SUMMARY STATEMENT

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(Privileged Communication) ***Release Date:*** **01/23/2003**

Application Number: **1 G08 LM007853-01**

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Review Group: **ZLM1 MMR-I (J2)**
National Library of Medicine Special Emphasis Panel

Meeting Date: **01/05/2003**
Council: **JAN 2003**
Requested Start: **04/01/2003**

RFA/PA: **PAR02-081**
PCC: **MIOP2**

Project Title: **Implementing IAIMS at the University of Cincinnati**

SRG Action: **Priority Score: 134**
Human Subjects: **98-Human subject coding not applicable to certain activity code**
Animal Subjects: **98-Animal subject coding not applicable for certain acty. code**

Project Year	Direct Costs Requested	Estimated Total Cost
1	399,892	399,892
2	411,139	411,139
3	422,723	422,723
4	434,654	434,654
TOTAL	1,668,408	1,668,408

ADMINISTRATIVE BUDGET NOTE: The budget shown is the requested budget and has not been adjusted to reflect any recommendations made by reviewers. If an award is planned, the costs will be calculated by Institute grants management staff based on the recommendations outlined below in the COMMITTEE BUDGET RECOMMENDATIONS section.

1 G08 LM007853-01 HUTTON, J.

RESUME AND SUMMARY OF DISCUSSION:

This application for an IAIMS Operations (G08) grant from John J. Hutton, M.D., University of Cincinnati College of Medicine, Cincinnati is titled “Implementing IAIMS at the University of Cincinnati”. The PI and his team have crafted an excellent overall project that conforms well to the IAIMS program. The three projects included in this IAIMS effort exemplify crossing interinstitutional boundaries and addresses issues that will be applicable, transferable and scaleable to other academic healthcare centers. The PI and his co-investigators have excellent records of successful leadership of large IT projects, and are supported by an excellent environment at the University of Cincinnati, with a history of commitment to the development of strategic IT resources. These IT resources include a single high-speed network linking the key organizations and providing the needed infrastructure for the IAIMS projects. The Academic Information Technology and Libraries integrates the academic computing services and health science libraries and is a key component of the IAIMS program. There is evidence of consistent leadership and resource allocation that demonstrates a strong commitment to the IAIMS concept. There is also a clear plan for funding the IAIMS projects, above and beyond the amounts sought in this application, and beyond the grant-funding period.

Most of the reviewers’ initial concerns have been allayed through the course of the site visit. However, one remaining concern is that the bioinformatics project is very broad, and specific deliverables are not as clearly defined as for the other two projects.

DESCRIPTION (provided by applicant):

Overabundance of largely unorganized and unfiltered information is the greatest information problem facing the faculty, staff, and students of the University of Cincinnati Medical Center. Our goal is to provide individuals with information that is organized, filtered, context-appropriate, and presented in personalized formats.

Our challenge is to transform the overload of unorganized information into organized knowledge for each individual. We propose to do this by developing integrated information management systems and tools that enable people to become more productive. We will develop these systems and tools on an architecture consisting of an integrated database with personal profiles, middleware, and Web portals. Using this technical architecture, applying semantic standards, and integrating existing digital information resources, we will enable individuals to filter and organize information that is pushed to them, that they pull from multiple sources, that they choose to be alerted to, and that they select to share with others. We call this combination of information concepts, technical architecture, standards, and resources smart digital services. Our faculty, staff, and students will be able perform "smarter" by managing their information selectively according to need and by avoiding overload of irrelevant material.

Our information management needs are greatest in the following three areas:

1. clinical skills instruction of health professional students and residents;

2. genomic research and education; and
3. research administration.

Based on these needs, the specific aims of our proposal are to develop:

1. A digital portfolio credentialing tool, the core of which is a multimedia record that documents and guides the education of students and residents with regard to the knowledge, attitude, and clinical skills

required for awarding their degrees with documentation of competencies required for clinical practice in their chosen specialty.

2. A set of bioinformatics tools that give researchers and students the ability to filter information and acquire the necessary skills to use the sophisticated software and databases that are essential to genomic research.

3. An integrated digital system for research administration that leverages the investigator's and administrator's time throughout the research lifecycle: pre-award, post-award, and compliance.

