Report of the Academic and Administrative Audit Committee

Sri Ramachandra University, Porur, Chennai.

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Lines of command are linear  
(and turn us reactive)  
Lines of communication are circular  
(and make us proactive)  

William Arnold & Jeanne Plas
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ACKNOWLEDGMENTS

The members of the AAA Committee record their appreciation and gratitude to Shri V. R. Venkataachalam, Chancellor of Sri Ramachandra University for the confidence shown in the Committee and for entrusting the team with the responsibility of carrying out the Academic and Administrative Audit of the University. The Committee wishes to thank Prof. J.S.N. Murthy, Vice Chancellor, for his leadership and meticulous attention to details in facilitating the audit process. The Dean (Research) Prof. S.P. Thyagarajan, Dean of Faculties Prof. K.V. Somasundaram, Coordinators of IQAC Prof. (Lt Col) A. Ravikumar, Prof D. Chamundeeswari and the Registrar Shri N. Natarajan have shown enormous care and fortitude in planning and arranging the Committee’s site visit with precision. The Committee thanks them as well as the members of the IQAC, officials of the University, faculty, staff and officials of the Medical Center and Hospital who worked as a dedicated team and enabled the audit process by providing information with candor and clarity. Our special note of gratitude to the students, their parents and the alumni for the valuable input they provided.
INTRODUCTION

An increasingly prevalent trend in the higher education scenario in India in recent years is the willingness and drive by institutions and universities to introduce systems and practices in their work environment and establish high standards and benchmarks to guide their performance in keeping with the institution’s vision and mission. More and more colleges and universities in the country volunteer to subject their activities and performances to be critically reviewed and audited by national and international agencies. The contributions by national bodies such as the National Assessment and Accreditation Council (NAAC) in the educational sector, NABH in healthcare practices and NABL in laboratory practices have sensitized an increasing number of forward-looking establishments in the country to participate, learn and benefit from the expertise and readiness of these agencies to foster such participatory learning. Creation of internal quality assurance mechanisms that help to inculcate the gains made from such efforts in the day-to-day work ethics and organizational culture of the institution is an indispensable requirement in any quality assurance scheme. The Internal Quality Assurance Cell (IQAC) advocated by NAAC and mid-term quality appraisal drives belong to such recommendations.

The constitution of the Academic and Administrative Audit Committee by the Vice Chancellor of Sri Ramachandra University as a prelude to the preparations to get the University reassessed and re-accredited by NAAC by 2013-14 is a step in this direction. The terms of reference spelt out for the members of the AAA Committee confirm this. The University completed institutional accreditation by NAAC and received the certificate of accreditation in January 2009, securing ‘Grade A’ with a Cumulative Grade Point Average of 3.52 out of 4.0 points. The present AAA Committee Report is the first mid-term audit and appraisal submitted to the university.
Terms of reference for the Academic and Administrative Audit Committee

The AAA Committee was invited by Sri Ramachandra University to conduct a comprehensive review of the facilities and workings of the University after its assessment and accreditation by NAAC in 2009 as a Mid-term quality assessment initiative with particular reference to changes in academic and administrative mechanisms the University has introduced during the post-accreditation period.

The terms of reference for the AAA Committee that have been defined below after preparing the self-study report (SSR) from the university as per the NAAC format and finalizing the logistics of arrangements and visit schedule of all constituent units of Sri Ramachandra University for the conduct of the visit of the AAA Committee on 11th, 12th and 13th February, 2013:

1. The Academic and Administrative Audit is expected to provide an objective insight to the university on the level of holistic quality improvements that have been implemented during the post-accreditation period on all aspects of the seven criteria of assessment adopted by NAAC.

2. The audit process will involve escorted tours to the physical facilities, interaction with heads of departments, faculty, University officials, students, their parents, alumni, employees and other stakeholders and review of documents pertaining to the information included in the Self Study Report. The members may request for any additional documents/clarifications that may be required for successfully completing the audit process. The audit process will also include the assessment of the action taken report provided by the university on the recommendations made by the Peer Team that conducted the first cycle of NAAC assessment and accreditation.

3. The period of visit may be usually for three days, but could be extended with mutual agreement if the Committee feels that such extension is necessary in the interest of effective completion of the audit process, ending with an exit meeting in which the Chairman and members of the AAA Committee will brief the Vice Chancellor and other officials of the University with a provisional summary of their findings.
4. The AAA Committee may prepare its final report after careful analysis and triangulation of the SSR submitted by the university, observations made during the visit and interactions/verifications conducted by the AAA Committee in a narrative style with appropriate headings and bullet points. Extracts from any of the material presented by the University or documents reviewed by the Committee may be included in the report if required. The report will cover, as far as possible, all the seven criteria adopted by the NAAC on Institutional Accreditation. The report will also include at the end, an analysis of the Strength, Weakness, Challenges and Opportunities and conclude with Recommendations if any, that the Committee may feel relevant in enhancing the quality of higher education provided by the University.

5. Handing over of signed copies of the AAA Committee Report may be carried out later in a formal meeting by the Committee members to the Vice Chancellor and officials of the University on a mutually agreed date, coupled with a faculty-briefing meeting by the AAA Committee experts.
Sri Ramachandra University: a brief overview

Sri Ramachandra University is a Unitary, Deemed-to-be University and was established in September 1994 under Section 3 of the UGC Act, 1956. The University has Sri Ramachandra Medical College & Research Institute and seven other faculties functioning under it – Faculties of Dental Sciences, Pharmacy, Nursing, Physiotherapy, Biomedical Sciences, Technology & Research, Allied Health Sciences and Management Sciences. Several other educational, healthcare and research facilities are located in the 150 acre campus of SRU. These include the Sri Ramachandra Hospital, Sri Ramachandra Medical Center, Central Library (Sri Ramachandra-Harvard Learning Center), Central Research Facility, Central Animal Facility for Developmental Research and Toxicology (CEFT), ‘Vidya Sudha’, Sri Ramachandra Learning Center for Children with Special Needs, the upcoming Center for Sports Medicine and Exercise Sciences, hostel facilities for men and women students and residential accommodation for the faculty and staff.

The educational programs of the university are handled by 72 departments. This represents an addition of 7 more departments compared to the figure in 2008. The total number of students on the rolls of SRU has increased from 4368 in 2008 to the current figure of 4990 and the figure for permanent faculty members has increased from 562 to 791 during the same period with 41 additional teachers added as visiting faculty.

The co-existence Sri Ramachandra Medical Center, Sri Ramachandra Hospital and the community and rural health network and active participation in Tamil Nadu Government-sponsored health insurance scheme for people in the below poverty line are distinguishing features of the institution.

Sri Ramachandra Medical College & Research Institute celebrated its 25th Anniversary in 2010 with a year-long series of activities that included several academic, healthcare and research programs culminating in a concluding celebration in October 2010. The University unveiled several new initiatives in this connection and has released the ‘SRU Vision 2025’ document to take its strategic plans for future actions to higher levels of achievements and benchmarks.
All the constituent units of the University and its highly motivated faculty, staff and students continue their participation with a palpable sense of dynamism, commitment and solidarity in realizing the vision and mission of the institution.
Actions taken by the University in response to the Recommendations of the visiting NAAC Peer Team in November 2008

The seven-member NAAC peer team had made several positive remarks in appreciation of the University’s efforts to ensure high quality standards in all the educational, healthcare and research programs offered by the institution. SRU has included in its Self Study Report (February 2013) information on the actions taken by the University in response to the recommendations made by the peer team:

- **Library facilities in terms of the number of books need to be augmented.**

The reports of the Vice Chancellor and the Chief Librarian confirm that the total number of textbooks and reference books in the library was increased to a total of 40249 in 2012 by adding to the acquisition of the Central Library 10,124 more books in the last four years. The total cost of acquiring books so far has been Rs. 47644543/- A similar effort has been made to increase the number of national and international journals from 447 in 2008 to 501 in 2012 at a total cost of Rs. 139272969/- The other significant feature is the increase in the number of electronic learning resources (text books, journals and other resources) added to the library at a cost of Rs. 9790696/-

The Central Library has increased the electronic databases substantially in the last four years. These include institutional membership with DELNET, ProQuest databases with 2409 journals/e-books and abstracts, ‘Uptodate’ clinical decision support database, EBSCO, J-Gate, Medline and Medlars databases. Subscription has been expanded to 430 online journals published by reputed international publishers like Wiley-Blackwell, Science Direct, Medknow, Karger etc.

**Observations:**

- Although SRU has succeeded in increasing the number of books, there appears to be still a paucity in the number of copies of prescribed text books for some of the courses. Interaction with students confirmed the difficulty they experience in finding text books especially during the examinations.
- Currently Wi Fi facilities seem to be effective only in and around the library. Students reported on the difficulty they experience accessing to Internet and online information in other areas like clinical teaching sites, hostels etc.

- **Orientation of teachers in basic sciences and non-clinical disciplines for application of the knowledge as relevant to the program rather than just transfer of knowledge.**
The medical, dental and health sciences education units of the University have taken up this as an important task and have made several changes in their Faculty Development Programs. Sri Ramachandra Center for Health Professional Education & Faculty Development has identified this as an essential objective and is working towards its practical realization. The University conducted 22 refresher courses and 21 orientation programs in addition to organizing micro-teaching workshops, coordinator workshops and Curriculum Implementation Support Program of MCI (CISP) workshops. These were highlighted in the presentation by the Dean of Education before the AAA Committee members.

Observations:

- The strengthening of the activities of the Medical Education Unit and creation of education units in other Faculties like Dental Science, Pharmacy and other Health Sciences Faculties has allowed more faculty development programs and training of teachers to stress on the application of knowledge in basic sciences in the clinical scenario.
- Some of the students doing courses other than MBBS expressed the concern that teachers do not show the same inclination to stress on practical application of basic sciences knowledge when teaching them.

- Introduction of policies for resource sharing facility and performance-based awards and rewards for faculty.

SRU has introduced and enhanced the existing policies to facilitate resource sharing between and within the faculties. The Dean of Research and Director of the Central Research Facility as well as the Director of CEFT explained these to the AAA Committee members. In addition, the members learned from the Dean of Research and the Vice Chancellor about the consultancy rules and the Technology-Business Incubator of DST introduced since 2009. The other steps included the IPR and Patents Cell and Performance-linked incentives for faculty introduced in 2012.

Observations:

- The University’s current strategies to enhance resource-sharing facilities has allowed faculty and research scholars to access research facilities with greater ease. Interaction with the faculties suggested a greater awareness of the University’s efforts to provide greater incentives for their research efforts.
- The results of the recently introduced performance-linked incentives to faculty are yet to be seen.
• More outreach and extension activities targeting rural communities and their healthcare need to be planned and undertaken.

SRU has introduced more outreach and extension activities targeting the rural community in the neighboring villages and has augmented the already existing facilities for such services. The list of such activities includes strengthening of SRU participation in PHC services at Nemam and Mugalivakkam and acquisition of 4.5 acres of land at Vayalanallur and completion of infrastructure and other facilities for the SRU Rural Health Center there. The AAA Committee members visited the impressive facilities at Vayalanallur and interacted with the medical, nursing and administrative staff working there. SRU has also entered into a Public-Private Partnership as part of the National Rural Health Mission (NRHM) activities in addition to providing advanced surgical treatment for patients in the below poverty level, a program initiated under the Tamil Nadu Government Health Insurance scheme.

The other extension activities targeting rural population include community health nursing services extended to villages in Nanganallur, Nootchimedu and Koothambakkam; community dental care provided to Poombari village, Kutram and Thiruthuraipoondi; diagnostic and rehabilitative services for hearing-impaired children in villages in Thiruvannamalai and Kancheepuram provided by the department of Speech, Language and Hearing Sciences in collaboration with international agencies like SmileTrain and Transforming Faces Worldwide (TFW) and the extensive Telemedicine coverage networked to 72 centers all over India and to several countries in Africa through the Pan-African e-Network; the latter an initiative of the Ministry of External Affairs, Government of India.

Observation:

- The University has made consistent efforts to extend its outreach and extension activities. This was evident from its recent establishment of the Rural Health Center at Vayalanallur as well as from the reports on outreach and extension activities of other Faculties and departments.

• Instead of initiating undergraduate courses with micro specialization, University may think of starting 5 or 6 year integrated courses.

The University’s recent efforts in this direction include introduction of a 6-year Pharm-D course approved by the Pharmacy Council of India, plan to introduce a 5-year integrated
M.Ch. course in Neurosurgery approved by the medical Council of India and the 5-year integrated MD/MS-Ph D program supported by ICMR.

**Observation:**

- SRU has introduced several new courses in the last five years including integrated 5 and 6 year courses with formal approval by the concerned statutory councils. The ICMR-supported 5-year integrated MD/MS/MDS Ph.D. program is a unique initiative in this direction.

