pm	**Break**

2:45-3:15pm	**Medical Education and Evaluation Affiliate Faculty** Doug Schaad, PhD Associate Professor, Medical Education and Biomedical Informatics ~~Craig Scott~~, PhD Professor, Medical Education and Biomedical Informatics
3:15-3:45pm	**Affiliate Faculty Meeting** Peter Myler, PhD Member, Seattle Biomedical and Research Institute (SBRI) Affiliate Professor, Biomedical Informatics Research Professor, Pathobiology Affiliate Research Professor, Global Health ~~Valarie Daggett~~, PhD Professor, Bioengineering Adjunct Professor, Biochemistry and Biomedical Informatics ~~Kenric Hammond~~, MD Clinical Associate Professor, Psychiatry and Behavior Science Adjunct Clinical Professor, Biomedical Informatics Eugene Kolker, PhD Affiliate Associate Professor, Biomedical Informatics Chief Data Officer, Seattle Children's Hospital Head, Bioinformatics & High Throughput Data Analysis Lab President and Director, the BIATECH Institute
3:45-4:15pm	**Core Faculty Lecturers** Brian Brown, PhD Lecture and Graduate Program Operations Manager, Biomedical Informatics David Masuda, MD Joint Lecturer, Biomedical Informatics and Health Services
4:15-5:15pm	**Doctoral and Master's Student Meeting** **E216 Health Science Classroom** Alan Au, Pre-Doctoral Noah Benson, Pre-Doctoral, NLM Trainee Denny Bromley, Pre-Doctoral, NLM Trainee Eithon Cadag, Pre-Doctoral, NLM Trainee Daniel Capurro, Pre-Doctoral Melissa Clarkson, Pre-Doctoral, NLM Trainee Walter Curioso, Pre-Doctoral Mike Galdzicki, Pre-Doctoral, NLM Trainee Alisha Guidry, Pre-Doctoral, NLM Trainee Rebecca Hills, Pre-Doctoral, NLM Trainee Rupa Patel, Pre-Doctoral, NLM Trainee Deanna Petrochilos, Pre-Doctoral, NLM Trainee

	Blaine Reeder, Pre-Doctoral, NLM Trainee Steve Rysavy, Pre-Doctoral, NLM Trainee James Tufano, Graduated March 2009

.

TUESDAY, APRIL 21	**I-264K Health Sciences Bldg**
8:30-9:00am	**Faculty Student Mentors** Melissa Austin, PhD (Mentor, Terry Shen) **Professor, Epidemiology** **Adjunct Professor, Bioethics and Humanities** **Adjunct Professor, Medicine** Joint Member, Public Health Sciences, Fred Hutchinson Cancer Research Center Director, Institute for Public Health Genetics (IPHG) Dan Cook, MD, PhD (Mentor, Max Neal) Research Professor, Physiology & Biophysics and Biological Structure William Noble, PhD (Mentor, Eithon Cadag) Associate Professor, Genome Sciences and Computer Science James Ralston, MD, MPH (Mentor, JimTufano) Assistant Investigator, Center for Health Studies, Group Health Cooperative Affiliate Assistant Professor, Health Services ~~William Jones~~ (Mentor, Andrea Civan) Research Associate Professor, Information School Chris Carlson (Mentor, Terry Shen) **Affiliate Assistant Professor, Epidemiology** Assistant Member, Fred Hutchinson Cancer Research Center
9:00-9:30am	**Break**
9:30-10:00am	**Meeting with Faculty Leaders/Partners from the School of Nursing** Brenda Zierler, PhD Associate Professor, Biobehavioral Nursing and Health System Associate Dean of Technology Innovations in Education and Research Adjunct Associate Professor, Surgery, Vascular Division, School of Medicine; Adjunct Associate Professor, Health Services, School of Public Health Adjunct Associate Professor, Medical Education and Biomedical Informatics
10:00-10:30	**Meeting with Faculty Leaders/Partners from the Information Technology Services** *(Note: Drs. Chou and Fine maybe a few minutes late – they are coming from another meeting)* David Chou, MD Professor, Laboratory Medicine Adjunct Professor, Medical Education and Biomedical Informatics COO, UW Medicine Information Technology Services Jim Fine, MD Professor and Chair, Laboratory Medicine Adjunct Professor, Medical Education and Biomedical Informatics CIO, UW Medicine Information Technology Services John T Slattery; PhD Vice Dean, Research and Graduate Education, School of Medicine

	Professor, Pharmacology and Medicine
10:30-11:00am	**Meeting with Faculty Leaders/Partners from Public Health** Sherrilynne Fuller, PhD Joint Professor, Information School and Biomedical Informatics Adjunct Professor, Health Services Former Health Sciences Library Director ~~Mark Oberle~~, MD, MPH *(via phone)* **Associate Dean, SPHCM** **Professor, Health Services** **Professor, Epidemiology** **Professor, Global Health** **Adjunct Professor, Medical Education & Biomedical Informatics**
11:00-11:30am	**Post Doctoral Students** Barry Aaronson, MD, PhD, NLM Post-Doctoral Trainee Imre Solti, MD, PhD, NLM Post-Doctoral Trainee Kent Unruh, PhD, Pratt Research Group
11:30 a.m.-12:15 p.m.	**Lunch** – Review Committee – (Catered to conference room)
12:15-2:00 p.m.	**Review Committee Executive Session**
2:00-3:00 p.m.	**Exit Discussion:** Fred Wolf, Professor and Chair, Department of Medical Education and Biomedical Informatics Peter Tarczy-Hornoch, Professor, Department of Medical Education and Biomedical Informatics George Demiris, Associate Professor and Graduate Program Coordinator, Department of Medical Education and Biomedical Informatics John Slattery, Vice Dean, Research and Graduate Education, School of Medicine Douglas Wadden, Executive Vice Provost for Academic Affairs and Planning, Office of the Provost James Antony, Associate Dean, Academic Affairs and Planning Augustine McCaffery, Senior Academic Program Specialist, The Graduate School
3:00-4:00 p.m.	Review Committee and Administrators without Department faculty
4:00-4:30 p.m.	Committee debriefing after discussions with faculty and administrators