CRITIQUE:

Overview & Significance

The University of Cincinnati (UC) vision of IAIMS is exciting and fits overall with the IAIMS fundamental activities. The project crosses IAIMS action areas and inter-institutional boundaries. The application has a clear and compelling vision for personalization and information filtering, implemented in concrete plans for three focused development projects: a digital portfolio credentialing tool, a research administration system, and bioinformatics tools. The organization builds on 20 years of IAIMS experience and accomplishments, sufficient resources and a diverse, supportive environment. Experience gained in each project will be of great general interest to other academic health sciences centers.

The portfolio project best exemplifies the IAIMS criteria. It creatively envisions integration of a people database, clinical skills labs data, patient observations and use of learning modules to create a powerful new tool that focuses on quality rather than quantity in assessing competencies. The research administration project based on the site visit incorporates a mix of build and buy systems to create a seamless e-grant/contract system that should significantly improve productivity. The issues addressed in the application are essentially universal throughout other academic health centers, making the progress achieved and lessons learned at UC applicable, transferable and scaleable elsewhere.

Institutional Readiness for IAIMS

The University of Cincinnati began its IAIMS journey in the 1980’s with farsighted leadership and followed through with the inauguration of a medical center CIO and specific goals and plans to develop IT into a strategic resource and competitive advantage for the medical center. For over 20 years, IAIMS has been a conceptual theme in the leadership and management of the medical center, with many successful projects built toward a strong IT infrastructure, development of center wide cohesion for IT vision and consistency, and strategic planning for IT as a coordinating and enabling resource for the entire medical center.

The University of Cincinnati Medical Center has demonstrated its commitment to the IAIMS concept over the past 20 years, with consistent leadership and resource allocation. Indeed, each of the three projects proposed has already commenced with a substantial infusion of institutional resources, and the support resulting from an approved IAIMS grant would only accelerate their progress. The IAIMS progress and success at this institution should cause it to be considered for inclusion in the top tier of IT focused academic medical centers in America (e.g., Vanderbilt, Brigham and Women’s, LDS, etc.).

Resources and Environment

The University of Cincinnati Medical Center is comprised of the schools of medicine, nursing, allied health, and pharmacy, supported by a combined IT and library resource and the superstructure of the medical center administration. Current policies and organizational structure established by the current institutional leadership are very supportive of a consistent and forward looking IT plan for the medical center. IAIMS thinking has been imbued into the institutional fabric, planning and development for many years.

Several years ago the University Hospital was split off from the University and now is an affiliated institution contained within a group of hospitals entitled the Health Alliance of Greater Cincinnati. This separation of the academic from the clinical components (despite the peripheral involvement of the University Hospital in this IAIMS project) presents the potential for tension and disagreement over goals, objectives, priorities and resource allocations within the “academic health center”. Cohesion must be vigilantly sought and monitored, lest the whole become less than the sum of its parts. HIPAA constraints may become a focal point in these tensions.

There has been considerable work on technical infrastructure at UC over the last decade, and the necessary pieces appear to be in place to support the three IAIMS projects. As noted in the IAIMS plan, the University has supported the development of key utilities, including a single high-speed network; is an Internet2 charter member; and has developed sound policies and plans that will under gird continued development. In the medical center, Academic Information Technology and Libraries (AIT&L) provides strong technical support in a number of areas, and is a key aspect of an increasing culture of collaboration across departments, colleges and institutions.

There has been a considerable transformation within the former library unit, now AIT&L, over the last 9 years. Key library services have been maintained or improved and an extensive program of academic computing services are provided. The unit is focused on its stated mission of creating access to knowledge and developing integrated knowledge management systems that enhance learning, research and patient care activities of the students, staff and faculty of the medical center. With the IT partnership, AIT&L is already furthering the integration of technology services within the medical center.

AIT&L is a key component of the proposed IAIMS, being responsible for about 80% of the proposed staffing plan. Evidence from both the application and the site visit suggest that AIT&L is well qualified and well positioned to play this key role in the IAIMS program at UC. Having said this, however, it is less clear that AIT&L has worked as extensively on planning its contributions to IAIMS from the library perspective, as for example, its potential involvement in the development and maintenance of the bioinformatics catalog of resources, in literature alerting as a part of the research administration project, and in the various ontology development activities that must go on in all three proposed projects.

