

**EVALUATION REPORT  
OF THE IAIMS PLANNING GRANT  
OF THE UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY**

August, 1999

The achievement of the five aims set forth by UMDNJ the original grant and the development and publication of an institutional IAIMS strategic plan constitute the outcomes that were used to measure the achievements of the university's three-year planning effort. The evaluation team at UMDNJ was composed of Dr. Cecile Feldman, the principal evaluator; Dr. Pamela Matheson, and Dr. Cynthia Baur. Evaluation methods included survey, in-depth interviews, observation, and document analysis. The team collected information about the planning process from the following sources:

1. Planning grant application

The application provided information about the university's proposed activities and intentions. This information became part of the benchmark against which the evaluation team assessed the university.

2. Written notes from committee meetings

Evaluators reviewed meeting notes to collect information about each committee's activities, such as who attended meetings, the topics that were discussed, the points of agreement and disagreement among committee members, and the information that the committee used to make decisions.

3. In-depth interviews with Co-Directors, Committee Co-Chairs and the Project Coordinator

Individual meetings were held with the three Co-Directors, fourteen Planning Committee Co-Chairs, and the Project Coordinator and asked each a standard set of questions about committee activities and the IAIMS effort at UMDNJ. The interviews elicited specific information about how committees carried out their work, their accomplishments and problems, interactions between the Planning and Steering Committees, the UMDNJ environment, and the impact of IAIMS on UMDNJ

4. Observation of IAIMS meetings/events

The IAIMS symposia on April 22, 1998, in Newark, NJ, and the December 21, 1998, Steering Committee meeting in New Brunswick, NJ were observed. During the Steering

Committee, the Dean of the School of Health Related Professions presented the proposal for the Center for Health Informatics and the Planning Committee Co-Chairs presented drafts of their final reports.

#### 5. Written survey of members of Planning Committees

A survey was developed for the committee members based on information from the written materials and interviews with the Co-Chairs (see Appendix 2 for survey form). Members were asked about their experiences on the committee and their impressions of IAIMS at UMDNJ. A database was created and SAS, a statistical software package was used to analyze responses (SAS, SAS Institute, Cary NC).

#### 6. Evaluation team meetings with the Co-Directors

The evaluation team met four times with the Co-Directors to discuss the progress of the evaluation. The comments and suggestions of the Co-Directors became part of the data used in analysis.

#### 7. Electronic mail

Copies of electronic mail messages that the IAIMS Project Coordinator exchanged with Co-Chairs and committee members, as well as messages sent by IAIMS participants in response to postings on the UMDNJ IAIMS website, were reviewed for information about the planning process and its accomplishments.

**Outcome 1: Envision and articulate the future of UMDNJ as the “Virtual University of the Health Sciences (VUHS)”**

Through the interviews, evaluators attempted to establish if IAIMS participants had developed a vision of the Virtual University of the Health Sciences (VUHS) and if others shared the vision. The grant application states that the VUHS concept “envisions making all vital information resources, including clinical data with appropriate sensitivity to security, transparently accessible system-wide” (p.88). Co-Directors and Co-Chairs were asked specifically, “What does the concept of a ‘Virtual University of the Health Sciences’ mean to you?” There was one phrase – “anytime, anywhere” - that appeared frequently in participants’ comments and committee meeting notes but it was not universally used nor fully conceptualized in the formal verbal or written reports. Some of the committee reports used the term and indicated that this phrase related to access of the UMDNJ community, research faculty and students. The range of responses indicates however, that although there is some overlap in the reported definitions, the IAIMS leadership was, at the time of the interviews, continuing to formulate and ascertain agreement on a common definition of the VUHS aim. The final report lists a variety of collaborative and technologically advanced activities which are viewed as making VUHS a reality.

**Outcome 2: Conduct a comprehensive informatics strategic planning process**

The UMDNJ IAIMS application includes a description and matrix of the proposed planning process at the university, as well as a strategic planning model. The PI and Co-Directors used the outline to organize planning and elements of the strategic model were incorporated in the Planning Committees’ charges. The process began with the formation of several committees that included a committee of the PI, Co-Directors and the IAIMS Project Coordinator; seven Planning Committees with two Co-Chairs each; and a Steering Committee, which included the PI, Co-Directors and the fourteen Planning Committee Co-Chairs. Planning activities were based in these committees and in the IAIMS Planning Office. The following table summarizes committee name, number of meetings, meeting formats and means of communication by committee (See Table 1).