- **More proactive involvement of young and midlevel potential faculty in decision making, planning and managing the departments will help in sustenance of the initiatives of the senior faculty.**

An important step in response to this recommendation is the University’s decision to introduce rotation of headships in departments that would allow the talents and abilities of younger faculty members to be brought out and utilized in managing the affairs of the departments. This was implemented in 2011. The other initiative was inclusion of a larger number of younger and middle level faculty as members of the various committees of the University like the Board of Management, Academic Council, Curriculum Committee, IQAC, Hospital Committee and the Education Units.

**Observation:**

- The University has responded to this recommendation by introducing several well thought-out and pragmatic steps.

- **Research projects spanning over a period of one year, integrated into the curriculum should be made mandatory for all Post Graduate Courses.**

In all the postgraduate courses, research projects are included as a mandatory requirement and students are required to get their work certified by their PG guide and submit their dissertations before they are allowed to appear for their final qualifying examination. M.Phil dissertations and Ph.D. theses are monitored by the Research Advisory Committee. All post graduate students at SRU are also required to appear and pass in assessment tests on Research Methodology and Biostatistics. The University encourages and helps the students in publishing their research findings in national and international journals and in preparing paper and poster presentations in national and international seminars and conferences. The Dean (Research) confirmed that this was one
of the reasons for the steep increase in the number of research articles published after 2008.

Some of the other initiatives SRU has introduced after the peer team visit in 2008 include:

- Establishment of a student council in 2012 with nominated members as office bearers.
- Introduction of several value-added courses. These have been approved and will be implemented from 2013.
- Inclusion of student representatives in several committees like the Curriculum Committee, Anti-ragging Committee, IQAC etc.

**Observations**

- The University has complied with the recommendation to include research projects as part of the mandatory requirement for all postgraduate course.
- Postgraduate students are required to appear and pass in assessment on Research Methodology and Biostatistics.
In completing criterion-wise appraisal of the performance of Sri Ramachandra University in the post-accreditation period, the AAA Committee relied predominantly on information gathered during the onsite visit to the SRU campus from the 11th to the 13th of February 2013. In addition to the data included in the Self Study Report prepared by the University in February 2013, information from other sources like Annual Quality Assurance Reports submitted by the IQAC to NAAC, presentation of the report of the Vice Chancellor, presentations by Dean (Research), presentations by university officials, Directors of Sri Ramachandra Hospital and Medical Center, Deans and department heads, Chief Financial Officer and formal and informal discussions with faculty, staff, students, parents and alumni was also analyzed. Clarifications and re-confirmations of some of the observations were gathered from time to time by additional input through e-mails and telephone conversations with University authorities during the preparation of the final draft of the report.

Reports on the appraisal of individual departments under the Faculties of Medicine, Dental Sciences, Pharmacy and Nursing have been included in a tabular form in the Annexure. The Committee felt this necessary to keep the printed report within reasonable limits.
Criterion I: Curricular Aspects

Sri Ramachandra University has made special efforts to plan the curricula for the various courses and to incorporate components such as professional development, communication skills, ethics and behavioral sciences in addition to ensuring that the contents in terms of knowledge, skill and attitudinal requirements and assessment methods mandated by the various statutory councils and apex bodies are fulfilled. The education units and curriculum committees with the help of the Boards of Studies and external experts have been able to introduce curricular reforms and modifications in 73 courses offered by the University.

In all, the University has introduced 13 new postgraduate courses between 2008 and 2012. These include:

Pharm D and Pharm D (PB) programs (2009)
MD Forensic Medicine (2011)
DM Critical Care Medicine, DM Reproductive Medicine, M.Pharm - Pharmacology, M.Pharm - Pharmaceutical Analysis and B.Sc Sports & Exercise Sciences (2012)

These, as well as several other interdisciplinary and value-added courses have been introduced based on needs analysis and stakeholder feedbacks. The other notable addition was the introduction of the integrated MD/MS/MDS-Ph.D. program, supported by ICMR with a view to foster the spirit of investigation and research among clinicians. SRU’s efforts to enter into collaborations, exchange programs and MoUs with several national and international institutions have helped the University to stress on global competencies and universal trends in its academic programs.

The other notable feature is the emphasis on research orientation integrated into the course curricula. Research projects have been emphasized in all Postgraduate curricula just as research ethics education has been stressed in the integrated MD/MS/MDS-Ph.D. and Pharm D programs.

SRU has taken steps to introduce academic flexibility through core and elective options in some of the courses. The academic leaders were keen to stress on the features of the 21 new value-added courses and the twinning program and elaborate on the efforts at enhancement of the learning environment by increasing the adoption of IT technology, innovative teaching learning methods, academic flexibility through core and elective
options, up-gradation of infrastructure facilities, emphasis on ethics and value-based education, expansion of education units and intensive faculty development programs to improve teacher competence.

Feedback

SRU has fine-tuned its 360 degree feedback mechanism on curricular aspects that involves students, peers, external experts, alumni and employers. Student feedback procedure has been computerized recently. The AAA Committee members were shown examples of computerized feedback forms incorporating 26 questions with responses set in a 5-point Likert scale. The 6 questions concerning the curriculum for example, provided the following student feedback:

<table>
<thead>
<tr>
<th>Student Response [% of total] N=875</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The content met my expectations</td>
<td>32</td>
<td>61.5</td>
<td>4.6</td>
<td>1.4</td>
<td>0.6</td>
</tr>
<tr>
<td>2. Content had depth &amp; extensive coverage</td>
<td>32.3</td>
<td>56.1</td>
<td>9.5</td>
<td>1.7</td>
<td>0.3</td>
</tr>
<tr>
<td>3. Strengthened my knowledge &amp; skill</td>
<td>38.2</td>
<td>55.7</td>
<td>4.3</td>
<td>1.3</td>
<td>0.5</td>
</tr>
<tr>
<td>4. The goals &amp; objectives clearly stated</td>
<td>35.5</td>
<td>55.9</td>
<td>7.5</td>
<td>0.9</td>
<td>0.1</td>
</tr>
<tr>
<td>5. Learning activities match objectives</td>
<td>37.3</td>
<td>54.3</td>
<td>5.8</td>
<td>2.1</td>
<td>0.6</td>
</tr>
<tr>
<td>6. Methods of evaluation were appropriate &amp; fair</td>
<td>29.4</td>
<td>54.4</td>
<td>11.1</td>
<td>4.0</td>
<td>1.1</td>
</tr>
</tbody>
</table>

The University also tabulates ‘Student Satisfaction Index’ as a global database based on student responses on all the 26 points and uses this for quality enhancement of curricular offerings and student support measures as part of IQAC quality initiative.

The innovative, integrated curriculum based on organ system blocks introduced in 2006-07 for the MBBS course includes PRODEV, a well-structured and effectively delivered module with emphasis on communication skills, ethics and empathy in the practice of medical profession and needs special mention. The PRODEV module has been revised in 2011. The Medical Education Unit has evaluated student performance and other outcome measures and compared these with the learning experience and student achievements in the earlier, discipline-based curriculum. The MEU has documented a larger proportion of students achieving higher performance levels compared to the traditional curriculum.
It was efforts such as these on curricular offerings and the several faculty development programs over the past two decades with help from Harvard Medical International that made the Medical Council of India recognize SRU as a Regional Center for Medical Education and Faculty Development with responsibility to disseminate knowledge and skills in educational technology to the teaching faculty of 29 other medical colleges in the region.

The Medical Education Unit is currently involved in developing integrated assessment methods for the MBBS program and has started training the faculty in this with the help of international experts in curriculum development like Prof. Raja C. Bandaranayake from Sydney, Australia.

Based on the experience of the Medical Education Unit, the Dental Education Unit has recently introduced integrated learning sessions for the BDS program.

**Observations:**

- The University has made significant efforts in curricular modifications and has added several new courses with emphasis on research.
- The successful models of integrated curriculum and methods of assessment employed by the Medical Education Unit have stimulated other faculties in the University to adopt such innovative models.
- The introduction of the ICMR-supported integrated MD/MS/MDS Ph.D. program has been successful and has been accepted with interest by postgraduate students in the clinical disciplines.
- SRU has not yet been able to introduce choice-based credit system with intra- and inter-university credit transfer facility. It is understandable as such credit documentation and transfer are not recommended or approved by most of the apex bodies of professional education in this country. However, this has been included as one of the University’s Goals & Objectives to be realized by 2015 in its Vision-2025 document (4.1.1)
- SRU’s 360 degree feedback system and the method of tabulating Student Satisfaction Index appear to be an improvement on the feedback system used earlier.
- The recognition of the efforts of the Medical Education Unit by the Medical Council of India and its designation as one of the 12 Regional Centers in the country for Faculty Development Workshops has had a University-wide positive outcome in that it has stimulated other disciplines like Dental, Pharmacy, Nursing and other Health Sciences Courses to take up energetic training programs in educational technology for their faculties.
SRU follows admissions criteria for many of the undergraduate and postgraduate courses as governed by statutory bodies like MCI, DCI, Pharmacy Council of India, Indian Nursing Council etc. The University gives wide publicity in national and regional news papers and in its website about the All-India Entrance Tests conducted for the various courses and selects candidates from a rank list prepared based on the candidates’ performance in the entrance examination. 15% of students admitted for some courses like MBBS and BDS are kept for NRI students. For some UGC-approved para-professional courses like Biomedical Science, Medicinal Chemistry and Bioinformatics the admissions are carried out based on performance in an interview process.

SRU has developed methods of online processing of applications and announcement of admission results in the University website with information displayed on marks scored by the candidate and the cut off.

The Medical Council of India has recently approved an increase in the number of annual admissions for the MBBS course at SRU from 150 to 250. This was implemented from 2011. A similar MCI-approved increase in the admissions for the postgraduate courses was also brought into effect from 2011. Other statutory Councils like DCI and RCI have also recommended increased admissions for courses under their purview.

On the whole, the courses have shown a wide range of demand ratio over the years. This has averaged around 7:1 to 6:1.

SRU has introduced several systems to effectively initiate the new entrants to the unfamiliar environment and guide them smoothly through their learning requirements. One of the first experiences a new student goes through in the campus is exposure to a structured orientation program lasting several days, organized by the University officials in which the Deans, Associate Deans (Students), Principals, course chair persons and faculty participate. Students are given snapshot views of the campus and the facilities available here and explained how to access and use the learning resources and are generally sensitized on their rights and responsibilities. They are provided with copies of the updated Student Manual with information on the code of conduct and the academic calendar for the year and are taken on a guided tour of the campus facilities. From the year 2009, students are also required to sign a UGC-mandated undertaking against
participation in activities like ragging. Complete information on “UGC Regulations on curbing the menace of ragging in Higher Educational Institutions, 2009.” is included in the Student Manual.

**Academic counseling and mentorship**

The Dean of Faculties explained the practice of academic counseling and the longitudinal mentorship program. The latter, he clarified, was a modification of the existing mentoring process and was introduced in 2011. The efficacy of the longitudinal mentorship program is currently being evaluated. Formative evaluation and longitudinal mentoring help the faculty to identify slow and advanced learners at an early stage and allow counseling and other remedial measures to be implemented early on. The University arranges for additional instructional sessions for those identified as slow learners whereas advanced learners are helped to access more learning opportunities and resources, and guided to participate in competitive events, research and publication. One of the efforts by the University to help students with difficulty with English language was the establishment of a Language Lab in 2011 equipped with a comprehensive English language learning pack and software ‘tense buster for grammar’ and corrected speech for pronunciation.

The University has added more facilities in the campus to help physically challenged students by increasing the number of elevators in several areas and creating ramps, grab bars etc. The examination rules of SRU permit scribes and added time in the examination halls for students with specific difficulties.

**Teaching learning methods**

The learning objectives are clearly spelt out for all the undergraduate and postgraduate courses and the student manual contains information on the teaching learning and assessment activities for the entire academic year. The University has incorporated a variety of teaching and learning methods depending on the course. These include, in addition to didactic lectures, interactive sessions, small group discussions, student seminars, journal clubs, interdepartmental discussions, clinico-pathological meetings, bedside and chair-side teaching as well as case-based and problem-based sessions, clinical case presentations and demonstrations, and clinical ward rounds. The dissection hall and laboratories for practical sessions are adequate and well-maintained. The Committee members were taken on a tour of the expanded facilities for the increased number of student intake in the MBBS program. These include several large lecture halls that can accommodate 300 students, dissection hall, laboratories and the striking expansion of
facilities in the teaching hospital that has almost doubled the bed strength and added 12 state-of-the-art operation theaters and Intensive Care facilities.