Other computing units with lesser, but still key, involvement in the IAIMS plans are those of the University and the Health Alliance, and departmental units within the medical center. These appear to be working together in reasonable ways and to be aware of and involved in IAIMS planning. Lesser involvement of groups involved in clinical computing is consistent with the focus on education and research in IAIMS planning and the proposed projects.

Governance, institutional support, financing

The governance of IAIMS is well thought out, with a large number of people involved and representation from all the colleges at the medical center, sufficient overlap in staffing among projects to ensure continuity, and an overall structure with clear lines of responsibility for both overall program management as well as successful conduct of the three projects.

There has been involvement of the colleges in the medical center and, to a less extent, the rest of the University and the Health Alliance and other patient care operations in the extended IAIMS planning that has been done. The growth of the IT component of AIT&L suggests that there have been improvements in the integration of IT at least within the College of Medicine, and there appears to be reasonable coordination with other IT units. Letters of support are provided from the key organizational entities to be involved in this IAIMS.

There is a clear plan for funding the three IAIMS projects, and substantial local funds are committed. The site visit made it clear that the primary purpose of IAIMS funding is to accelerate projects that would be done regardless, and there appear to be sufficient resources, including endowment funds, to both carry out the proposed projects and to maintain IAIMS activities after the grant.

Aim 1. Digital Portfolio Credentialing Tool Project

This project seeks to "automate", using an extension of the in-place IAIMS architecture, an increasingly important component of health professions education that emphasizes credentialing and objective competence assessment. This component of educational programs requires documentation of clinical experiences with live, as well as simulated, patients. If poorly carried out, the tasks associated with documentation become burdensome overhead for faculty and trainees who are already very pressed for and have many demands on their time. If well carried out with aid from well-designed information technology, however, these documentation activities can support the educational process in profound ways; for example, by providing rapid feedback to students on the distributions of patients they are seeing or their performance in real or simulated patient care activities. These aspects of health professions education will become even more important, and mandatory, in future years, so the problem area is well chosen for IAIMS.

As a major strength of this project, one could argue that it has elements that address all four Fundamental IAIMS Areas. It profoundly invokes the digital library concept and provides context specific information. This is a project that "bridges" education and the administrative functions of the institution that relate to education. Another major strength of the project, relating to its breadth and reach, is its application across several of the health science colleges at the University.

The investigators use "credentialing" as the overarching educational framework for the project. As such, they are adopting a philosophy of education that is being widely promoted by accreditation agencies and specialty boards. The project is based on a well-developed and widely used patient simulation center at the university.

This project has many facets that invoke issues of educational psychology and measurement, and organizational culture, in addition to considerations of technology. Many aspects of the design of this project that were not clearly explained in the written application were very well explicated during the site visit.

It was clarified at the site visit that the initial focus of the effort will be on documentation and support of trainee encounters with simulated, as opposed to "live", patients. This emphasis makes the goals of the project more attainable, but there is concern that it bypasses, at least initially, what appears to be the area of greatest need. Encounters with simulated patients, while extremely important, represent a relatively small proportion of the clinical educational experience of health professional students. Moreover, simulated patient encounters are well planned and scheduled. It is known in advance what "problems" the simulated patient will have, so documenting these encounters is relatively easy compared to encounters with live patients that occur in the much more chaotic environments of the hospital and clinic. The investigators have deferred extending their activities to documentation of live patient encounters, although they demonstrated technology that would be directly applicable to these settings. Issues of patient privacy, that appear to be a barrier to such extension of the project, will be overcome by "anonymizing the data" but no specific plans for doing that were presented. Considerations related to the organizational separation between the Health Alliance and the University appear to be a significant rate-limiting factor. From an IAIMS perspective, these are problems that must be solved. The project staff is well aware of these problems. The strong, collaborative organizational model in place for this IAIMS effort lends assurance that these problems will be addressed at the appropriate juncture.