Table 1. Description of Committee activities.

<b>Committee</b>	<b># of meetings</b>	<b>Meeting medium</b>	<b>Other means of communication</b>
Administrative systems	2	FTF*	Email
Clinical systems	5	FTF 2 video	Listserve
Educational resources	7	Video	
Information policy	4	FTF	Email
Research	2	FTF	Email
Scholarly	3	FTF	

resources		1 video	
Technology resources	4	FTF 1 video	Website

Note: \*FTF: face to face

Committees were expected to meet as needed to accomplish their work. The Co-Directors and the Planning Office Coordinator met approximately every three weeks. Due to the comprehensiveness of the IAIMS planning structure, it became the umbrella for the majority of IT-related activities at the university. The following table explains four categories of activities - IAIMS/scheduled & unscheduled and non-IAIMS/scheduled & unscheduled – that were identified in the data collected during the evaluation. The four categories are useful to understand the variety and loci of informatics planning and work at the university during the period of the grant (see Table 2). The evaluation report focuses primarily on the IAIMS scheduled and unscheduled activities because they are the ones most directly related to the planning process and the achievement of the specific aims.

Table 2. Categories of informatics planning during the grant period.

<b>Informatics Activity Category</b>	<b>Definition</b>	<b>Examples</b>	<b>Documentation</b>
<b>IAIMS/scheduled</b>	Activities devoted to achievement of IAIMS goals, set to occur at times agreed on by participants, and typically with an agenda	Steering and Planning Committee meetings	Written notes, verbal reports of participants
<b>IAIMS/unscheduled</b>	Activities devoted to achievement of IAIMS goals, not set to occur at specified times and without an agenda	Daily activities of the IAIMS Planning Office	Connexions, symposia, email messages, verbal report of Planning Coordinator
<b>Non-IAIMS/scheduled</b>	Activities devoted primarily to non-IAIMS goals but in which IAIMS becomes a topic, also set to occur at times agreed on by participants, and typically with an agenda	Faculty practice group meetings, meetings with technology vendors	Written notes, verbal reports of participants
<b>Non-IAIMS/unscheduled</b>	Activities devoted primarily to non-IAIMS goals but in which IAIMS becomes a topic, not set to occur at specified times and without an agenda	Spontaneous conversations, informatics system development by someone not part of IAIMS planning process	Written reports and notes, verbal reports of participants

### *Success of planning process*

Committee members were asked to rate the overall success of their respective planning committees. The majority of respondents say that their committees were “somewhat successful.” About one-quarter rate their committees as “successful,” and ten percent (10%) experienced their committees as “very successful.” Only six percent (6%) report that their committees were “not at all successful.” Members’ perceptions of committee success differed by committee (see Table 3).

Table 3. Committee members' evaluation of success (in numbers of members)

<b>Committee</b>	<b>Not at all successful</b>	<b>Somewhat successful</b>	<b>Successful</b>	<b>Very successful</b>	<b>Total</b>
Administrative		4	2		6
Clinical	1	5			6
Educational Resources		5	4	1	10
Information policy		2	3	2	7
Research		6			6
Scholarly resources		3	2	2	7
Technology	1	4	1		6

Based on Co-Chairs' remarks, one difficulty shared by most committees was developing a consensus about the types of projects that IAIMS should foster in each of their areas.

### *Charges*

In consultation with the Planning Committee Co-Chairs, the Co-Directors selected members of the planning committees and developed the committees' charges. The majority of the Co-Chairs report that the charges were of limited value in deciding how to organize and direct committee work. One Co-Chair felt that it was too difficult to get committee members to focus on the strategic issues raised by the charges; instead, members wanted to talk specific technologies and "gadgets." This Co-Chair described members as thinking locally, not globally and comments from other Co-Chairs concurred. One explanation which was supported by responses given during the interviews could be the Co-Chairs' reliance on their previous experience to shape their understanding of the committee's scope and agenda. Most Co-Chairs indicated that they relied on one or some combination of the following elements: previous work and/or current experiences in the university, or participation in AcITAC (Academic Information Technology Advisory Committee), the university-wide advisory committee to Academic Computing Services. For example, one Co-Chair stated that identifying stakeholders and doing environmental scans were second nature because of ordinary work responsibilities. The Co-Chair relied on experience to make decisions about how to direct committee members' attention. The corresponding Co-Chair seconded this approach with the comment, "We used our own experience and background to decide on the work plan. We floated decisions by the committee, solicited feedback, and then went to the next item. We tried to be inclusive...we had to make decisions to keep things moving along." Similarly, those from the library staff who participated in IAIMS planning said that their daily responsibilities brought them in frequent contact with IAIMS issues and gave them an immediate sense of what needed to be done. One described it as being "closer to the heartbeat," which the

