Information Seeking Behaviour of Engineering College Students: A Case Study

Chennupati K. Ramaiah* and Somipam R. Shimray

Department of Library and Information Science, Pondicherry University, Puducherry - 605 014, India
*E-mail: chennupati_kramaiah@yahoo.com

ABSTRACT

The purpose of this study is to evaluate the use of various services and facilities provided by Muffakham Jah College of Engineering and Technology Library, Hyderabad, India. This study used survey method and questionnaire tool for data collection. The majorities of the respondents in this study choose print form of textbooks (78 %) and printed reference books (80.33 %). Of the total, 80 per cent of them stated that they did not find any gaps in library collections. It was found that most of them (93.33 %) do not find any problems and issues in accessing information from the available resources. The majority (89 %) of them agreed with the working hours and 81.67 per cent of the respondents are satisfied with the services offered by the library staff. Over three fourths (78.67 %) of them are satisfied with the existing facilities provided by the library. The majority (89 %) of the respondents indicated that the library should have a separate website in addition to the college website.

Keywords: Information requirements; Engineering colleges; Digital collections; Information access; Library facilities; Evaluation of library services

1. INTRODUCTION

Satisfying users' needs is the prime aim of the engineering college library[1]. Libraries assist in research process including collecting, organizing and preserving information resources applicable to the research community. Today, engineers need business skills, communication skills, personality, business ethics, etc. thus, engineering institutes have a greater accountability to shape and offer prospects for all engineering students. Teachers, laboratories and most importantly the libraries have a greater role in imparting required knowledge, skills and thereby shaping the career of engineers[2]. The main objectives of engineering libraries are to assist engineering students in acquiring knowledge and updating their skills. Libraries encourage teachers, scientists, researchers and students beyond their classroom instruction and research. Furthermost, the role of the engineering college library is to gather and consolidate information to meet the requirements of these students.

In the present scenario, it is mandatory to keep documents in the conventional as well as digital form for wider access. Satao[3] noticed that libraries have undergone a distinct transformation in recent years in term of collections and services offered. This study is undertaken to examine the needs of users and understanding their awareness about existing print and non-print resources, services and facilities provided by the library.

2. BACKGROUND

Muffakham Jah College of Engineering and Technology (MJCET) was setup in the year 1980 by Sultan-ul-uloom

Education Society, Hyderabad. It is affiliated to the Osmania University, Hyderabad and recognised by AICTE, New Delhi. The MJCET library occupies over 1000 sq.m. area. The library has a rich collection of books and journals; 52,258 volumes of books and subscribing 125 printed magazines and journals. It has a reading room facility which accommodates about 175 users. The digital library is having 25 IBM workstations and linked with 1 MBPS Internet capacity; subscribing AICTE-INDEST consortium online E-Journals databases such as IEEE, ASCE, ASME, and Science Direct. All the Library operations are computerised using SOUL software.

3. LITERATURE REVIEW

Developments in information technology (IT) during recent times have changed the methods and techniques of gathering, storing, organizing information particularly accessing, retrieving and using information. This has also reduced the communication gap between publishing and delivering time. Engineering college libraries need to provide up-to-date information for the effective teaching and research. The main purpose of students visiting the library is for their academic work. The majority of the users consider textbooks, magazines, journals, and newspapers as their main sources for collecting information[5].

Collection building is a part of the library management process. Collection development should be linked to the information requirements of that institute[6]. Collection development comprises of selection, ordering and building collection[7] in all forms. Many studies have been conducted to examine the effective use of electronic resources in different types of libraries. Most of the users of e-resources felt that they have saved time while using electronic resources[8] compared

to print-based materials. Research studies on the usage of electronic materials claimed that 78 per cent of the respondents considered in using UGC – Infonet e-journals which are important for their research and studies[9].

The majority (69.15 %) of the students and faculties of Punjab Engineering College were unaware about the e-resources in the library[10]. Ali[11] found that the majority (60 %) of customers were facing numerous complications while using e-resources. Lohar & Kumbar[12] revealed that the absence of information, information overload, time, non-availability of IT infrastructure, lack of space, non-availability of up-to-date journals[13], the absence of qualified staff and not giving proper training were some of the problems in the optimal use of information resources[14]. Libraries have transformed tremendous changes from traditional to digital in term of building collection and services[15]. Rapid developments in library operations and services demand to user studies in libraries to fulfill the user's requirements[16]. A Canadian UG library use study found that students who participate in class activities and who study more are dynamic library users[17]. Most of the students used library for assignments, presentations, project works, research and various other related reasons[18]. The prime aim of library's user study is to introduce new services or improve the existing services that will satisfy library users[19].