SRU facilitates practical learning and skills acquisition by several well-planned and well-run simulation centers and skills labs. The endosurgical training lab in the department of General Surgery, the skills lab where postgraduate students practice skills in fracture fixation and joint replacement techniques in the Orthopedics department, the temporal bone dissection lab in the ENT department and the skills labs and simulation labs in the College of Nursing are notable examples. Undergraduate students practice several vital clinical skills like endotracheal intubation, catheterization, intravenous injection, lumbar puncture etc in the dedicated simulation center supervised by clinical teachers and the curator. The Committee members were shown log books in several departments in which the students are required to document the progress in their learning and get them certified by their faculty guides.

Sri Ramachndra University has added several computer-assisted learning facilities in the campus. Computers with Internet facilities have been added in all faculties and departments in addition to establishing Active Learning Centers in the Medical College and the Central Library where a large number of students can access learning resources with the help of supervisory staff. The Central Library premises have been made Wi-Fi. Similar Wi-Fi facilities could not be confirmed in other areas like the student hostels.

**Continuing professional education programs**

Continuing professional education programs, conferences, workshops and guest lectures form an important part of the routine learning activities in the campus. Three such programs with participation by national and international experts and professionals were in session during the three days of the AAA Committee visit.

Many of the departments conduct Annual Rapid Revision Courses lasting from 3-5 days to up to a week aimed at helping post graduate students to prepare for their final qualifying examinations. These were started 10 or 12 years ago by clinical departments in the medical college and stressed on didactic sessions. But in the last few years sessions on practical skills have been added and other faculties like the Faculty of Dental Sciences have also started offering such courses. The Rapid Revision courses attract hundreds of students from across the country and the organizers take pains to stress how they are compelled to limit the delegate numbers to a few hundreds to ensure effectiveness of instructional delivery.
**Community-centered learning**

SRU’s participation in community health programs in the *Primary Health Centers* at Nemam and Mugalivakkam as well as in the newly started *Rural Health Center* at Vayalanallur provide learning opportunities in health problems in the community setting. Undergraduate and postgraduate students of the faculties of Medicine, Nursing and Dental Sciences are routinely rotated through these centers. In addition, students from several departments join the faculty and staff and participate in the community health camps organized by the institution in different parts of Tamil Nadu. In some departments like Speech, Hearing and Language Sciences and Orthodontics, students accompany faculty and staff in providing diagnostic and rehabilitative services for specific target groups of village populations (e.g. children with congenital abnormalities like cleft lip and palate) as part of SmileTrain and Transforming Faces Worldwide (TFW) programs. The mobile health center with telemedicine facilities provides yet another opportunity for students to visit remote villages and familiarize themselves with health problems there.

Visits to pharmaceutical and industrial establishments and completion of project works based on such visits form part of the curricular requirements for students in the faculties of Pharmacy and Management just as such visits to nearby villages to study the health effects of environmental pollution and occupational hazards form part of the project work for students in the department of Environmental Health Engineering.

**Evaluation process**

SRU follows several learner assessment methods for its formative and summative assessments. The Dean of education explained how assessment modes and tools are developed to evaluate attainment of learning outcomes mentioned in the objectives for the courses. The assessment methods include theory questions, short notes and single-best response multiple choice items. Practical skills are assessed in laboratory experiments and clinical skills are assessed in bed-side and chair-side clinical examinations. *Viva voce* and project reports and dissertations complete the requirements for learner assessment.

Rules and regulations guiding the conduct of internal and qualifying university examinations are detailed in the *Examination Manual*. The examinations are conducted and results declared strictly in adherence to the schedules printed in the Student Manual. Examination regulations also mandate participation of teachers from outside universities and institutions as external examiners. Assessment techniques and tools are validated for quality and effectiveness. Multiple choice questions are similarly subjected to estimation of validity and difficulty index. An internal assessment cell for the Faculties of Medicine
and Dental Sciences under the purview of the Controller of Examinations was established recently with a view to ensure objectivity and confidentiality in conducting internal assessment theory examinations. The Examination Manual has also undergone a recent revision.

Objective methods of assessing attainment of learning outcomes by Objective Structured Clinical Examination (OSCE) and Objective Structured Practical Examination (OSPE) are increasingly used especially in formative assessments. Faculty know-how in designing assessment stations and assessment tools for such examinations are ensured by rigorous faculty development programs. The Dean of Education reflected how OSCE as a method of formative assessment of postgraduate learning has been employed in the department of Orthopedics from 1997-98 following two intensive workshops the department organized in successive years (1997 & 1998) in collaboration with the National University of Singapore. The experience so gained was quickly taken up by other departments in the Faculty of Medicine and subsequently by departments in other Faculties.

Faculty strength

Sri Ramachandra University has 791 full time faculty against a sanctioned strength of 650. This represents a faculty strength 21.7% in excess of the sanctioned strength. Of this, 183 are Professors, 133 Associate Professors/Readers and the remaining 475 are Lecturers. The faculty represent a wide range of educational experience acquired from notable centers in India and abroad. The annual faculty attrition rate recorded for the period 2007 to 2012 ranged between 4.19 (2012) and 18.32% (2009). Many of the senior faculty have served the University for ten years or more. Some of the senior faculty continue to be with the institution since its inception as a deemed to be university in 1994. One of the notable observations the AAA Committee members made on interaction with the faculty was the spontaneity, openness and enthusiasm they showed in presenting the features of the University and its academic, healthcare and research activities.

SRU has invested liberally in Professional Development Programs for the faculty. The University’s alliance with Harvard Medical International between 1995 and 2010 saw the unfolding of several initiatives in this direction that included SRU faculty visits to Harvard University, organization of leadership training workshops for the faculty, several didactic sessions and workshops on curriculum development, developing an integrated organ system-based modular curriculum for the MBBS program and visits of SRU students to HMI-associated hospitals for clinical clerkships.

The establishment of the Medical Education Unit and the intense faculty development programs under the aegis of the MEU supported by academic experts from Harvard
Medical International enabled the MEU to emerge as a powerful force in the campus to spearhead quality issues in education and resulted in the Medical Council of India recognizing it as a Regional Center to train and develop instructional workshops on educational technology for 29 other medical colleges in the region. Between 2008 and 2012, about 939 continuing education programs and 759 endowment/invited lectures were conducted. Specifically, the Education Units have successfully conducted 83 courses on educational technology - 22 refresher courses, 21 orientation courses and 40 others - in the same period.

SRU continues to provide several avenues for career advancement and opportunities for professional enrichment of the faculty. Young faculty are encouraged to pursue research through research starter grants of Rs. 100,000/- for Young Faculty Growth and Development Towards Excellence (GATE) scheme. In addition, the University facilitates access of faculty to extramural and intramural research projects. The University recently completed a faculty Development Program and IT skills training conducted by invited IT experts. The other areas where faculty are supported include special leave provisions and financial support to attend conferences, opportunities for fellowships and other professional training programs, participation in faculty exchange programs with national institutions as well as centers abroad and provision of easy access to books and e-resources.

Observations:

- The University has introduced several new features in teaching-learning methods to augment competency and practical skills at the undergraduate and postgraduate levels. Simulator-based learning of clinical skills for the undergraduates and the clinical skills labs for postgraduate teaching form part of this.
- The effects on teaching learning activities, learner assessment results, and of the longitudinal mentoring process after the increased intake of MBBS students from 150 to 250 are yet to be evaluated. SRU has taken this into consideration and has taken pro-active steps by re-designing the lecture halls, laboratories etc and by modifying teaching methods.
- Computer learning facilities have been improved. Although Wi-Fi facilities could be confirmed in the Central Library, this was not the case in other areas like hostels.
- There is evidence for year-round stream of professional education programs organized by various Faculties and departments in the campus.
- The Annual rapid Revision Courses have gained in popularity and others like the Dental Faculty have successfully adopted the model.
- The newly started Rural Health Center at Vayalanallur has strengthened community-centered teaching-learning activities.
- The total number of 791 full time faculty represents a faculty strength 21.7% in excess of the sanctioned strength. The annual faculty accretion rates in the years 2007 to 2012 ranged between 4.19 and 18.32%
- The atmosphere of spontaneous internalization of concepts of quality and professional ethics in its work culture was seen in the campus. The Committee feels that this was the result of the liberal investment of the University in faculty development programs and the Institution’s successful participation in several National and International quality team visits within a short span of four years after the first NAAC peer team visit in November 2008. These include accreditation of Sri Ramachandra Medical Center by Joint Commission International in 2009 and re-accreditation in 2012, accreditation of Sri Ramachandra Blood Bank by American Association of Blood Banks (AABB) in 2010 and re-accreditation in 2012, accreditation of Sri Ramachandra Medical Center by National Accreditation Board for Hospitals & Healthcare Providers (NABH) in 2012 and accreditation and re-accreditation of the Clinical Laboratory by National Accreditation Board for Testing and Calibration Laboratories (NABL).
- The University has recently introduced **Annual Performance Appraisal Scheme** for the faculty that includes self appraisal, expert/peer assessment, appraisal by department heads and student assessment of faculty performance. The Performance-linked Incentives, also recently announced, has been received with mixed feelings by the faculty.
Criterion III - Research, Consultancy and Extension

The Committee members were taken on an escorted tour of the impressive facilities SRU has introduced to foster a culture of research and the spirit of discovery and the University’s eagerness to extend the vast expertise and gains it has acquired in this area for the benefit of the students, faculty and the community. The Dean (Research), Director of CEFT, faculty and technical staff were willing and forthcoming in providing information about the several research facilities and projects implemented in the University at enormous cost.

The Central Research Facility (CRF)

One of the striking ventures of Sri Ramachandra University in the last six years is the Central Research Facility, established in 2007 and fully operational since 2009. The CRF was started to function as an ‘A to Z gateway for research, to take care of all logistics of research planning, research projects administration and research documentation in addition to providing a centralized sophisticated instruments facility. The Center includes a University-Industry Liaison Center with IRP/Patent Cell on a ‘ready to use platform’ to the entire University.

The CRF occupies an area of 25,000 sq ft and has a medical informatics and study design unit, Contract Clinical Trials Division, Epidemiology Research Unit, Project Development and Documentation Unit, Traditional Research Unit and a University Sophisticated Instrumentation Center. All high-tech equipments for genomics, proteomics, spectroscopy, chromatography, radioisotopy, microscopy, NMR facilities along with walk-in cold room (4°C), cryopreservation unit (-80°C and -146°C), Cold Room (-20°C) and a centralized administrative office are located here. All research and development activities of the University are Directed and coordinated by the Dean (Research).

The major and minor research projects in the University function under five operational categories:

- International collaborative projects
- Sponsored research projects funded by national agencies like the Department of Science & Technology (DST), Department of Biotechnology, Indian Council of Medical Research (ICMR), Council for Scientific & Industrial Research (CSIR) etc.
- Industry-Institutional R&D consultancy projects jointly funded by DST, Industries and international agencies
- Multinational and multi-centric clinical trials
Individual research projects by faculty and postgraduate students including Ph.D. scholars.

The Dean (Research) is assisted by seven members of staff in the CRF. These include 3 Application Specialists (Microbiology & Immunology, Genomics & Molecular Biology Chemistry) and 4 financial and secretarial staff.

The operational features of the CRF include:

- An epidemiology and research division which has grown into prominence after the Department of Science & Technology recognized the massive longitudinal epidemiological research undertaken in 2009 by the ‘PURSE-HIS Center for endovascular diseases’ attached to the CRF. The second phase of the study was commissioned in 2012.
- The Center for Lifestyle Modified Diseases and their Prevention was launched in June 2012. This Center will take up WHO guideline-based epidemiological studies on the causes for the increasing incidence in lifestyle-related risk factors in the community and is also funded by DST.
- A clinical research division recognized by the international pharmaceutical company Pfizer as Preferred Clinical Research Center.
- A sophisticated instrumentation laboratory designed and equipped to cater to research requirements of SRU, other research centers and universities and industries.
- Single-window automated research administration, a novel methodology that has yielded increased research funding since 2007.

The Center for Toxicology and Developmental Research (CEFT)

The Director of the Center accompanied the members on a visit to this facility located adjacent to the Medical College. CEFT is a CPSCEA certified small animal research facility operational since 2009. The Center has applied for GLP accreditation in 2012.

The Center is a purpose-built facility in an area of 15,000 sq ft and has facilities for breeding, maintenance, experimentation and laboratory studies. Animal experimental studies and research are conducted here in accordance with the principles of good laboratory practice and CPCSEA guidelines of the Government of India. The Center facilitates and fosters research and development in partnership with academic institutions, industries and funding agencies for drug discovery-cum-validation and devices of translational medical research. The Center is also involved in skilled manpower
development through education and training in laboratory animal care and experimental techniques.