person claimed to be an advantage. Finally, one set of Co-Chairs was explicit that common experiences with AcITAC and other technology related committees in the university facilitated the committee's functioning. Even though AcITAC's mandate is not nearly as expansive as IAIMS, those who have participated in AcITAC appear to have developed shared understandings about technology's importance and use that carried from one venue to another and shaped the committee's interpretation of what is needed throughout the university.

AcITAC also was a factor in shaping participants' perceptions that certain types of work, specifically cross-organizational, were possible in the university. One Co-Director referred to the "AcITAC tradition" to explain how the leadership envisioned bringing people together in a collaborative effort necessary for IAIMS planning to occur. In a material sense, AcITAC gave birth to IAIMS because AcITAC sponsored IAIMS pre-planning activities. Participants also envisioned that AcITAC would continue to play a nurturing role because they recommended that AcITAC act in an advisory capacity to the nascent Informatics Center proposed in Aim 3. In other words, it would be difficult to understand participants' expectations of IAIMS' accomplishments without reference to AcITAC and its role in forming a core of like-minded people who believe that they can successfully collaborate and get others to collaborate as well.

However Co-Chairs arrived at the committee's work plan, committee members' responses in the written survey indicate that they think the Co-Chairs successfully communicated what needed to be accomplished and followed through on their plans. Seventy-eight percent (78%) of responding committee members agreed or strongly agreed that they clearly understand their own committee's charges, and sixty-three percent (63%) said that their own committees successfully met their charges. In addition, seventy-one percent (71%) reported that the Co-Chairs were very effective in organizing committee work.

#### *Organization of committee work*

In their survey responses, committee members confirmed that the Co-Chairs tried to create positive conditions to generate participation. Eighty-seven percent (87%) of responding members reported that the Co-Chairs conveyed a sense of importance about committee activities, and ninety-one percent (91%) said they felt that the Co-Chairs and other committee members valued members' participation. Also, sixty-eight percent (68%) members agreed that their own bosses made the members' participation in IAIMS committee work a very high priority. In contrast, however, only about half of respondents agreed that they themselves made their own participation in IAIMS work a very high priority, and over half agreed that they did not feel a sense of urgency about the IAIMS project. In comparison, sixty-one percent (61%) felt that the Co-Chairs conveyed a sense of urgency.

#### *Relationship with planning grant management and committee structure*

In general, the Co-Chairs found the most helpful component of the planning structure to be the IAIMS Planning Office and in particular the IAIMS Project Coordinator. The Project Coordinator was a reliable source of assistance and information, and a gentle but firm prod that kept the committee process alive. The Project Coordinator scheduled committee meetings, took and distributed notes, managed intra and inter-committee correspondence, and met with Co-Chairs as needed to help them with their work.

Access to all parts of the planning process made the Project Coordinator a vital communication conduit in the planning structure. In addition to all the communicative activities described above, the Project Coordinator also published the university's newsletter about IAIMS, organized IAIMS symposia, met regularly with the Co-Directors, and sat on other university committees, e.g. the Educational Technology Subcommittee of AcITAC. The Project Coordinator also wrote, distributed and archived email among herself, Co-Chairs and committee members, and managed committee listserves and the IAIMS webpage. As the one person who regularly met with all the various planning committees and Co-Directors, the Project Coordinator carried information back and forth and evolved into a link among them in a way that the Steering Committee was not.

The Co-Chairs did not evaluate their participation in the Steering Committee as positively as their contact with the Planning Office. Co-chairs would have liked to have used the Steering Committee meetings as a forum for active discussions of issues, concerns, problems and plans. One Co-Chair noted that Steering Committee sessions could be used to assist in cross-fertilization among the committees. Another Co-Chair suggested an interim retreat to discuss what had happened and where to go next.

The Co-Directors expressed different but not incongruent views of their role and the role of the Steering Committee. One Co-Director itemized their functions: 1) facilitate process; 2) provide overview of what was going on; 3) summarize and feedback what they were hearing; 4) shepherd implementation grant; and 5) represent the academic community and be aware of needs. Another Co-Director thought that their role was to educate and train Co-Chairs so that they were at the same level in terms of experience and expectations. This Co-Director clearly described the training component of their work: to prepare Co-Chairs to be leaders in their own institutions. The third Co-Director talked about the Co-Directors' ability to operationalize the vision articulated in the proposal. In addition, according to the third, Co-Directors were supposed to provide some oversight and management of planning activities.