4. AIM AND OBJECTIVES

The aim of this study is to evaluate the use of various services and facilities provided by Muffakham Jah College of Engineering and Technology Library, Hyderabad. The objectives of the study are:

- To find out the frequency of library use by their users;
- To examine library collections and identify the gaps in library collection, services and facilities;
- To examine use of the digital library;
- To evaluate services provided by the library staff; and
- To measure the overall use of library resources.

5. METHODOLOGY

This project used survey method and questionnaire tool for data collection because it is easy to collect data without much resources. A total of 350 structured questionnaires were distributed to the students of MJCET covering all branches. Of the total, 300 filled-in questionnaires were received so the response rate is (85.71 %). The questionnaire comprises of questions on their personal profile, department, gender, age, qualification, library collections, information access, library services, library facility, digital library, library staff, problems encountered and overall evaluation. Based on the analysis, the subsequent results have been drawn and presented in the following sections.

5.1 Scope and Limitations

This study is confined to MJCET, Hyderabad to examine the existing infrastructure and facilities provided by the library. The survey covers all UG and PG students and faculty members of the department of computer science and engineering, civil engineering, electrical engineering, mechanical engineering, production engineering, information technology, instrumental engineering and electronic and communication engineering.

The total number of students enrolled in the library is over 3000 and the number varies each year. While selecting the sample size equal numbers of users are not taken from both genders. Of the total population, a small sample of 10 per cent students and faculty members are chosen for their study.

6. DATA ANALYSIS AND INTERPRETATIONS

As indicated before a total of 300 structured and filled-in questionnaires were collected from the students of MJCET covering all branches. The data is analysed and the following tables are drawn for easy understanding.

6.1 Personal Details

Of the total, about a fifth (19.33 %) of the respondents belongs to Computer science and engineering, 14.66 per cent belongs to civil engineering, 14.33 per cent belong to electrical engineering, 14.02 per cent belongs to mechanical engineering, 12 per cent belongs to production engineering, 11.33 per cent belongs to it, 7.33 per cent belongs to instrumental engineering, and 7.01 per cent belongs to electronic & communication engineering. In this survey, 73.33 per cent respondents are males, so males outnumbered to female respondents.

Table 1 gives the respondents by their age. Of the total, fourth-fifths (84.01 %) of the respondents belong to 20-22 years. Over one-tenth (11.33 %) of them come from 18-19 years and 4.66 per cent belong to 22-23 years. This data shows that the majority (84.01 %) of the students are doing their engineering courses at the age of 20-22 years. Of the total, the majority (68 %) of them are undergraduate students. Less than one-third (31.67 %) of them are postgraduates and 0.33 per cent of them are faculty members. In general, most of the engineering colleges offer more UG courses and very few PG courses so the same percentage reflected in the sample size also.

Table 1.   Respondents by their age and their frequency to visiting library

Age (in years)	Respondents (percentage)
18	6 (2.00)
19	28 (9.33)
20	92 (30.66)
21	118 (39.33)
22	42 (14.02)
23	14 (4.66)
Frequency of library visit	
Everyday	61 (20.33)
Twice in a week	29 (9.67)
Once in a week	21 (7.01)
Once in a fortnight	99 (33.00)
Once in a month	40 (13.33)
No need for me to visit	10 (3.33)
Not in a convenient location	40 (13.33)

Then these respondents were asked to indicate their frequency of visit to the library. One third (33 %) of them visits the library once in a fortnight. About one-fifth (20.33 %) of them visits the library everyday, 13.33 per cent of them visited once in a month. It shows that 70.01 per cent of the visitors visit the library once in a fortnight which is a good sign to the library. A similar study done by Gunasekera[16] found that more than half (59.5 %) of the users visited daily as compared to 20.33 per cent users in this study. Of the total, 13.33 per cent of them stated that the library is not in a convenient location so they do not go to the library regularly. As suggested (13.33 %) by some of them, the library has now moved to the main building which is accessible to all the students so that problem is taken care by the college.