Another important aspect of the project is the concept of the "portfolio". The investigators propose to invest large amounts of resources in the archiving of multimedia records of patient encounters (video files), as opposed to more abstract data (such as ratings by preceptors who observe the encounters) that are derived from reviews of these encounters. The need for long-term archiving of the encounters was not justified, and the practical educational rationale for the multi-media portfolio was not adequately articulated. Records of recently completed encounters are useful for review by trainees and preceptors, but the investigators' vision of a comprehensive educational portfolio containing large amounts of multimedia data, and spanning a student's entire curricular experience, did not seem

justified by any clear educational purpose. There is, for example, no event in the medical curriculum that would generate a review of the portfolio as a comprehensive, longitudinal document.

Technical plan, timeline, milestones for Credentialing Tool

Some questions that arose from reading of the application were well addressed during the site visit.

Examples:

The application itself did not reveal a strong awareness of the national trends in health professions education related to assessment and credentialing. During the site visit, however, a keen and sophisticated awareness of these issues was exhibited.

The high level technical plan that was provided in the application was supplemented at the site visit by a clear layout of the existing databases and a description of how they will be expanded through the proposed work. It is a major strength of this project, and indeed the entire application, that new technology will be built on a strong, existing integrated platform.

The investigators have combined locally developed software with other software developed in partnership with commercial firms. In this domain, they are both buying and building.

The educational “workflow” and the educational program context for these applications were clearly articulated at the site visit, providing assurance that the proposed automation stands to streamline the current process rather than further complicating them.

The investigators appear to have a clear plan for the graduated implementation of the technological components to be developed. They may be overly optimistic regarding the extent to which all faculty, especially unpaid preceptors, may embrace the new technology; but they understand the need for extensive training and user support and have mechanisms in place to support this.

Overall, this proposed project rests on a solid technical and organizational foundation. It is in harmony with major trends in health professions education. Everything that is proposed under IAIMS is feasible. The project team will encounter some surprises as they proceed, but the reviewers are confident that they are sufficiently sophisticated, based on their past achievements, to deal with these.

Staffing Plan and FTE for Credentialing tool

The staffing plan for the portfolio project comprises a mix of senior educators from four health science colleges and technical persons from AIT&L. The site visit revealed that this is a highly qualified and dedicated group. They have worked together effectively to bring about the significant progress that has been made to date. There are sufficient personnel, with appropriate experience, on site to complete the proposed work.

Monitoring/Evaluation for Credentialing tool

The evaluation plan as submitted in the application is extremely comprehensive. It represents many more studies than can reasonably be done. As such, the investigators have bypassed the most challenging problem of evaluation design, which is to specify those studies that actually will be done out of those that could be. Discussions about evaluation at the site visit, however, clarified that the evaluators are experienced in this kind of work. They will pragmatically identify the questions that are most important to address, and they will design methods to address these questions. They understand that evaluation of this project cannot be undertaken by a single definitive controlled trial. Rather, they will employ a mix of quantitative and qualitative methods to offer formative feedback that will guide the project while underway, and that will build an argument, by the end of the project, regarding its overall level of impact. The evaluation team is encouraged to address the more subtle questions of cultural and organizational impact, along with the more surface questions relating to resource utilization, even though the answers to the more subtle questions will necessarily be less definitive.

Aim 2: Bioinformatics Tools Project

The bioinformatics component of the application seeks to use IAIMS to help integrate existing distributed faculty activities, to disseminate bioinformatics tools to bench researchers, and to use the nascent and growing Pediatrics Informatics group as the focus for these institutional changes. These goals will be met within the same technical architecture as the entire project, namely smart services built on a shared database of people, and a web portal that provides access to these services.

These broad goals were gleaned from the application and site visit, but the reviewers asked the PI to provide NLM program staff with a clearer description of projects and deliverables as a follow up to the site visit.

The project references all of the fundamental areas of IAIMS. Context-appropriate information permeates every aspect of the proposed personalized information systems. Standards based information management will be incorporated in use of standards such as meduperson and extensions of UMLS to the bioinformatics domain. Digital Libraries will be created based on bioinformatics resources developed at Cincinnati, such as TraFaC and used to complement a rich collection of more general online texts, journals, databases and tools for analysis.

Creating a central shared database of people, their jobs, roles and other personal characteristics that affect their information needs and privileges will enhance information management.