CEFT has a staff strength of 22 that includes one Test Facility Manager, one Research Officer, one Quality Assurance Manager, two Application Specialists, Project Assistant, Veterinary Pathologist, Research Associate, Senior and Junior Research Fellows, Facility Supervisor and Technical Staff

Before concluding the visit, the Director pointed out the rigorous standards followed in keeping the premises scrupulously clean with the inside temperatures maintained with painstaking attention. The members also took note of the good record-keeping practice followed in CEFT.

SRU’s initiatives to foster research in the last six years have yielded results in many areas – attracting considerable research grants from funding agencies like DST, ICMR etc., noticeably increased participation of faculty in research, a steep increase in research publications in peer-reviewed national and international journals, increase in the number of candidates registering for Ph.D. and a larger number of academic joint research collaborations with national and international research institutes, universities and industries. These have played a supportive role in sensitizing students and faculty and in propagating a research culture in the campus and attracting more faculty to participate in the Young Faculty Growth and Development Towards Excellence (GATE) scheme, prompt more postgraduate students to register for the MD/MS/MDS Ph.D. program and attract more students to come forward to utilize the Chancellor’s Research Fellowship grant for undergraduate students.

In all, 150 research projects between 2008 and 2012 have been able attract grants totaling Rs. 3975.294 lakhs.

Publications, academic & research collaborations

The University subjected its research publications to rigorous scrutiny with the help of professional IT experts and external agencies. The analysis of publications and citation trend as documented in global databases such as Scopus, PubMed, Web of Science, Google Scholar and Embase showed a noticeable and steep increase from 2008 onwards. For example, the overall number of publications in indexed journals showed an increase from 211 in 2008 to 383 in 2011. Analysis of H-Index in Scopus database showed a value lingering around 14 and 17 between 1989 and 2008 with a perceptible rise to 18, 21 and 27 by 2011. Impressive supportive documents to this effect were placed before the AAA Committee.
The number of academic research collaborations SRU has established has also shown an increase and stands at 53 collaborations now. Fourteen of these are with Indian Universities while sixteen collaborations are with universities abroad. Institution-Industry collaborations number 7 and joint research collaborations with national organizations by individual departments account for the remaining sixteen.

**Faculty and student participation in research**

Increased faculty participation in research in the last 4 years has resulted in 40 major projects completed, 90 major and 115 minor projects undertaken by the faculty and 11 major projects submitted for internal funding. In all, 3059 research papers were presented in national and international conferences and 93 books authored by the faculty have been published.

Faculty participation in the funded GATE projects also showed a similar upward trend between 2008 and 2012; reaching a total of 55 projects with the grant allocated adding up to Rs. 43.32 lakhs.

The number of candidates who registered for Ph.D. program in the University also showed a similar increase. The total number of candidates who registered for Ph.D. between 2002 and 2007 was 63 whereas this showed an almost threefold rise and recorded a total of 170 candidates between 2008 and 2012.

SRU introduced the 5-year integrated MD/MS/MDS Ph.D. program in 2009 with Support from ICMR with a view to encourage research participation by clinicians. This is an unusual initiative by any health sciences university in the country and the ICMR is involved in not more than three other such programs in the country. Each year, the ICMR provides scholarships for 5 candidates; junior resident fellowship for the first three years and senior resident fellowship in the final two years. In all, 24 postgraduate students have registered for the MD/MS/MDS Ph.D. program at SRU so far.

The research centers at SRU recognized by National/International agencies include:

- WHO Collaborating Center for research & training in Occupational & Environmental Health received the continuance of award for five years from 2011.
- ICMR Center for advanced research in indoor air pollution: awarded for five years from 2010.
- Technology Business Incubator of Department of Science & Technology, Government of India awarded for five years from 2011.
- Biodosimetry Center of AERB, Government of India, for chromosomal assays in exposure to radiation renewed for three years from 2011.
• DSIR & SIRO certification by the Department of Science & Technology, Government of India renewed for three years from 2011.
• Government of Tamil Nadu approved Center for Prenatal Genetic Screening: valid from 2009-2014
• US-FDA Audited ICMR-registered Clinical Trial Unit from 2012.

Research consultancy and patents

In the 4 years from 2009 to 2012, the overall earning from a total of 31 research consultancies has been recorded as Rs. 102,882 lakhs. The Herbal and Indian Medicine Research Laboratory has in addition generated a consultancy amount of Rs. 11,63,744 /-

SRU has applied for 3 patents for its research outputs and has so far received two patents.

The AAA Committee’s visit to some other departments showed a similar dedication and commitment to research and extension activities that have attracted national and international attention. The Department of Environmental Health Engineering under the Faculty of Allied Health Sciences has taken up a variety of R&D and training activities that cover a broad spectrum of environmental health concerns. Over the years, the department has emerged as a WHO Collaborating Center for research and training in Occupational Health and is the recipient of extramural research and training grants from the WHO, National Institute of Health (NIH), World Bank, UNDP, USEPA and Central & State Ministries of India. The department has also been recognized by the International Labor Office of the United Nations, Geneva, as a collaborating center of the International Occupational Safety and Health Information Center (CIS) Network. In addition to providing training in industrial and occupational health and safety for Industrial safety officers of the Government of Tamil Nadu and officials of SEARO countries, the department is actively involved in field studies on the health effects of indoor air pollution and has pioneered along with the University of California, Berkeley, a low-cost cookstove project with a view to mitigate indoor air pollution from the use of cheap and easily available but polluting cooking fuels in rural areas.

The US Secretary of State reviewed the project during her visit to Chennai in August 2011.

“Thank you and your colleagues, for your help with our cookstoves event in Chennai” the Secretary wrote in her letter addressed to the Vice Chancellor of Sri Ramachandra University after reviewing the work spearheaded by Dr. Kalpana Balakrishnan, Head of the EHE Department. “I am deeply grateful for the progress that has been made and for the platform Sri Ramachandra University has provided to Dr. Balakrishnan…. It is my hope that
it will help build support for our cookstove initiative not only in India, but around the world.”

On the academic and administrative side, recent efforts of SRU include well-defined policies to promote research in the form of regulations, selection for Ph.D. through national level entrance, meeting the research methodology training needs of undergraduate & postgraduate research scholars and faculty and disseminating quality parameters in research. The Chancellor’s Summer Research Fellowships is an important initiative to encourage undergraduate students to carry out independent research investigations and publish and present their findings in reputed journals and national conferences.

The University realizes that healthcare research requires training in ethical conduct and publication with quality indicators (anti-plagiarism) and rigorous testing using standardized statistical tools. These are provided by the University through 5 committees including the recently constituted Publicity Oversight Committee that scrutinizes and advises on the conduct of research along ICMR guidelines and provides certification through the unique CITI-India online program developed in collaboration with the University of Miami, USA.

Among the many practices the University has introduced in the post-accreditation period, the following may be considered as ‘best practices.’

- University Research Fellowships, called Chancellor Research Fellowships to full-time Ph.D. scholars based on merit.
- Establishment of university-level ‘Centers of Excellence in Research’ on focused areas.
- Strategies for enhancement of quality of publications through ‘Publication Oversight Committee,’ anti-plagiarism software for all manuscripts and hosting of all Ph.D. degree-awarded theses on the Shodhganga e-repository of INFLIBNET.
- Best research publication awards for researchers who publish papers in highest impact factor journals.
- Provision of the services of IPR-Cell with an IPR consultant to encourage faculty to file patents.
- Periodic analysis of research publications and awarding certificates of merit.
- University-level consultancy rules as approved by the statutory bodies of the university providing the consultant a share of financial benefits from the money earned as per the formula outlined in the rules.
To use profit accrued out of consultancy to enhance department-level infrastructure and other academic needs. User-friendly norms and agreement procedures to bring about industry-academia interactions in teaching, training and collaborative R&D research.

**Extension activities**

Sri Ramachandra University has developed its extension activities with a view to reach out and promote healthy practices and provide healthcare services among the marginalized and rural populations. The activities are designed not only to fulfill the institution’s social responsibility, but also to open up opportunities for field experience in healthcare practice and sensitize students and trainees on social and health problems prevailing at the community level.

The Dean of Medical College who coordinates many of the extension activities like organizing health camps and supervising student training in Primary and Rural Health Centers in coordination with the Principal of the College of Nursing, the Dean of the Dental College and the department of Community Medicine leads the efforts in planning and implementing the schedule for deploying faculty, staff and students for visits to the sites of extension activities and the procedures adopted for documentation of the services rendered and teaching-learning accomplished.

The areas of extension activities are distributed widely in different parts of Chennai and the neighboring districts. The most important among these are the **Primary Health Centers** at Nemam, Mugalivakkam and Nanganallur and the recently started **Rural Health Center** at Vayalanallur. Regular schedules for rotation and training are prepared for undergraduate and postgraduate students of the Medical, Nursing and Dental colleges in these centers. Nursing students in addition, visit nearby villages in Soornacherry, Anai kattucherry, Nootchimedu and Kuthambakkam and faculty and students of Dental College visit Poombarai village in Kodaikanal district on a regular basis.

Faculty, staff and students participate regularly on **‘Varumun Kappom Thittam’ a Government of Tamil Nadu initiative** stressing on preventive strategies in health maintenance.

Faculty and trainees of the department of Environmental Health Engineering are involved in monitoring environmental and occupational health determinants in Municipal Administration and Water Supply departments, PHCs under Chennai Corporation, family Court (High Court Chennai) etc. Optometry students are rotated through Sankara Nethralaya and the Elite School of Optometry. Faculty, staff and students of the
department of Speech, Language and Hearing Sciences have prepared regular schedules to visit villages in Thiruvannamalai and provide rehabilitation services for children with speech disorders due to cleft lip/plate. The SLHS team works in close coordination with village health workers.

The departments of Biomedical Sciences, Human Genetics and Environmental Health Engineering carry out studies on the genetic effects of environmental pollutants. Such efforts have increased the recognition of SRU as a Tamil Nadu Government-recognized center for diagnosis of emerging diseases like Chikungunya, Dengue, SARS etc.

The department of Human Genetics has facilities accredited by Atomic Energy Review Board (AERB) to carry out biodosimetry assessments of chromosomal anomalies from radiation exposure.

SRU has developed robust mechanisms and has identified appropriate teams to plan and organize several health awareness camps on a year-round basis. The Dean of Medical College plays an active role in leading and coordinating these efforts. On an average, the institution organizes 6 to 8 major health camps in different districts of Tamil Nadu and the neighboring states. In addition, a large number of camps and school health programs are organized by individual colleges and departments and blood donation camps by the students in collaboration with the Blood Bank.

The university-organized health awareness camps are usually run for two days and attract from 1000 to 3000 or even more residents from the nearby areas. The Dean of the Medical College took pains to elaborate on the enormous team efforts required to develop these as ‘mega events.’ These mega camps are usually conducted in spacious locations like school buildings or large marriage halls in which prominent public figures and representatives of village bodies like the Panchayat participate. The Institution mobilizes the required resources and personnel well in advance and the camp premises are converted into a formidable ‘healthcare fortress’ in a short time; with specific areas allocated for registration, for screening, clinical examination and counseling of participants as well as for installation of support services like pharmacy, ultrasound scan, ECG, mini lab and even x-ray examination and mobile dental care facilities. The Dean stressed how the leadership of the institution insists on care of the highest quality with emphasis on the participants’ safety, privacy and confidentiality even in such remote locations.

The Vice Chancellor’s report presented during SRU’s convocation in the month of March each year includes a description of all the outreach activities. The report in March 2012 for example includes a list of the large number of health camps in addition to the mega
events mentioned earlier. These include more than 20,000 people screened for visual defects and refractory errors in camps conducted in 2011 by the Ophthalmology department in different locations in Tamil Nadu, 6 blood donation camps by the department of Transfusion Medicine, 90 camps organized by the Faculty of Dental Sciences, several camps and community services by the Faculty of Physiotherapy, school health visits by the department of Pediatrics and so on.

One of the notable events was the **100 corrective operations** performed in children with congenital cleft deformities by the visiting team of Plastic surgeons from SRU in November 2011 in a **surgical camp in Pillong Hospital, Yangong, Myanmar**. The SRU departments of Plastic Surgery, Orthodontia and Speech, Language and Hearing Sciences have caught the attention of the country and the world by their intense commitment to comprehensive rehabilitation of thousands of children with cleft deformities by a combination of corrective operations, orthodontic correction of dental anomalies and malocclusion and long-drawn-out therapy sessions to overcome speech impairments. The SRU team in these is assisted by the international NGOs SmileTrain and Transforming Faces Worldwide (TFW). The departments maintain documents pertaining to these activities with scrupulous attention.

The other extension activities include:

- Contribution to **National Rural Health Mission** by providing preventive and curative healthcare through PHCs by adopting them and through collaboration with community-based NGOs.
- Participation in the **Government of Tamil Nadu sponsored Health Insurance Scheme** to provide tertiary care services including hi-tech, expensive operations for Below Poverty Line (BPL) population.
- Providing health-related extension services through Information Communication Technology-linked **Telemedicine** services to institutions in different parts of India and to 65 countries in Africa through the **PAN-African e-network scheme** of the Government of India.