Table 2 gives the reasons for not visiting the library. Of the total, 56.33 per cent of the respondents do not visit the library because of poor collections and poor services. Overall, 15.33 per cent do not visit the library as they do not have time and 14.67 per cent do not visit the library because of poor facilities. This clearly indicates that the library needs to improve its collections, services and facilities to attract the users. Based on this study, adequate space for reading is provided, collections were strengthened in all branches of engineering and a digital library, service was started and the existing services were improved.

Table 2. Reasons for not visiting library

Reasons for not visiting library	Respondents (percentage)
No time	46 (15.33)
Poor collections	77 (25.66)
Poor services	92 (30.67)
Poor facilities	44 (14.67)
Not interested	21 (7.01)
No need for me	3 (1.00)
Not in a convenient location	6 (2.00)
Others if any, please specify	11 (3.67)

6.2 Library Collections

Table 3 shows that the majority (78 %) of the respondents prefers to the print form of textbooks and 80.33 per cent of them prefer to print form of reference books. Research conducted by Kabiraj & Roy[20] found that 56.15 per cent of the user's preferred print form of textbooks. A study undertaken by Alade, Iyoro & Amusa[21] discovered that textbooks and reference sources are frequently used (32 %) than other formats followed by journals (32 %). In this study, half (55.33 %) of the respondents prefers print forms of journals. Similarly in another study also the majority (78.2 %) of the users preferred print form of journals than e-journals[16]. It is found that another half (50.33 %) of them preferred print form of reports. Alade[21], *et al.* noticed that 34 per cent of the users' preferred print forms compared to electronic sources (28 %) and 38 per cent of them prefer both print and electronic sources. Though all youth are pro-digital, it is surprising to notice that print forms of the documents are still accepted by the younger generation, despite availability of e-collections and digital library.

Table 3. Types of information resources preferred

Types of information resources preferred	Respondents (percentage)	
	Printed	Electronic
Textbooks	234 (78.00)	66 (22.00)
Reference books	241 (80.33)	59 (19.67)
Full-text journals	166 (55.33)	134 (44.67)
Reports (projects, research etc.)	151 (50.33)	149 (49.67)

The majority (80 %) of them stated that they did not find any gaps in library collections, only one-fifth (20 %) of them stated that there are gaps in the library collections. This shows that respondents are satisfied with library collections. They also stated that most of the time required books are unavailable in the library for issue, also suggested to purchase foreign author textbooks and subscription to the latest research reports. It is because the majority of the students of this college depend upon the library for getting their textbooks.

6.3 Information Access

Table 4 shows that the most (93.33 %) of them stated that they do not find any problems or issues in accessing the available resources. This data justify that the library has taken utmost care to make the available resources easily reachable to all the users. The majority (83 %) of the respondents are not satisfied with the currently available resources as most of the wanted resources are either not available or issued out. Kabiraj & Roy[20] study found that less than half (40.96 %) of the users noticed that the books listed in the catalogue are not available for issue or reading. Based on their experience, many of the students expressed that there are 10 or more copies of textbooks available to each title, but the demand is more due to increased intake of students in each branch of engineering course, therefore suggested to go for more number of copies.

Table 4. Information access

	Respondents (percentage)	
Ease to accessibility of available resources	280 (93.33)	20 (6.67)
Resources wanted to access but currently not available in the library	51 (17.00)	249 (83.00)

6.4 Library Services

Of the total, 72.33 per cent of the respondents rated good and very good with regard to circulation services. The majority (73.67 %) of them rated as good and very good about the reference services. Gunasekera[16] study shows that (95.2 %) of the users visited the library for referring reference books. Of the total, over two-fifth (42.67%) of the respondents rated as 'not up to my expectation' and 'not at all acceptable' about photocopying service. A similar study was done on the use of photocopying service established that the most (93.3%) of the students used this service to circulate their study materials[16]. From this data, it is clear that respondents are satisfied with circulation and reference services, but photocopying service is not up to the mark so it has to be improved to satisfy the users. Due to heavy users, there is a delay in delivering service

immediately so the rating is a bit low. The majority (89%) of them feel that the working hours of the library are suitable. Of the total, over two thirds (73.33%) have not faced any problems while issuing the books. (Table 5)