In addition, (1) Bioinformatics is a priority for NIH, e.g. BISTI, and (2) Dr. Pestian has already begun using bioinformatics research combined with patient records in his Discovery system to accomplish integrated clinical research.

Technical plan, timeline, milestones, contingency planning for Bioinformatics Tools

The proposed plan seems technically sound and conceptually appealing. The investigators already have the basic people database and portal in place as well as a Community of Science database of research expertise that can be used to populate the people database.

Not all of the proposed smart services are equally promising in the bioinformatics domain. In particular (1) research bioinformatics questions may be so specific and unique as to make automated knowledge selection ineffective, and (2) bioinformatics may be too fluid and cutting edge to be effectively cataloged and maintained. It may be that only some of the proposed services make sense in practice, primarily those that support and enhance the human knowledge resources and communications, such as being able to send targeted news or questions on a new gene expression tool to those people whose profiles include gene expression. In other words, the “ask an expert” model in Netwellness appears more promising than a more automated MEDLINE model.

The timeline is reasonable assuming that the proposed activities are focused and given priorities. The staffing plan of 2+ FTE’s is reasonable if the activities are focused.

Monitoring/evaluation for Bioinformatics Tools

Evaluation is straightforward and reasonable and will be used both to guide the projects and to report on lessons learned. Evaluation includes user feedback through surveys & focus groups, and quantitative monitoring of how people use the various services.

Aim 3: Research Administration System Project

The Research Administration System (RAS) is an ambitious project that proposes a business intelligence approach to streamline the workflow of grant and contract management. The vision of a seamless digital research administration lifecycle from pre- to post-award that includes compliance accountability is notable. The proposed system will integrate existing person core data, tracking and compliance, IRB and digital educational modules to enhance researcher and administrator productivity addressing the IAIMS fundamental activity to deliver context appropriate information easily in a timely manner, and an individually sensitive approach. The ultimate goal is to present or alert the individual with the right information from multiple component modules at the time. This project is a key information

priority for the institution and significant components and resources have already been committed. Medicine will be the primary beneficiary of the project due to the preponderance of its research activity, however the other three schools will participate and benefit.

Technical plan, timeline, milestones for Research Administration System

The technical complexity of this project is daunting in the detail. However, the site visit clarified that the majority of the core component content and personal data modules that are required before a profile system could be achieved, are either complete or well underway. The user case scenarios and detailed task schedules demonstrate an understanding of the numerous processes required, and a building block approach is proposed over the course of 5 years.

The core of the project integrates individual grant and contract data systems (6 existing, 3 to be re-engineered and one new based on data from the site visit) with central person data and compliance tracking to create an institutional e-business solution: essentially an e-grant backend administrative system using “smart tools.” While the decision to build vs. buy is a potential concern, the project leadership demonstrated during the site visit continual monitoring of national activities and commercial products (e.g., MIT, UC San Diego), and their intention to incorporate code from other institutions and to share their own code. Further, the project team is in discussion with NIH to ensure that e-grant submissions will be seamlessly transferred via XML to the developing eRA system. The expertise and funding opportunities systems were not clearly defined in the original application, including granularity of metadata and staff to accomplish this work. The site visit clarified the intent to utilize existing systems (Community of Science and Illinois Research Information Service) to collect and update data that would be integrated locally for profiling. This approach appears sound if the metadata are sufficiently granular and current to inform the profile layer. Detail of the literature-alerting component, both in content and methods, was insufficient in the application to determine utility to the daily workflow of a researcher.

This RAS project is not planned to integrate with the University-wide and Children’s hospital grant management processes; however, from the site visit, the central campus has adopted previous systems developed by the Medical Center. Further, discussions are underway to work with the Children’s Hospital and Health Alliance for compliance tracking and targeted educational courses. Potential national impact of the education component of this project is illustrated by an experiment with several AAMC/GIR test sites.