Another notable event was ‘**CEMEx 2011 – Chennai Emergency Management Exercise with focus on humanitarian and medical response**’ a disaster management drill that the University took an active part in organizing in collaboration with the UN Disaster Management Team, National Disaster Management Authority, Government of India and the Government of Tamil Nadu from 4th to 8th August.2011. SRU hosted the 5-day academic program in which about 900 personnel drawn from different areas like doctors, nurses, paramedics, police & fire service personnel, NGOs and school teachers were trained by a team of UN experts on disaster management in the
campus. This was followed by a simulated disaster scenario and rescue drill in the center of Chennai city in which SRU Emergency Department received more than 70 casualties from the simulated disaster scene.

**Telemedicine services**

The Committee members visited the well-equipped Telemedicine Center located in the 8th floor of the Medical Center. The technical staff there explained the complex web of IT equipment and the daily work schedule keeping up with the time zone differences between India, the African countries, United States etc. In all, between 2009 and 2011, the Telemedicine center has facilitated 1593 tele-consultations with different hospitals and health centers in India especially in the North Eastern region and 37 such consultations with different African states. The figures for Continuing Medical Education programs are 262 within India and 165 with African states. Assistance from the Telemedicine Society of India and satellite connectivity provided by ISRO enable these activities.

The members were also introduced to the Mobile Telemedicine van used to support health-screening for 9135 people covering 502 villages. In all, 256 health camps have been organized in which the mobile Telemedicine van had covered a distance of 16,561 kilometers.

**Vidya Sudha: Early intervention center for children with special needs**

Vidya Sudha, the early intervention center for children with special needs located in the campus is another impressive facility and has been functioning since 2004. The school currently provides special education, physiotherapy, occupational therapy and counseling sessions for 85 children registered with it. The children spend 6 to 7 hours every day in the center and are accompanied by their mothers most of the time. Vidya Sudha is headed by a specially trained and experienced child educator. She is assisted by a team that includes three Montessori-trained teachers and two occupational therapists. SRU takes full advantage of the services provided by specialists like Pediatricians, ENT surgeons, Ophthalmologists, Orthopedic surgeons, Speech therapists, clinical psychologists and physiotherapists available in the campus. Vidya Sudha is an early intervention holistic program where the team of experts with diverse backgrounds and specialties come together to cater to the overall development of the child with special needs. “Our aim is to help as many children as possible to join the main stream of education by early intervention” explained Vidya Sudha’s head.
Collaborations

Of the 37 MoUs Sri Ramachandra University has entered into with different institutions, 16 are with institutions abroad and 14 with Indian Universities. The remaining 7 have been signed with Industries. Clinical trial consultancies such as for establishing new clinical trial standards in evaluating Siddha formulations constitute an important component of collaborations with industries.

Among Collaborations with Institutions and Universities abroad include: Alliance with Harvard Medical International (1997 to 2010) and MoUs with University of Wisconsin OSHKOSH, Wayne State University, Detroit, USA, Queen Margret University College, Edinburgh, University of Washington, Kyushu Dental College, Japan, University of Cape Town, South Africa, University of Miami, USA, Staffordshire University and Sheffield Hallam University, UK and the National University of Taiwan.

Academic Collaborations with national centers and Universities include: Central Leather Research Institute, Chennai, International Center for Genetic Engineering & Biotechnology (ICGEB) Delhi, IGCAR, Kalpakkam, National Environmental Engineering Research Institute (NEERI) Nagpur, National Institute of Epidemiology (ICMR) Chennai, National Center for Biological Sciences (NCBS), Bangalore, Anna University, Chennai, IIT Madras, Vellore Institute of Technology, Vellore, National Institute of Siddha, Chennai, Jamia Hamdard University, New Delhi, Indian Institute of Integrative Medicine (IIIM) New Delhi, SSN Engineering College, Chennai and Satyabama University, Chennai.

Some of the faculties and departments have also developed collaborative arrangements for education and research. Examples include the agreement the Faculty of Physiotherapy has developed with the Institute of Therapeutic Sciences, Michigan, USA, the arrangement of the Faculty of Management with National Entrepreneurship Network (NEN) and the Madras Management Association, the MoUs of Speech, Language and Hearing Sciences department with The SmileTrain, USA and TFW, Canada and the collaborative arrangements the department of Environmental Health Engineering with International universities like the Universities of California, Berkeley, Utah State University and the University of Montreal, Canada and with several national agencies and industries.

SRU subscribes for National Knowledge Network (NKN) connectivity and participates in the INFLIBNET-sponsored ‘Shodhganga project.’ The institution believes this helps in fostering initiation of various research collaborations.
Teacher quality; awards and recognitions

The IQAC coordinator described the teacher quality and the high recognitions and accolades the faculty have earned at national and international echelons. The list of the esteemed recognitions include Padma Shri Award (2), Hari Om Ashram Award (1), Dr. B.C. Roy National Award in Medicine (4), Honorary Doctorates (3), Honorary Fellowships of the Royal Colleges of Physicians of Glasgow (2) Honorary Fellow qua Surgeon of the Royal College of Physicians & Surgeons of Glasgow (1) Florence Nightingale Award, other National Awards (47), other international Awards (22), Regional & State level Awards (24), Boycast Awards (4), Fulbright award (1)

Instructional sessions conducted by the large number of eminent professionals appointed as Emeritus Professors, Professors of Eminence, Visiting and Adjunct Professors, the coordinator said, not only complement the vibrancy of the learning environment but also foster creativity and intellectual drive among faculty and students.

Observations:

- Sri Ramachandra University has mobilized vast amounts of resources in the last five years to strengthen research initiatives among students and staff.
- This initiative has yielded results in the form of the large number of funded research projects completed and ongoing. Together these have attracted substantial amounts of funds by national agencies like DST, ICMR, DRDO etc.
- Some of the research projects like the massive epidemiological study (PURSE-HIS study) and the research on the health effects of indoor air pollution have attracted global attention. Others like the studies on the chromosomal effects of radiation have attracted national attention.
- The University has been able to attract considerably more number of students and faculty to its Ph.D. programs and research projects. The GATE Project of research grants for faculty and the Chancellor’s Summer Research Fellowship to encourage undergraduate students are new initiative in this direction.
- The number of research papers and publications in high impact journals has shown a steep increase.
- SRU has subjected its research publications to critical scrutiny and objective analysis with the help of IT experts and an external agency.
- The institution has secured DSIR & SIRO certification by the Department of Science & Technology, Government of India and its renewal for three years from 2011.
- Community-based services and extension activities have shown perceptible increase.
Inclusion of the University in the Pan-African Telemedicine Network has accelerated and strengthened the reach and efficacy of the Telemedicine Unit in the campus.

Earnings from research consultancy, collaborations and extension activities show an upward trend.
Criterion IV: Infrastructure & Learning Resources

Ever since it started as Sri Ramachandra Medical College and Research Institute in 1985 and along the way to being conferred the status of a Deemed to be university in 1994, SRU has added several structures and facilities in the campus to facilitate its educational, healthcare and research programs. Requirements mandated by apex bodies, feedback from stakeholders and recommendations from administrative bodies like the Board of Management, Academic Council and Boards of Studies prompted the institution to add many more innovative features resulting in the impressive constellation of infrastructure that house an equally rich collection of learning resources today. The AAA Committee visit included a survey of these.

Faculty of Medicine:

Sri Ramachandra Medical College, Medical Center and Sri Ramachandra Hospital
The college houses facilities for undergraduate (MBBS) teaching that include lecture halls, seminar halls, dissection hall, Forensic Medicine lab and autopsy room, laboratories, demonstration rooms, museums, faculty offices and the Active Learning Center with Internet facility. The offices of the academic and administrative officers of the university, and the Controller of Examinations’ office are also located in this complex. The Medical college building is connected to the Medical Center by a corridor that allows easy movement of faculty, students, clinical staff and technicians between the College and the Medical Center.

The Medical College complex recently underwent a massive expansion and restructuring to accommodate the teaching requirements of the increased number of MBBS students from 150 to 250 from the year 2011 as per the directives of the Medical Council of India. This included addition of a fourth floor to the building and construction of 4 large lecture halls that can accommodate 300 students, one large, gallery type of lecture hall with 650 seating capacity, increased laboratory space and significant addition to audiovisual facilities.

The Medical Center houses the Casualty and Emergency services, specialty outpatient clinics and 750 bedded inpatient facilities. The Central Clinical Laboratory, Blood Bank, Central Sterilization & Supply Department (CSSD), the Electronic Medical Records room, and the department of Radiology and Imaging Sciences are located here. High-end investigational and interventional facilities like the cardiac and neuro-cath labs, radioisotope facilities, Intensive Care rooms (Cardiac, Neuro, Neonatal and
Multispecialty ICU with a total of 152 beds) and the Telemedicine Center are sited here. The new facilities added in the last five years include the Gamma camera, Center for Healthcare Quality & Patient Safety, office of the International Patients Center and the Pan-African Telemedicine facilities. Of the 37 operation theaters, 19 are situated in the Medical center. Complex operative procedures like open-heart surgeries, neurosurgical, microsurgical and endoscopic procedures, Arthroscopy and Joint Replacement and transplant surgery are carried out here.

The Medical center recently added the services of ‘Chitti’ the robot (TeleDroid 2 AMR incorporating 4th generation iPad) to assist in the management of critically ill patients in the Neurosurgery ICU. “We are in the process of programming the robot to approach any patient in the Neuro ICU and report back to the consultant on the patient’s condition on command from a distance” said the Head of Neurosurgery. The consultant can command the robot even from long distances and get moment to moment feedback about any patient without the need to be in the hospital premises or ring up the ICU doctor or nurse.

Academic teaching programs involving clinical specialties and higher specialties like Cardiology, Cardiothoracic Surgery, Neurology, Neurosurgery, Urology, Medical and Surgical Gastroenterology and Plastic Surgery are conducted in the Medical Center. The sustained efforts at maintaining high standards of quality in patient care and the efforts to develop and adhere to stringent quality indicators in patient care and safety has resulted in the Medical Center being accredited and re-accredited by the Joint Commission International and receiving accreditation by NABH. The Medical Center also received an award for patient safety in the International Congress on Patient Safety – Best Practices for Asia in April 2011.

Sri Ramachandra Hospital was constructed in the campus and was commissioned in 1995 with 500 beds to provide high quality medical care free of charge. The institution does not probe into income details of patients and provides service for anyone who opts for treatment in Sri Ramachandra Hospital. The notable feature is that the same consultants, specialists, nurses and house staff share the responsibility of patient care here as in the Medical Center. In addition to free stay, consultations, investigations, medicines and surgical treatments, patients receive free food three times a day. The University has allocated separate budget to meet the requirements of the hospital without affecting quality of care or patient safety.

SRU has recently expanded the facilities and services at Sri Ramachandra Hospital to a higher level. Although this was necessitated by the need to accommodate clinical teaching needs for the increased intake of MBBS students from 150 to 250 from 2011
onwards, the commitment and fervor with which the management has taken up the mammoth scaling-up process clearly shows how it has surpassed the dictates of mere necessity by several folds.

The 5-floor hospital building has a built-up area of 5 lakhs sq. feet and includes an out-patient block and a 1275-bedded in-patient block with a 54-bed ICU facility. All broad and specialty departments of the hospital including clinical nutrition and physiotherapy work from 8 AM to 4 PM on all days and attract around 4000 patients per day for out-patient consultations. The out-patient department runs special clinics like diabetology, hypertension, back ache clinic etc. The average daily admissions number 120 to 150 patients a day. Support services include radiology and imaging services with facilities for X-rays, Ultrasound and Doppler scans, CT and MRI studies, clinical laboratory, CSSD, central kitchen and laundry services and effective systems for biomedical waste management. These are covered by preventive maintenance measures. On an average, the hospital performs more than 350 X-rays, 130 ultrasound scans, 50 CT and 24 MRI scans each day.

One of the notable features of Sri Ramachandra Hospital is the **12 modern modular operation theaters** equipped with state-of-the-art facilities in addition to the two theaters attached to the Ophthalmology out-patient department. On an average more than 50 major operations and 30 minor operations are performed each day.

The strength of Nursing staff has been increased from 700 to 1100.

The Hospital expansion project has been carried out with the specific purpose of allowing free access to clinical learning of undergraduate and postgraduate students of the Faculty of Medicine and other allied disciplines. This is facilitated by the large number of out-patients and in-patients. The clinical skills labs and simulation centers are located in the out-patient block as also the purpose-built facility for the activities of the Education Units.