6.5 Library Facilities

Of the total, over half (58.67%) of the respondents rated *low* about photocopying service available in the library and require improvement in term of service. The majority (72%) of them stated that laser printing facility need to be introduced in the new library building. Of the total, 71.67 per cent indicated that scanning facility should be introduced and also 65.33 per cent of them felt that the spiral binding facility should be introduced in the library. Close to half (45.67%) of them rated that printing of past exam question papers needs to be provided and 58 per cent of them stated that past exam papers should be in e-form available on their library website so that they can print them easily. It is clear that most of the required facilities are not available so requesting to consider in introducing in the new library building. The majority (66.33%) of them are satisfied with the seating capacity provided by the library. Whereas, 33.67 per cent of the respondents have suggested to add more seats to accommodate all the users in the library. (Table 6).

Two fifth (40.67%) of the respondents were not satisfied with the photocopy facilities and therefore rated it as not up to the mark. Of the total, 34.66 per cent of them rated as average, 23 per cent rated as *good* and 1.67 per cent rated as *very good*. It is clear that photocopying facility is *very poor* and library staff should pay more attention to satisfy the user's requirements. The poor rating is because of the delay in delivering the work. Many times all students come together for photocopies, but the work is done as per queue order and that leads to delay in delivering of the photocopies to the students on time. Photocopying is one of the services provided by the library. Of the total, the majority (72%) is not happy with the price paid for photocopying in the library and most of them feel paying more for photocopying. The library staff should ensure that library services are not to run for profit, but provide services

cost to cost to users. Over half (56.33%) of the respondents are willing to do photocopy on their own if such provision is made. Of the total, 51 per cent are willing to pay for both good and bad copies however, it is the responsibility of the library to provide good quality photocopies at a reasonable cost.

6.6 Digital Library

Of the total, the majority (72%) of them are aware of the digital library facility located in the computer science department. Most of the respondents used digital library for doing their projects, assignments, seminars, reading journals, checking mail, viewing company profiles, looking for placement opportunities and checking for results. Over half (54.67%) of the respondents indicated that they did not face problems while using digital library. Of the total, 45.33 per cent of them faced problems while using digital library. The problems faced while using digital library include an inadequate number of systems, limited seating capacity and slow internet connection so these issues should be addressed immediately to satisfy the end users. Now, the digital library is moved inside the main library so all these problems are taken care.

To make optimum use of the library resources, it is proposed to offer training to users of the library. Of the total, more than half (51.33 %) of them are willing to attend training and less than half (48.33 %) of them are not interested. It is clear that respondents are willing to learn to use the resources through library training. The reasons for not attending the training programme and also identify the ways and means through which they acquire skills to use the library resources should be examined in another study. Different individuals have given different time frames for attending library training, overall, an average of 15 hours training per semester is suggested by these respondents.

6.7 Library Staff

The majority (81.67%) of the respondents are satisfied with the services rendered by the library staff in getting the requested textbooks. Of the total, 18.33 per cent of the respondents felt that they do not receive the requested textbooks on time.

Table 5. Services provided by the library

Rating of library services	Very good (%)	Good (%)	Average (%)	Not up to my expectations (%)	Not at all acceptable (%)
Circulation	23.00	49.33	22.00	3.67	2.00
Reference	22.67	51.00	22.33	3.33	0.67
Photocopying	8.67	19.00	29.67	20.00	22.67

Table 6. Evaluation of library facilities

Rating / Statement	Satisfied with the existing facility (%)	Existing but needs improvement (%)	You should introduce this facility in the new building (%)
Photocopying	16.67	58.67	24.67
Laser printing	12.00	16.00	72.00
Scanning	12.33	16.00	71.67
Spiral binding	12.33	22.33	65.33
Past exams papers in print form	17.67	36.67	45.67
Past exams papers in e-form on college internet	11.67	30.33	58.00

Table 7. Attitude of library staff towards users

Reason for not visiting library	Respondents (percentage)
Highly cooperative	62 (20.67)
Very cooperative	178 (59.33)
Cooperative	6 (2.00)
Not cooperative	47 (15.67)
Highly uncooperative	7 (2.33)

The majority (59.33 %) of the respondents felt that the attitude of the staff was very cooperative and one-fifth (20.67 %) of them rated that staff are highly cooperative against 15.67 per cent of them rated that the staff are not cooperative and 2.33 per cent rated them as highly uncooperative. This data revealed that professional staff are employed by the library to serve the users. After shifting the library, all resources are made open access so all those problems are solved.