Staffing plan & FTE for Research Administration System

Administrative and technical expertise (3.65 funded) is excellent, and progress demonstrated at the site visit was significant. The project staff includes the active participation of the financial, IRB and other research support offices. The project team is composed of existing staff and the intention is to accelerate the existing timeline and objectives. It is anticipated that significant outcomes should be achievable despite the very ambitious plan. The internal oversight or advisory committee is not defined and would benefit from participation by the appropriate research representative from each of the three schools. As this is a “change engineering” process, it is also critical to incorporate feedback from “disinterested” researchers and administrators who are not part of the core project as a critical feed back loop. The library is proposed for training and support, and this is a role they currently play with other AIT&L systems. Resources committed beyond the requested funding is significant.

Monitoring/Evaluation for Research Administration System

The application calls for a 20% evaluator effort overall. For this project, the evaluation strategy relies on usage data, system monitoring to meet product specifications, and user satisfaction reports. The impact of throughput of grants is measurable. The impact of “change engineering” by researchers and administrative staff should be addressed, as this is a fundamental shift in how research is managed. Measurable indicators of the impact of the funding opportunities, research expertise and literature alerting should be addressed. Success of this project is likely based on improved researcher productivity. Data that confirms increased extramural funding as an impact factor will prove more elusive due to compounding factors.

IAIMS Operations

The PI has significant administrative and planning experience as a former Dean of the Medical School and notably qualified to lead the overall project. His lack of informatics credentials is mitigated by his stature in pan-organization leadership and focus on the priorities of the IAIMS planning effort. The two co-PIs bring substantial administrative, technology, and education experience to the project. The CIO/Library Director brings the commitment of the informatics/IT infrastructure. His experience in developing the successful NetWellness project and leading a shared IT operation inspires confidence in achieving the ambitious development tasks. The Associate Dean for Clinical and External Affairs in the School of Pharmacy is well qualified in leading transformation education projects and has received awards to apply new technologies in this field. The staffing model relies on existing, experienced staff that will insure rapid and productive development. However, it does require backfilling those positions to ensure project staff have sufficient release time from ongoing tasks to fulfill their new role. Staff is primarily focused on management and development. A better balance between technical development, content, evaluation and training would enhance the application.

The application describes three major projects and an overarching set of project oversight committees, a steering committee, and a management & evaluation team. The PI and Co-PIs, along with the project managers, are defined and their responsibilities reasonably well delineated within the Project Team and Oversight Groups. Sustained leadership by the Steering Committee chaired by the Senior Vice President and Provost signals the important of IAIMS to this institution.

The project will be managed through regular meetings of the various teams and committees, and an inclusive annual planning retreat. Presumably the annual planning retreat will be used to track progress, and change direction as necessary.

General Evaluation approach

An ambitious evaluation plan is proposed, specifying potential measures and feedback methods for each milestone in each project. These provide a way of building ongoing formative evaluation into the progress of the projects, a good strategic approach to such evaluation. Although some summative measures of outcomes have been proposed, evaluation of measures of information quality such as sensitivity and specificity might be strengthened given the difficulty of the proposed automated and personalized information filtering. The presentation given on evaluation at the site visit added considerable focus to the evaluation plans, and the model presented there should be very useful as the IAIMS program proceeds.

A key aspect of the evaluation plan is the examination of the impact of IAIMS on long term objectives and the organization overall, and a combination of statistical reporting and focus groups are suggested for this. The examples given in this area are more focused on the research administration and bioinformatics projects, to the exclusion of the portfolio project and overall impact. In the latter area, it would seem appropriate to also assess progress on collaboration between the various library and IT units within the Medical Center, other parts of the University, and the Health Alliance and other patient care operations. It is key that evaluation results, particularly those related to overall impact, be communicated to the broader medical center community.

Overall timetable

The overall timetable appears ambitious but feasible given that many components already exist, and the institution is buying components if available, and otherwise building and integrating. Technically the complexity and maintenance of the projects is daunting in the detail, particularly the ability to maintain content that drives personal profiles that are sufficiently precise and current. There is also considerable challenge in scalability as the number of users grows to the hundreds and the content objects grow to the thousands.

Likelihood of post-funding support

The 20-year history of IT (IAIMS driven) investment and progress at the University of Cincinnati Medical Center provides confidence that continued conceptual and decision based adherence to IAIMS themes

will prevail. The quality and breadth of the UC IAIMS strategic plan, coupled with the quality and credibility of this application and the degree of institutional investment of its own institutional resources into the various projects, signal confidence and consistency for IAIMS at the UC Medical Center.