Sri Ramachandra Hospital recently received the **award for best performance** (in Kancheepuram and Thiruvallur districts) for supporting the Tamil Nadu Government’s State Insurance Scheme to provide specialized surgical treatment for people in the Below Poverty Level.

The future plans for the Hospital include establishment of a cath lab, transplant and oncology services, operation theaters for daycare surgery (facilities available currently in the Medical Center) and extending these services for patients screened at SRU’s Rural Health Center at Vayalanallur. The Hospital Director mentioned about the intention to establish standard operative procedures and quality indicators to ensure
care quality and patient safety successfully practiced in the Medical Center. These will be implemented when the construction work is completed. Sri Ramachandra Hospital will then apply for NABH accreditation.

In answer to the Committee members’ question how such a massive expansion project could be completed in record time, the General Manager (Infrastructure and Maintenance) replied that it is the dedication of the team under the Chancellor committed to fulfill the Founder Chancellor’s vision.

It was not difficult to see how the GM Infrastructure was echoing the sentiment prevailing in the campus.

**Observations:**

- Sri Ramachandra Medical College & Research Institute, being the flagship institute of SRU, has played its leadership role effectively. The College celebrated its Silver Jubilee in 2010 with a series of academic, research and cultural activities extending over a period of one year. The occasion was used by the University not only to conduct a realistic self appraisal and SWOT analysis of its past performance but also as a springboard to launch its strategic initiatives and future plans in a Vision 2025 document.
- SRMC & RI’s contributions to the University’s efforts in promoting biomedical research and increasing its research publications in high impact-factor journals is admirable.
- The Medical Education Unit has launched several innovative programs including curricular innovation for the MBBS course and has spearheaded efforts by other faculties in the University to introduce best practices in teaching, learning and assessment methods.
- The huge amount of work on the expansion of infrastructure and facilities to accommodate the increased student intake for undergraduate and postgraduate programs in the Medical College is praiseworthy and is likely to have far-reaching effects in strengthening SRU’s role as a pioneer institution in the fields of healthcare, education and research.
- SRMC & RI with its teaching hospitals and community health centers has been able to act as the linchpin in interdisciplinary learning and research.
Faculty of Dental Sciences:
Sri Ramachandra Dental College & Hospital

The nine departments of the Dental College function in a purpose-built facility occupying an area of nearly 21,000 sq, meters accommodated in four floors. The Faculty of Dental Sciences offers both undergraduate and postgraduate programs. One hundred students are admitted each year for the BDS program and between 4 and 6 students admitted for each of the 8 postgraduate (MDS) courses as per the guidelines of the Dental Council of India. The college is equipped with 331 dental chairs which are high-ended, fully loaded/equipped and ergonomically designed. The Dental College has five well-designed and spacious lecture halls and five pre-clinical and five clinical laboratories.

Both undergraduate and postgraduate students are taken through an orientation program at the start of the course. The students’ parents are also invited to participate in the introductory session of the program. In addition to providing snapshot views of the workings of the University and the campus facilities, the orientation program aims at introducing the students to the goals and objectives of the courses, methods of formative and summative assessments, project-based learning and dissertation, practical and chair-side learning, rules and regulations governing the campus and hostel life including the UGC and DCI guidelines against ragging and information on mentoring process, opportunities for interdisciplinary learning, research, the Chancellor’s Summer Research fellowship for the undergraduates etc. They are also introduced to the University publications like the Student Manual, and PG logbook. The students and their parents are escorted on a tour of the College and the SRU campus and provided with opportunities to interact with the heads of departments and faculty.

The College has seen a significant increase in the faculty strength between 2008 and 2012. While 67 faculty members were recruited against the sanctioned strength of 73 in 2008, the figure for faculty recruitment in 2012 was 81 against the sanctioned strength of 74. There has also been a noticeable upgrading in the quality of teachers during this period. Whereas faculty with Ph.D. qualification, those who had registered for Ph.D. and those who were guiding Ph.D. candidates were 1, 4 and 2 respectively in 2008, the figures have increased to 3, 8 and 6 respectively in 2012. The other improvement from a quality point of view is that while only 8 of the 67 faculty members received the benefit of Faculty Development Programs in 2008, all faculty members have completed training in FDP in 2012. This makes Sri Ramachandra
Dental College the only such institution in the country where 100% of faculty have been benefited by formal training in educational workshops on Dental Education Technology. In addition, all faculty have also received training in Basic Life Support (BLS).

One of the main factors that made the rapid progress in teacher quality possible was the establishment of the **Dental Education Unit** in 2010. It was possible for the Faculty of Dental Sciences to add to its list of best practices many of the creative ideas introduced by the Medical Education Unit of SRU, recognized as a Regional Center for Medical Education Technology by the Medical Council of India.

The Dental Education Unit has enhanced and enriched the BDS curriculum by introducing project-based learning and pilot modules for integrated learning in specific areas like cleft lip & palate and dental caries. Programs and training sessions have also been introduced to help career advancement for undergraduates and interns. Another new feature was the introduction of quality assurance audit for evaluation of teaching sessions. As in the case of the Sri Ramachandra Medical College, a **longitudinal mentoring** process has been introduced and faculty have been sensitized to recognize slow and advanced learners at an early stage and introduce supportive and handholding measures or accelerated learning strategies as the case may be. Learning problems are placed before the **Students Academic Performance Improvement Committee (SAPIC)** and appropriate plans chalked out.

There has been a perceptible increase in participation in research by students and faculty in the last 5 years. The number of funded faculty research projects has risen to 31 and research grants received total Rs. 1,92,74,800/- Similarly, the number of undergraduate students who have opted to avail the Chancellor’s Summer Research Fellowships has doubled from five in 2010 to ten in 2011.

The number of research **publications** and paper presentations has also shown a commendable jump. Up till 2008, the publications totaled 23; whereas between 2008 and 2012, there were 218 publications; 145 in indexed and 73 in non-indexed journals. Of the 460 papers presented, 385 were presented in national and 75 in international conferences.

The Dental College has recently signed **MoUs** with the University of Hong Kong and with Kuyushu University in Japan for academic and research collaborations. At the national level, the University’s telemedicine link has been utilized for interactive sessions and tele-dentistry programs with the Amrita School of Dentistry, Cochin and AIIMS, New Delhi and for participation in Euro Perio conferences. Annual Rapid
Revision programs introduced for the postgraduate students by the departments of Oral Surgery, Endodontics, Periodontics and Prosthodontics are rapidly gaining popularity and the College plans to extend these to the other departments as well.

The feedback mechanism on the quality and efficacy of the curriculum has been strengthened by the introduction of an open system for multilevel feedback from all stakeholders. This allows the College to work out the ‘Student Satisfaction Index.’ The Dean’s presentation stressed on new initiatives based on these measures that include introduction of viva sessions during case allotment, viva after completion of each posting, arrangements to provide translators on request and conducting denture camps.

The Dental College uses the mobile dental van extensively for extension activities. The other important outreach activity is participation in Orthodontic services for the SmileTrain program and in screening children in Vidya Sudha. The Dean’s presentation highlighted the several modifications in infrastructure and facilities in the last five years. These included museums for project-based learning, specialty clinics for various needs and the increased use of the mobile dental clinic/van. Another notable feature was the release of text books authored by 2nd year BDS students on Conservative Dentistry; one on dental materials and the other one titled ‘Questions & Answers on Dental Materials.’

Observation:

- There has been an increase in the faculty strength compared to the period before 2008.
- The quality of teaching activities, patient care, research and extension documented by the Faculty of Dental Sciences shows noticeable gains in the last five years.
- With the establishment of the Dental Education Unit in 2010 and the several Faculty Development Programs that followed, the Dental College has achieved training of all its faculty in dental education technology. All the faculty have also received BLS training.
- The Dental Education Unit has been able to bring curricular innovations and enrich the BDS curriculum by introducing project-based learning and pilot modules for integrated learning in specific areas.
- The longitudinal mentoring process recently introduced provides opportunities for recognition of slow and advanced learners at an early stage and introduce supportive and handholding measures or accelerated learning strategies as the case may be.
The Students Academic Performance Improvement Committee (SAPIC) reviews learning problems and develops remedial plans.

- The number of faculty with Ph.D. qualification, those who have registered for Ph.D. and those who are guiding Ph.D. candidates has increased between 2008 and 2012.
- The number of research publications and papers presented shows an increase in the last five years.
- The Faculty of Dental Sciences has laid greater stress on interdisciplinary learning, inter-departmental and inter-institutional collaborations.
- The teachers and students of the Dental Faculty have increasingly taken up the opportunities provided by telemedicine, tele-dentistry and community-oriented services.

Faculty of Nursing

The faculty was established in December 1993 and the first batch of 100 students for B Sc Nursing were admitted in December 1994. The vision of the College of Nursing is to propagate socially meaningful healthcare, nursing education and research with adherence to moral, legal & ethical values.

The Goals of the Faculty of Nursing are defined as:

- Build all round development of nursing students by providing balance between curricular, co-curricular & extra-curricular activities
- Organize, sequence and integrate teaching-learning activities to involve explicit and implicit curriculum
- Focus on attitude building and personality development of nursing students for provision of quality patient care
- Prepare nursing students to combat the challenges of the profession and meet the demands of the society
- Develop leadership skills and group dynamics to promote collaborative holistic patient care.

The College currently admits 160 students in all; 100 students for the 4-year B.Sc Nursing (Basic) course that includes 6 months of internship, 30 students for the two-year Post-basic B.Sc course that was introduced in 2002 and 30 students for M.Sc Nursing started in 1999. All these courses are conducted as per the guidelines of the Indian Nursing Council. Three add-on Certificate Courses of 6-months duration were introduced subsequently: Cardiovascular and Thoracic Nursing, Critical Care Nursing and Neonatal Nursing.

The College of Nursing occupies an area of 4565.96 sq. mts of built-in space and functions under five departments and five functional Units. The five departments are: Medical
Surgical Nursing, Pediatric Nursing, Obstetric & Gynecology Nursing, Community Health Nursing and Psychiatry Nursing. The five units include Nursing Foundation, Nursing Education, Nursing Administration, Nursing Research and Continuing Nursing Education.

The Faculty of Nursing has, in the past 20 years, modified its instructional and assessment methods in several ways. The current teaching learning methods include, in addition to didactics, interactive sessions and demonstrations. The learning experience is widened and strengthened by field visits, seminars, debates, workshops, project work, process recording, clinical case presentations, clinical conferences and journal clubs. In all this, the College emphasizes self-learning efforts and stresses on the importance of life-long learning for the professional. Participation in learning using facilities like multimedia, teleconference, CNE programs, Computer-assisted learning, simulators in skills labs and other electronic resources have been increasingly emphasized recently. Taking the cue from the Faculty of Medicine, Rapid Review programs have been introduced to bolster the students’ confidence in the knowledge domain. Learning opportunities are also provided by the several quiz programs and Guest lectures the College organizes frequently.

The Faculty of Nursing has 449 students currently in its rolls and has a teacher strength of 52. Seven of these have acquired Ph.D. qualification in Nursing and 32 possess M.Sc. Nursing degrees. The faculty : student ratio is 1 : 11.6. The College has introduced several faculty development programs to hone their skills and interest in academics, pedagogy and research. These include attending conferences, CNE programs, seminars, guest lectures, journal clubs, workshops, faculty exchange programs with the University of Wisconsin (Oshkosh) School of Nursing, and focussed training in IT skills that the University arranged in 2010.

The last five years has seen many members in the Faculty of Nursing taking up research projects. Out of the 28 projects taken up for Ph.D. work, 7 have been completed and 21 are ongoing. Five faculty members have availed the funded GATE projects. The other notable development is that three students of B. Sc nursing have taken up research projects under the Chancellor’s Summer Research Fellowship Grant of Rs. 10,000/- each.

Between 2008 and 2013, the faculty has organized 6 international nursing conferences in collaboration with the University of Wisconsin (Oshkosh) School of Nursing. The conference is held each year within the first 10 days in the month of January and has attracted 240 to 400 delegates including 22 to 47 delegates from abroad. The other significant academic events are the CNE programs. Each department is required to organize at least one CNE program each year.

The Faculty organized 25 guest lectures in the last five years. These included 9 guest speakers from the state of Tamil Nadu and 16 international speakers – 10 from the
University of Wisconsin, Oshkosh, 4 from the University of Washington, Seattle and 2 from the University of Memphis, USA.

There has been a marked increase in the number of papers published by the Faculty of Nursing in the last 5 years. While the total number of papers published between 2002 and 2007 was 11, there were 175 publications between 2008 and 2012. 67 of these were published in national journals and 108 in Sri Ramachandra Nursing Journal. The latter is a biannual publication, started in 2009 and attracts a large number of articles and clinical reports from the faculty and students. A similar increase was also recorded in the number of papers presented in national and international conferences. There were a total of 92 papers presented between 2002 and 2008 whereas the number recorded for the period 2008-2012 was 257. In 2012, the award for the best paper presented in the Tamil Nadu TNAI conference was won by a faculty of SRU College of Nursing. The College published two instructional manuals in the same period with titles: *Overview of nursing research including biostatistics* and *Handbook on Rehabilitation Nursing*.