Respondents rated that the services provided by library staff are very good (64.67 %) and excellent (17.67 %). Overall the services provided by the library staff are satisfied by the respondents because 84.01 per cent of them rated it as good to excellent. Of the total, the majority (70.33 %) of them state that they come across some barriers while using the library, but one-third (29.67 %) of them have not come across any barriers while using the library.

Table 8. Suggestions to overcome barriers while using Library

Suggestions to overcome barriers	Respondents (percentage)
Computers and printers should be available in the library	156 (52.00)
Provide OPAC terminals to search	51 (17.00)
Open access to library collections	91 (30.33)
Quick photocopying policies along copyright compliance	110 (36.67)
More experienced staff members to help	129 (43.00)
Increase opening hours of the library	110 (36.67)
Digital library should be inside the library	98 (32.67)
Reduce the noise levels in the library	37 (12.33)

Note: Respondents are permitted to tick more than one option

Respondents suggested that a separate collection should be provided for each branch, project reports and e-journals should be made easily accessible for reference, books and e-journals, e-magazines should be subscribed for wider usage. Books, e-readers and computers should be provided to facilitate the reading of subscribed e-resources in the library. Fiction and non-fiction books are also suggested to add for leisure reading. Air-conditioning, scanning, printing, binding services should be provided in the library. The competitive exam book collection and TOEFL books should be procured for preparing to do PG courses abroad and the library internet facility has to be improved by increasing the network broadband.

6.8 Overall Evaluation

Of the total, the majority (78.67 %) of them rated that existing facilities provided by the library are adequate enough for their courses however, one-fifth (21.33 %) of them did not agree so suggested to take necessary action quickly. From this data, it is clear that library is keeping up-to-date with collections, improving facilities and services, therefore, the majority of them are satisfied with the library facilities.

The majority (89 %) of the respondents felt that library should have a website. It is clear that most of the respondents wanted to have a separate library website so that lecture materials, study materials, etc. could be made available on the college intranet.

Table 9 shows that 79.67 per cent of the respondents expected that the library should provide a database search on the library website. Less than half (48.33 %) of them expected to provide subject gateways and 29.67 per cent expected to provide OPAC search. To implement this suggestion, the library has to employee an IT technician so that these facilities and services could be provided.

Table 9. Services expected to deliver through library website

Services expected	Respondents (percentage)
OPAC search	89 (29.67)
Database search	239 (79.67)
Subject wise links pages	145 (48.33)

Note: Respondents are permitted to tick more than one option

From the above Table 10, it is found that three-fourths (75 %) of the respondents rated as good and very good about library collections. The majority (72 %) of them rated the library facilities are good and very good. Three-fourth (76 %) of them rated that library services are good and very good. Of the total, 47 per cent of the respondents rated the photocopying services as poor and very poor, so there is an immediate need to improve and also procure new machine to satisfy users. More than half (59.33 %) of them rated opening hours of a library as good and very good. Three fourths (76.67 %) of the respondents rated that the staff assistance provided in the library as 'good' and 'very good'. From this data, it is clear that most of the respondents are satisfied with the Library collections, Library facilities, Library services, opening hours and staff assistance except photocopying service and fee.

6.9 Recommendations of Library Users

To make library services more efficient and easier to use the collections, users made a few recommendations. Those include: increase book collection in all core subjects, digitize all available resources, add more copies of textbooks wherever there is demand, increase library opening hours, add one more counters for circulation, provide a printer and new photocopying machine, issue 5 reference books to each student, provide a drop box for returning books, the digital library should be made available in the main library, training on searching online databases to be provided, add extra chairs for reading room, tighten the library security, increase the loan period of textbooks, subscribe e-books, e-journals and e-magazines and separate reading room for newspapers.