Summary & Overall Evaluation

The vision of the investigators is exciting and fits overall with the IAIMS fundamental activities. The project crosses IAIMS action areas and inter-institutional boundaries. The portfolio project best exemplifies the IAIMS criteria. It creatively envisions integration of a people database, clinical skills labs data, patient observations and use of learning modules to create a powerful new tool that focuses on quality rather than quantity in assessing competencies. The research administration project based on the site visit, incorporates a mix of build and buy systems to create a seamless e-grant/contract system that should significantly improve productivity. The issues addressed in the application are essentially universal throughout other academic health centers, making the progress achieved and lessons learned at UC applicable, transferable and scaleable elsewhere.

The application has a clear and compelling vision for personalization and information filtering, concrete plans for three focused development projects, experience and accomplishments to build on, sufficient resources and a supportive environment. Experience gained will be of great general interest. The likelihood of success is high given the institutional commitment, progress to date in establishing needed components, and success with previous projects such as Netwellness and online administrative applications.

The PI, a former successful Dean, and the CIO/Library Director have institutional stature and proven track records in successfully managing large projects such as Netwellness. The other co-investigators include qualified and institutionally responsible faculty in education, bioinformatics, and administration project areas.

The education and research administration projects are well defined and well underway. Major components such as a portal, people database, administrative applications, a lab for teaching and evaluating patient interviewing, and a PDA based system for recording patient encounters and capturing student and faculty evaluations have already been developed.

The bioinformatics project is clearly important to the institution and builds on significant faculty expertise. The written application is very broad and specific deliverables need to be better identified and clearly linked to institutional goals as the project proceeds. To that end the reviewers have asked the PI to provide NLM program staff with additional written clarification.

The proposed evaluation will be used both to guide the projects and report on outcomes. In addition to internal evaluation, they have recruited two knowledgeable outside consultants. They plan to hold annual planning retreats with all IAIMS participants. The project might benefit from additional outside advice through less formal mechanisms such as a broader group of advisors, bringing in invited speakers, or presenting in national meetings and forums on IAIMS activities.

Specific roles for librarians in these impressive projects were not discussed, though AIT&L, of which the library is a part, is a major player in the projects. Librarians can play an active role in creation of metadata and taxonomy in the proposed projects, as well as bringing forward information objects that go beyond standard bibliographic retrieval. The applicant is encouraged to fully exploit the capabilities of its library staff and to publicize their work to demonstrate to the broader community these creative extensions of traditional librarian functions.

The implementation and evaluation of three simultaneous projects of this magnitude raised some concerns among initial reviewers. Recognizing all the factors in the application, and what was learned at the site visit, this review expresses a high degree of confidence in a successful outcome of the student portfolio and research administration projects. However, the bioinformatics project will need to become much more focused and sharply defined if it is to succeed at a similar level.

The University of Cincinnati Medical Center had both IAIMS planning and pilot grants in the 1980's. More recently they have completed self-funded IAIMS-like activities, including development of an IAIMS Plan that is well aligned with broader institutional strategic plans. They have also invested significant resources in establishing the infrastructure and application on which their IAIMS activities would build, and the IT Partnership is of particular note in trans-organizational commitment and trust.

Based on the list of key institutional leadership involved, the minimal requests for their salary support from the IAIMS grant, the letters of support, and the strong IAIMS history at UC, this review team is amply satisfied that the UC is fully and convincingly committed to this IAIMS project.

THE FOLLOWING RESUME SECTIONS WERE PREPARED BY THE SCIENTIFIC REVIEW ADMINISTRATOR TO SUMMARIZE THE OUTCOME OF DISCUSSIONS OF THE REVIEW COMMITTEE ON THE FOLLOWING ISSUES:

COMMITTEE BUDGET RECOMMENDATIONS: The budget was recommended as requested.

MEETING ROSTER

National Library of Medicine Special Emphasis Panel
NATIONAL LIBRARY OF MEDICINE
ZLM1 MMR-I (J2) 1
January 05, 2003 - January 07, 2003

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Consultants are required to absent themselves from the room during the review of any application if their presence would constitute or appear to constitute a conflict of interest.