In addition to the life agreements between SRU and the nursing Faculties of Queen Margaret University, Edinburgh and Wayne State University, Detroit, USA, ongoing MoUs with Washington University (Seattle, Washington) and Northumbria University, Newcastle, UK, were renewed in 2012 and the MoU with the University of Wisconsin School of Nursing in 2013. These collaborations facilitate a variety of academic activities that include research guidance and collaborations, sharing of learning aids and resources, annual visits of nursing students from USA to Sri Ramachandra University and faculty exchange programs. 114 nursing students from the University of Wisconsin (Oshkosh) School of Nursing visited Sri Ramachandra University between 2008 & 2012 and observed community nursing practices in our Primary Health Centers. Seven nursing faculty members from SRU have visited the University of Wisconsin so far.

Three add-on Diploma courses are conducted: 1-year Diploma in Cardiovascular and Thoracic Nursing, Diploma in Critical Care Nursing and Diploma in Neonatal Nursing.

The faculty in the College of Nursing have won several awards in the last 5 years. These include the National Nightingale Award, Nightingale Award of the University of Wisconsin, Dedicated Service Award and Lifetime Achievement Award.

With 806 members, the registered Alumni Association of the College of Nursing which was inaugurated in 2002 continues its keen interest in the activities of the College and the University. *Sri Sangamam*, the alumni Newsletter which was started in 2008 continues to attract the attention of the faculty, other professionals and students.
The future vision of the Faculty of Nursing includes: Active participation in learning and community services in the SRU Rural Health Center, Starting post-basic Diploma programs, registering Sri Ramachandra Nursing Journal as an Indexed Journal, Improving publications in other indexed journals, initiating collaborative funded research projects and re-activating the faculty exchange program.

Observations:

- Vibrancy and innovation stand out as the hallmarks of the Faculty of Nursing. The impressive number of teachers with Ph.D. qualifications and many others registered for the Ph.D. program adds to the academic vigor and richness.
- Just as alliance with Harvard Medical International in the case of Sri Ramachandra Medical College & Research Institute has strengthened its educational, healthcare and research programs, the sustained collaborations the Faculty of Nursing has developed with Nursing Schools and universities in UK and USA have projected it amongst the foremost nursing institutions in the country in terms of innovative academic programs, community-oriented nursing care and research initiatives.
- The unique initiative of starting publication of the Sri Ramachandra Nursing Journal has heightened awareness and inclination for research, publication and academic advancement among students and the faculty.
- Constant and committed participation in the activities of Sri Ramachandra Medical Center known for its high standards of healthcare and patient safety and opportunities to work with visiting students and faculty from overseas centers have enabled the Faculty of Nursing to establish a vigorous platform for academic excellence and interdisciplinary learning as expressed in its vision statement.

Faculty of Pharmacy

The College of Pharmacy started functioning in 1993 as part of Sri Ramachandra Medical College & Research Institute affiliated to Tamil Nadu Dr. M.G.R Medical University. The Faculty evolved as a constituent unit of Sri Ramachandra University after it was declared a Deemed to be University in September 1994. The college is located in a building complex occupying a built-in space of 4706.56 sq mts in the campus.

The College of Pharmacy offers undergraduate and postgraduate programs. The B.Pharm program was started in 1993 with an annual intake of 60 students. In 2003, the first postgraduate course, M.Pharm (Pharmacy Practice) was introduced with an annual admission of 10 students. This was followed by M.Pharm courses in
Pharmaceutics, Quality Assurance and Pharmacognosy in 2005 with an annual intake of 10 students each.

In 2012 two more M.Pharm courses were added; Pharmaceutical Analysis and Pharmacology, each with 18 students per year. The other innovative postgraduate program is the Pharm D and Pharm D (Post Baccalaureate) programs introduced in 2008. The college admits 30 students each year for the Pharm D and 10 students for the Pharm D (PB) courses. SRU has created opportunities for its faculty and alumni to pursue doctoral research (Ph.D.) in the campus from 1995.

The B.Pharm course is recognized by the Pharmacy Council of India (PCI) and the All India Council for Technical Education (A.I.C.T.E) New Delhi. The M.Pharm course is recognized by A.I.C.T.E and the Pharm D and Pharm D (PB) courses by PCI, New Delhi. The College of Pharmacy has been re-accredited for B.Pharm by the National Board of Accreditation (NBA), New Delhi for a period of 3 years (2011-2014).

The Faculty of Pharmacy has a total of 5 departments: Pharmaceutics, Pharmaceutical Chemistry, Pharmacognosy, Pharmacology and Pharmacy Practice. Each department has laid out its specific goals and objectives and has defined its thrust areas for education & research.

The teaching requirements are handled by 40 teachers with qualifications and experience in keeping with the norms laid down by A.I.C.T.E and the Pharmacy Council of India. There are 8 Professors, 10 Assistant Professors and 21 Lecturers in addition to one visiting faculty. Teacher : Student ratio is 1:10 in the case of undergraduates and 1:3 in the case of postgraduates.

The B.Pharm course with 37 subjects is run as a semester-based program (8 semesters) and as a credit-based system carrying a total of 192 credits. The College of Pharmacy has introduced two bridge courses – remedial mathematics and remedial biology and a language skill course. The B.Pharm curriculum includes in addition three training programs; in Hospital Pharmacy (30 hrs), Industrial Pharmacy (120 hrs) and Clinical Pharmacy ward rounds (80 hrs). The final year project work is carried out by small groups of not more than 5 students and involves relevant topics selected by them under the guidance of a faculty member. It is expected that the recently introduced longitudinal mentorship program will be more effective in supporting the students in their curricular, co-curricular and personal counseling needs. B.Pharmacy students have also welcomed the GPAT training sessions introduced in their final year.
The Pharmacy Education Unit and Entrepreneurship Development Cell were two novel additions in the last 5 years. The Pharmacy Education Unit is involved in Curricular affairs in addition to planning and implementing innovative teaching learning methods and faculty development programs. The college cites the introduction of value-added certificate courses in clinical research and drug regulatory affairs as examples.

The curriculum for the postgraduate course (M.Pharm) is also a credit-based semester system of 4 semesters, with 10 subjects and carrying a total of 96 credits. The student in addition, is also required to submit a dissertation work.

The Pharm D and Pharm D (PB) programs are not semester-based. The course duration for Pharm D is 6 years while that for Pharm D (PB) is 3 years. Bridge courses in remedial mathematics and remedial biology form part of the Pharm D curriculum also. The other highlights of Pharm D and Pharm D (PB) courses include ward rounds, case discussions, hospital pharmacy postings, patient counseling sessions, project work, clerkship and residency program. The students are also required to participate in drug information center activities. The project work involves 2 to 4 students in a hospital or community-based topic. The duration of project work is 6 months.

The Faculty of Pharmacy uses a variety of teaching learning methods for its undergraduate and postgraduate students. These include in addition to didactics supported by modern audiovisual aids, group discussions, CD demonstrations, seminars and case discussions, ward rounds, journal clubs and e-learning sessions. The introduction of Pharm D program in 2008 has provided greater thrust for the teaching learning sessions to be more aligned with clinical experience.

There has been a significant increase in research and publications in the last five years. While the total number of research publications before 2008 was 73, this figure rose to 132 in the period between 2009 and 2012. The number of research projects has grown from 3 to 34 between 2008 and 2012. The College of Pharmacy has signed four MoUs during this period and five departments are engaged in consultancy work. Three faculty members have taken up full time Ph.D. work and 7 faculty members are recognized as Ph.D. guides as against 3 before 2009. Chancellor’s Summer Research Fellowship has been used by 12 students since it was introduced in 2011.

The Faculty maintains the Herbal and Indian Medicine Research Laboratory (HIMRL) in the campus to provide support for ongoing research projects in Indian Medicine.
Expansion of the activities of the **drug information center** is another major change from 2009. Other activities include antibiotic prescription audits, total parenteral nutrition dilutions for neonatal ICU, dispensing pediatric dose dilution and cancer chemotherapy dose dilution. The Faculty of Pharmacy collaborated with the clinical faculty and hospital staff in compiling and bringing out the hospital formulary for use in Sri Ramachandra Medical Center and Hospital in 2011.

The Faculty conducts two add-on courses: A 6-months certificate course in Regulatory Affairs and a 1-year certificate course in Clinical Research; both under the B.Pharm course

There has also been a noticeable improvement in the figures for **job placement** of graduates and postgraduates from the College of Pharmacy. Successful placement was recorded in 37 instances before 2009; this figure rose to 58 in the next 4 years. The number of registered alumni showed a similar increase from 230 before 2009 to 650 after.

Future plans include: Introduction of a modular curriculum for B.Pharmacy, more short-term value-added courses, organization of more collaborative conferences and projects, introduction of joint/split Ph.D. programs, procuring international research funding and establishing a ‘Center of Excellence’ in the area of drug delivery and drug discovery.

**Observations:**

- The significant developments in the Faculty of Pharmacy in the last 5 years have been the introduction of **Pharm D program**, establishment of **Pharmacy Education Unit** and an upsurge in research activities.
- The introduction of the doctoral program has resulted in greater participation of students and teachers in clinical activities and prescription practices in Sri Ramachandra Medical Center and Hospital and in increasing the awareness on medication safety in prescription and dispensing practices.
- The Pharmacy Education Unit has introduced several initiatives in curricular and faculty development activities.
- The Faculty of Pharmacy has recently introduced a **longitudinal mentoring** program.
- There has been a perceptible spurt in **research** participation and **publications** as well as applications for patents.
- The Herbal and Indian Medicine Research Laboratory (HIMRL) of the Faculty is well maintained and provides support for ongoing research in Indian Medicine.

Faculty of Physiotherapy

The College of Physiotherapy was started in 1993 and offered the 4-year Bachelor of Physiotherapy (BPT) program with an annual intake of 50 students. The BPT course now includes in addition to 8 semesters, 6 months of internship. The Master of Physiotherapy (MPT) program in three specialties – Orthopedics & Traumatology, Cardio-pulmonary Sciences and Neurosciences - was started in 1999. The guidelines recommended by the Indian Association of Physiotherapists are followed for both BPT and MPT programs.

The College of Physiotherapy is located in a built-in area of 2224.84 sq.mts in a separate building in the campus.

In addition to the 14 teaching faculty, the department has 15 physiotherapists to share the clinical responsibilities. The department attracts on an average 300 outpatients every day. In addition to preparing regular schedules for didactics and clinical teaching, the faculty are actively involved in collecting and analyzing student feedback and in the mentoring process. The College sends periodic reports to the IQAC, Quality Improvement & Patient Safety Team (QIPST), Medical Director, Dean of Faculties and the Vice Chancellor’s office.

One of the innovative features was the introduction of log book for clinical work/skills development. The other academic enrichment steps include vertical integration in the final semester of BPT course, Journal Club for the postgraduate students and Continuing Physiotherapy Education programs. New audiovisual aids and advanced rehabilitation equipment like EMG Biofeedback and Hand Tutor were recently added to the teaching facilities.

The student mentorship program has been strengthened and a mentoring committee formed. The committee has formulated mentoring guidelines and has developed an agreement form. Several steps have been initiated to identify and nurture special talents in students. This includes the ‘Strides up’ talent program and ‘INSPIRE’, the talent board for students to express their aptitude and ability in art, literature etc. The effectiveness of parent-teacher interactions has also been strengthened. Another initiative was creating opportunities for student participation in National Entrepreneurial Network (NEN) activities. This is an interdepartmental
effort in collaboration with the Faculty of Management Science and is assisted by the Physiotherapy alumni association.

Between 2009 and 2012 the College introduced curricular changes in both undergraduate and postgraduate courses. For the MPT programs, curricular changes were introduced in May 2008, May 2010 and April 2012. The student intake for the MPT courses was increased from 4 to 6 in each of the specialties. This was in keeping with the increased demand for these specialties.

The College of Physiotherapy introduced a value-added Certificate Course in Orthopedic Manual Physiotherapy (COMPT) in 2009 held annually in collaboration with the Institute of Therapeutic Sciences, Michigan, USA. This has attracted a large number of participants from both the academic and service streams. In addition, a 3-months certificate course in Rehabilitation is conducted under the BPT program. The other innovative step was introduction of senior internship in 2013. The one-year internship is open to 10 students each year and carries a stipend.