Table 10. Overall library evaluation

Rating / Statement	Very good (%)	Good (%)	Satisfactory (%)	Poor (%)	Very poor (%)
Library collections	19.33	55.67	20.00	4.67	0.33
Library facilities	18.33	53.67	24.33	3.67	-
Library services	22.67	53.33	21.67	2.00	0.33
Photocopying fee	8.67	19.66	24.67	30.00	17.00
Opening hours	16.00	43.33	30.33	7.01	3.33
Staff assistance	32.67	44.00	21.67	1.66	-

User orientation programme should be conducted at regular intervals or from time to time to make the users aware about library collections; hands-on training may be given on how to use the OPAC, searching for information etc. to be provided[20]. User needs have to be given top priority during collection building. The library must organize training for staff on regular basis to keep them up-to-date. The library should be user centered than system centered, and also conduct user studies from time to time to know their day-to-day requirements and taking feedback on the services provided to them[16].

7. MAJOR FINDINGS

This study certainly will help in building a library collection that will satisfy engineering college students and faculty members. The data analysis shows that about three fourths (73.33 %) of the respondents are males outnumbered to female respondents. In this study the majority (84.01 %) of the respondents belongs to 20-22 years of age group. Of the total, over two thirds (68 %) of the respondents are undergraduate students and the remaining are PG students and faculty members. Interesting to know that over three fourths 78 (80.33 %) of the respondents prefer to print form textbooks and the majority (80.33 %) of them also prefer print form reference books. These results matches to another study conducted in USA found that 92 per cent of college students who are heavy users of cellphones or tablet computers indicated that they prefer print books to e-books for their studies[22].

With regard to the gaps in the library collection, the majority (80 %) of them indicated that they have not found any gaps and most (93.33 %) of them have not found any problems or any other issues in accessing the available resources in the library. While rating the library services, about three fourths (72.33 %) of them rated good and very good about circulation services, and about three fourths (73.67 %) of them rated good and very good with reference services. However, about three fourths (73.33 %) of them faced minor issues while borrowing the books because of too many students come together to borrow books during their break time in between the classes. The only solution to this problem is either to employ more staff or install auto lending machines; here both the options are expensive to the institution so one has to look for some solution for this problem. Overall, the majority (89 %) of them felt the working hours of the library are suitable to them.

Of the total, about three fourths (72 %) of them are in need of laser printing facility, 71.67 per cent of them wanted scanning and two thirds (65.33 %) of them wanted spiral binding facility which are to be introduced in the library in the

near future. Unfortunately, about three fourths (72 %) of them are not happy with the photocopying fee in the library and that has to be looked into on priority and soon change the tariff at par with market rates.

The majority (81.67 %) of the respondents are satisfied with the services offered by the library staff. Out of these, 64.67 per cent of them rated the services provided by library staff are very good.

More than three fourths (70.33 %) of them stated that they have not come across any barriers while using the library. The majority (78.67 %) of them rated that the existing facilities provided by the library are adequate for their courses. Particularly about three fourths (72 %) of them are aware about the digital library facility and using it for their day-to-day learning, assignments and projects work. At end, the majority (89 %) of the respondents felt that library should have a separate website which will really help the library to upload their resources on regular basis and users can easily download the resources of their need.

8. CONCLUSIONS

This study clearly pointed out the vital role of a library in an engineering college. Most of the students depend on the print form of library collections. With changes in technology, library has started providing an electronic form along with print forms. User's orientation and training should be given in every semester to optimally use the available resources. To provide superior services, engineering colleges must improve internet facilities, e-journals, e-magazines, e-books etc. It should also procure or subscribe e-collections, number of computers to be increased and library should be conscious with information resources to offer effective and precise services to the users. The engineering college library should always strive to move along with changes in technology, orient the library staff to provide new services and assist the users as and when required.

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CONTRIBUTORS

Dr Chennupati K. Ramaiah received his MSc (Chemistry) and MLISc. Presently working as the Dean, School of Media and Communication and Professor at the Department of Library and Information Science at Pondicherry University, Puducherry. He has published over 125 papers and 5 books. His areas of interests include: Multimedia and hypertext technologies, human-computer interaction, user interfaces, designing e-books, e-publishing, e-learning, archival informatics, and bibliometrics.
Contribution in the current study is the main investigator of this project.

Mr Somipam R. Shimray is pursuing his PhD in the Department of Library and Information Science, Pondicherry University, Puducherry. His areas of interests include: Design and development, user interfaces, mobile reading, ROI, cultural informatics, heritage information systems and indigenous knowledge preservation. Contribution in the current study he is the coinvestigator of this project.