#### *Outcomes of committee work*

Each of the seven Planning Committees produced a final report that was used to develop the university's IAIMS' plan. In addition, participants' comments indicate that working together in committees also fostered a stronger sense of "university-ness" (see Outcome #6, IAIMS' impact on the university). "University-ness" seems to represent the feeling that there are commitments and loyalties to a larger entity beyond one's individual unit,

however participants identify it, e.g. department, school, campus. For many respondents, “university-ness” was a new sensation. Several Co-Chairs said they had made useful contacts through committee work and they hoped to stay in contact with members after the planning phase has formally ended. In other words, they perceived that their participation might change their communication networks within the university structure, which has important consequences for how information moves through the university and alliances form among individuals and groups. Other products of committee work are listed below.

Policy: Four draft policies

Education: Ranked strategic directions, baseline data from surveys

Administration: Technical recommendations

Technology: Technical recommendations

Research: Databases

Clinical: Identified strategic directions

Scholarly resources: Articulation of six major goals

### **Outcome 3: Develop the framework for a University-wide Academic Health Informatics Center**

The plan committed the IAIMS planning group to the development of a strategic plan for a Center for Health Informatics at UMDNJ. The Dean of the School of Health Related Professions presented a draft plan to the Planning Committee Co-Chairs at the December 21, 1998, Steering Committee meeting. The Co-Directors had developed the draft. One of the main issues for debate is the relationship of the Center to the rest of the university. IAIMS participants wondered how the Center would be affiliated with different units in the university and the representation that the Center would have on each campus. The Co-Chairs discussed the proposal and offered to work with the Dean on revisions of the draft plan. A revised plan which deals with the aforementioned issues is being submitted to the UMDNJ Board of Trustees.

### **Outcome 4: Formulation of organizational policies**

The aim of policy development was to create draft policies to address the range of legal, ethical, and technical considerations of an IAIMS. The plan envisioned that the policy committee would identify the issues, examine policies from other universities, and draft policies that would be circulated at UMDNJ for comment. The ultimate goal is to develop policies that become part of the university’s strategic plan.

At the time of evaluation, the policy committee had developed draft documents in Educational Use of Copyrighted Works; Rights and Responsibilities for the Use of University-Accessed Electronic Information Systems; University Information Management Policy; and Patient Confidentiality and Health Information. Formally, the Co-Chairs conducted three rounds of drafts. Round One draft policies were circulated among Information Policy committee members. Round Two drafts were circulated via email to all members of IAIMS Planning Committees and Round Three drafts were posted on the

UMDNJ IAIMS Web site for public comment. Informally, the Co-Chairs consulted with various members of the university community as they developed the formal drafts for wider distribution.

**Outcome 5: Prepare the UMDNJ community to participate in an IAIMS environment**

The grant anticipated that the IAIMS project could be used to accelerate the pace of technical change at the university. Specifically, the IAIMS leadership at UMDNJ hoped that an IAIMS grant would raise awareness, create need and facilitate learning about computers and information use in the university community.

The grant application proposed to create an IAIMS Planning Office at the George F. Smith Library on the Newark campus and to create and implement a communication plan to disseminate information about IAIMS. The communication plan included paper and electronic newsletters, listservs and newsgroups, seminars, symposia and demonstrations.

In accordance with the plan, the Co-Directors established an IAIMS Planning Office at the library in Newark, and the Office took the lead in communicating about IAIMS with the university community. The following is a list of the different methods developed and employed by the Planning Office Coordinator to publicize IAIMS at UMDNJ.

1. Connexions, a quarterly newsletter with 13,000 copies drop shipped and 2500 direct mailed throughout the university
2. Annual symposia on IT issues and demonstrations of technical innovations within the university
3. University-wide email to broadcast information and announcements about IT events
4. Establishment of a UMDNJ IAIMS Web site
5. Press releases to local media

### *Impact of IAIMS on the university*

Eleven of the fourteen Co-Chairs were emphatic that the IAIMS project created opportunities within the university that would not have otherwise occurred. Opportunities ranged from enlisting people who normally were not part of the IT planning process to focusing on topics that were not being addressed in other venues. Perceived benefits of the IAIMS planning process occurred in a variety of areas: knowledge, communication, coordination and integration, strategy, decision making, and initiatives. Knowledge was enhanced through the introduction of IT topics not previously discussed, quantification of personal experiences through data collection and the discovery of people's perspectives of where IT is and should be. Communication was increased by allowing diverse groups of professionals from different schools to talk with each and inclusion of people who weren't normally a part of the IT university planning mainstream. The IAIMS project introduced people who otherwise would not have met and let the community of UMDNJ know what was going on in the informatics arena as well as creating a forum to bring everyone to the table and the opportunity to have a "voice". Through IAIMS coordination and integration efforts a global "university" perspective on IT was developed, a central explicit framework was created to pull discussions and decisions together, the library & IST was brought closer together along with the entire university. A comprehensive strategy was discussed which resulted in new policies in new areas and updates for outdated policies, discussions about where UMDNJ is going and a "reality check" for IST. The IAIMS planning process assisted UMDNJ in taking a proactive stance toward IT planning and decision making, pushing forward tough decisions about money and commitment with the recognition that the IAIMS process and products represent multiple perspectives. IAIMS jump-started "stale" technology processes, refined IT policies and drafted timelines.

### *The UMDNJ environment and its impact on the IAIMS project*

Through the planning process several organizational issues were raised and it was noted that these must be addressed as UMDNJ continues to succeed in implementing IT. For example, the existing physical infrastructure at UMDNJ must be modified, open lines of communication must be available to facilitate coordination and integration, continued

commitment from top management must remain firm, and resources must be used in support of informatics technology. One implication of these remarks about IAIMS and UMDNJ is that although participants perceive IAIMS to offer a viable structure to carry out IT planning, they are also aware of the university's opportunities for improvement. In recent years there has been a shift from decentralization to centralization at UMDNJ and one Co-Chair observed that the concept of a "UMDNJ community" had only emerged during the last four to five years. It was noted that something as simple as Web pages identified as "UMDNJ" contribute to a sense of community. Another noted that the university has recently begun to nurture a more collaborative environment in which people find benefit in crossing school boundaries. Researchers and clinicians however, still strongly identify with their own schools, individual departments and research projects, not with the UMDNJ organization. From this perspective, an initiative such as IAIMS provides a rationale for communication and cooperation across boundaries that the university and its units have not been able to generate internally. In addition, IAIMS comes with the high credibility accorded an NLM project. The legitimacy conferred by the outside agency elevates the status of the issues associated with project and stimulates greater interest than any single element of the university could.

*Committee members' perspectives on computers, the UMDNJ environment, and IAIMS' impact*

According to their responses in the written survey, over three-fourths of committee members consider themselves very knowledgeable about computers, have a lot of experience with computers, use computers regularly, and talk with their colleagues about the impact of computers on their everyday work. Moreover, over ninety percent agree that the success of their departments depends on having access to an integrated information infrastructure.

At the same time, however, only about fifty percent of respondents said that they made their participation in their committee a high priority and felt a sense of urgency about the IAIMS project. Moreover, only thirty-seven percent (37%) described themselves as active in their committees. The individual lack of commitment contrasts with respondents' replies that almost seventy percent felt their bosses made employees' participation in IAIMS a high priority. Committee members were very positive in the assessment of IAIMS' impact on the university and on themselves. Eighty-eight percent (88%) of respondents believed that IAIMS would have a long-lasting impact at UMDNJ. Over eighty percent also reported that, as a result of their participation in IAIMS, they are more committed to help UMDNJ develop an integrated information infrastructure, and over seventy percent said that they think more often about how to use computers and other information technologies in their work. If committee members' replies are evaluated in terms of the Stages of Change model, it appears that the IAIMS planning project helped members move through the pre-contemplation and contemplation stages (thinking more about integrated information systems) which are appropriate for planning a project.

## **Development and publication of an IAIMS institutional plan**

Each of the seven committees produced a final report which was published on the IAIMS Web site and used in the compilation of the IAIMS institutional plan. Three of the reports included a vision/mission statement while the others restated their charges. All enumerated strategic directions and goals . Some committees divided these goals into technical versus organizational and most reported opportunities for improvement which became evident through the planning process. A final report of the IAIMS planning process was drafted on August 18, 1999 and summarizes the IAIMS strategic planning activities. A draft strategic plan which outlines the IAIMS vision and accompanying goals was provided to the evaluation team on September 3, 1999.