The faculty in Physiotherapy have participated in the upsurge in research initiatives and activities in SRU. Seven members of the teaching faculty have registered for the Ph.D. program. The College has also contributed 5 research papers in the last 5 years; one in international and four in national journals and a chapter in a text book. The contributions of the senior faculty of the College of Physiotherapy were recognized by the Indian Association of Physiotherapists (IAP) and the Tamil Nadu Dr. MGR Medical University. The principal and a senior teacher received distinguished service awards from IAP and the Tamil Nadu Dr. MGR Medical University honored the Principal by ‘Best Teacher Award’ in 2011.

Future plans include introduction of a credit-based system for BPT, starting of Doctoral program in Physiotherapy (DPT), Integrated MPT/Ph.D. and split Ph.D. programs and Fellowships in Neuro Rehabilitation, Cardiac Rehabilitation and Manual Therapy. On the clinical side, programs for Geriatric and Community Physiotherapy and Comprehensive Neuro Rehabilitation have been planned. Research initiatives for the future include collaborative research in Manual Therapy, Brain Plasticity and establishment of a gait lab.

Observations:

- The factor that stands out prominent on interaction with the faculty members of the Physiotherapy department is the team spirit and the seamless sharing of responsibilities amongst them.
o Introduction of specific measures for student support and innovative steps like senior internship with provision for stipend have increased the demand of students to join the BPT program in SRU.

o Introduction of the value-added Certificate Course in Orthopedic Manual Physiotherapy (COMPT) held annually with participation of international faculty has similarly drawn aspiring students and professionals to SRU.

Faculty of Biomedical Sciences, Technology and Research

There are five departments under this Faculty. Human Genetics, Biotechnology, Biomedical Sciences, Bioinformatics and Medicinal Chemistry.

❖ Department of Human Genetics

The department was established in 1997 with the aim of achieving excellence in education and research in human genetics and to be a comprehensive center for genetic testing services and radiation bio-dosimetry. The objectives of Human Genetics department are: to provide knowledge in genetics and training to students, health professionals & researchers and relevant information to the public, produce an inspiring and productive community of research scholars, deliver advice and care for patients and families through technical expertise in genetic diagnosis, integrated clinical and laboratory services, and expand knowledge and create new applications through laboratory and clinical research. Its three thrust areas - academics, research and diagnostics – are defined and developed with equal importance.

The department prepares students for the two-year M.Sc course in Human Genetics and Ph.D. program in Biomedical Sciences. The Masters program is run as a credit-based semester system and lays as much emphasis on acquisition of diagnostic laboratory skills and insight into research methodology as on the knowledge component. The curriculum was revised in 2008. Fifteen students are admitted to the program each year. From 2013-14 the department plans to introduce a 6-months certificate course in Medical Genetics as a value-added course.

M.Sc students are exposed to a variety of teaching-learning methods that include: didactic lectures, interactive sessions, Problem Based Learning and demonstrations. In addition, they participate in field visits, library readings, seminars, journal clubs, debates, workshops, projects, process recordings, clinical presentations, clinical conferences and guest lectures. Computer-assisted learning is used extensively and
students also get opportunities to visit industry and research laboratories. The final semester includes clinical postings and in-house dissertation. Assessments involve continuous formative assessments, internal and end of semester examinations. From 2003 onwards, the student with the best performance in the final qualifying examination each year is awarded a gold medal.

The department has a faculty strength of 12; with two Professors, an Associate Professor, four Assistant Professors, five Lecturers and a lab assistant. Their roles and responsibilities in the three thrust areas of academics, research and diagnostics are clearly defined. The faculty also support teaching sessions in other departments like Bioinformatics, Biotechnology and Biomedical Sciences and departments in other Faculties like the Faculty of Medicine, Nursing and Allied Health Sciences.

An important strength of the department is the state of the art, multidisciplinary genetic diagnostic facility it has established. These span areas like cytogenetics, molecular, biochemical, prenatal, cancer and environmental genetics. The expertise in chromosome testing, molecular cytogenetics, DNA testing and biochemical screening has allowed the department to undertake clinical diagnostic, clinical and environmental research and consultancy services and establish its reputation as a most reliable and consistent center for these investigations. The Government of Tamil Nadu has recognized the department as a registered center for prenatal genetic diagnosis.

The Committee members could sense the pride of the faculty when they started explaining the recognition of their laboratory by the Atomic Energy Regulatory Board (AERB), Government of India, as a center for assessment of personnel radiation exposure by biodosimetry techniques. The Head of the department informed that in 2011, AERB re-accredited the lab for 3 more years; adding that this is the only facility outside the Department of Atomic Energy in the country to be so recognized.

The high laboratory standards established by the department have also enabled it to be recognized as a referral lab for inter-lab comparison of results by several clinical diagnostic laboratories in the region. These include Anand Diagnostic Laboratory, Bangalore, Genetic Laboratory, Amrita Institute of Medical Sciences, Cochin, Department of Medical Sciences, Apollo Hospitals, Chennai, Division of Genetics, Sankaranetralaya, Chennai and Division of Genetics, Manipal Hospital, Bangalore.
The Genetic Lab forms part of the NABL-accredited Sri Ramachandra Laboratory Services.

The contributions of the department in areas of research and publications have been equally commendable. There are currently 13 ongoing funded research projects with a total outlay of Rs. 234.8 lakhs. Most of them are funded by national agencies like DST, DBT, DRDO and ICMR. The other sources of fund are Chancellor’s Fellowships for Ph.D. scholars, Chancellor’s Summer Research Fellowships for students, SRU’s GATE project for young investigators and Grant-in-aid from national and international agencies. There has been a perceptible upward trend in the number of funded projects taken up each year between 2008 and 2012. Between 2008 and 2010 the department completed funded projects totalling Rs. 34.22 lakhs. Five among the faculty are recognized guides for Ph.D. Seventeen students have registered for and six have completed their Ph.D. program.

The number of research publications in national and international journals (with impact factor ranging between 0.9 and 13.45) shows a corresponding rise from 2008 to 2012. Among the total of 69 publications (36 in national and 33 in international journals) during this period, the noticeable increase with 23 publications in 2012 is particularly striking. A number of these involve research work on biomedical application of nanotechnology.

Unlike publications, the number of paper and poster presentations in conferences has not shown a noticeable increase in the same period (2008-2012). Out of a total of 58 presentations, 36 were oral and 22 poster presentations.

The faculty have authored three professional books in the last three years; with titles Safe Handling of Radionuclide (2010), Animal Cell Culture (2010) and Genetics for Nurses (2012) Their user-friendly and succinct style of presentation with rich illustrations and explanatory diagrams have made them popular titles amongst students, research scholars and faculty alike.

Department of Biotechnology
Established in 2001, the department offers M.Sc and Ph.D. programs in Biotechnology. Each year 20 students are admitted to the M.Sc program. Being a research-oriented course, the curriculum stresses on experiential learning and acquisition of laboratory skills. The curriculum was last revised in 2005.
The department uses group discussion, student seminars, dedicated project work and dissertation to complement traditional teaching methods like lectures and laboratory training. The students also get ample opportunities to attend invited guest lectures and participate in interdisciplinary learning through conferences and workshops organized by the department and by other peer departments like Human Genetics and Biomedical Sciences. The department has 10 computers and its library has a collection of 74 books.

The department has a **faculty strength of 8** that includes one Professor, one Associate Professor and six Assistant Professors and is supported by one technical staff. The teacher - student ratio is 1:3. The presence of seven research scholars, six of whom had their Masters degrees from other universities adds to the academic strength of the department. Two scholars have been successfully guided and have secured Ph.D. degrees.

There are 4 ongoing **research** projects with a total outlay of Rs. 28.39 lakhs including one funded by the University’s GATE scheme. There have been 17 **publications** by the faculty in the last 5 years. Twelve of these were published in international and four in national journals. One publication appeared in African Journal of Biotechnology (2009). The faculty are involved in research consultancy with a total outlay of Rs. 3.7 lakhs.

The department has organized 12 national and international seminars in the last five years.

The faculty and students have received several **awards** and **recognitions**. These include the Young Biochemical Scientist Award (2009) by ICMR, Ministry of Health & Family Welfare, Government of India, International Travel Grant to attend the workshop on “Protein expression & purification strategies” by Chulalonglorn University Bangkok, Thailand (2010) and the INSPIRE student Fellowship Award by Govt. of India, Ministry of Science & Technology, Department of Science & Technology, New Delhi (2011). Four students have passed GRE, CSIR NET, or GATE exams and have secured national-level rankings. Two alumni of M.Sc batch are doing postdoc work in Harvard Medical School.

The department has added four **value-added courses** recently. These include a 6-months Diploma in Molecular Immunotechniques, 6-months Diploma in Marine Natural Products, a 3-months certificate course *In Vitro Pre-clinical Bioassays for*
screening natural products and a 3-months certificate course in Techniques in Genetic Engineering. Another value-added course is planned to be started from June 2013. Two other courses have also been approved by the Board of Studies and will be started in the coming years.

Future plans include starting more specialized courses in Biotechnology and M.Phil program.

**Department of Biomedical Sciences**

This is one of the youngest departments in the University and was started in 2007. The need for starting a Bachelors degree program leading to M.Sc in Biomedical Sciences already established in the University became increasingly obvious and was reinforced by feedback from students and alumni. Thirty students are admitted to the B.Sc in Biomedical Sciences program annually. The demand ratio for the course currently is 1:2.

The B.Sc program has been designed keeping in mind the importance of introducing optimum instructional content that includes fundamentals of basic sciences and medical science to provide a strong foundation for a professional career and prepare the students to pursue Masters program in any of the specialized M.Sc courses in Biomedical Sciences.

The department has a faculty strength of 6 in addition to a technical assistant. Administrative support is provided by office staff shared by other departments in the Faculty. The teaching staff consists of one Professor, two Assistant Professors and four Lecturers. The teacher-student ratio is 1:9.

The curriculum, which was last revised in 2009, is multidisciplinary and is designed to sensitize the learner to modern developments in the field of biomedical sciences and includes genomics, proteomics, applied biotechnology, antibody engineering, medical genetics, medical transcription and cancer biology. In addition, there is adequate emphasis on basic chemistry, physics, mathematics, computer applications, principles of management science and laboratory work.

The B.Sc Biomedical Science course is run on a credit-based semester basis with stress on research. Students are motivated to take up a research career and the teaching learning methods are structured accordingly with stress on experiential learning and lab work. Academic flexibility is provided by allowing the students to opt for human genetics, biotechnology or medical bioinformatics in the last two
semesters. The students are also required to take 6-months dedicated project work.

The department library has 68 titles and 10 computers.

Academic performance of the students has been very good and consistent in the last five years. The University encourages competitiveness and academic excellence by instituting cash awards for the best student each year in the name of the Founder Chancellor. Four distinctions and four University ranks were recorded in the last four years. Most of the students have taken up the Chancellor’s Summer Research Fellowships and two of them have published papers in peer-reviewed national journals.

Students are required to complete clinical rotation in their final semester as an important part of experiential learning. The rotation is arranged for 20 days and forms part of student assessment in the university examination.

The faculty have shown keen interest in research and publications. A research project with an outlay of Rs. 6 lakhs was completed in the last two years. The faculty are involved in four ongoing research projects with a total outlay of Rs. 50 lakhs and have generated Rs. 0.96 lakhs through research consultancy work for other universities and institutions.

There have been 30 publications in the last 5 years by the faculty in indexed national and international journals with impact factor varying between 0.796 and 11.68. Twenty five papers were published in international and five in national journals. Of the six conferences/seminars organized by the department, five were national and one international. The faculty have attended more than 100 conferences; both national and international and have been invited as guest speakers in many seminars and conferences and have received recognition and awards from several universities and institutions in the country.

Performance of students who graduated from the program has been uniformly good. Nine BMS B.Sc alumni are pursuing MS-Ph.D. programs in different universities; 6 in the UK and one in USA and have obtained Fellowship placements. Feedback from universities and institutions in UK on the course content and the knowledge and skills exhibited by SRU students has been good.

The department has introduced four value-added courses under B.Sc Biomedical Sciences: a 3-months certificate course on Data Analysis and Scientific Writing, 3-months certificate course on Cytogenetic Techniques in Drosophila Research, 6-months Diploma in Stem Cell Technology and 3-months certificate course in Basic Electronics and Bioinstrumentation.
**Department of Medicinal Chemistry**

As in the case of Biomedical Sciences, this department was also started in 2007. The **M.Sc program in Medicinal Chemistry** was started keeping in mind the increasing demand for trained medicinal chemists with the rapid escalation in R&D activities by drug industry and pharmaceutical companies in response to the new WTO patent regime.

The subjects taught include: Synthetic organic chemistry, Natural products chemistry, Biology aspects (Drug-delivery/absorption/metabolism), Instrumentation techniques for analyzing the compounds, Quality assurance, Drug synthesis & action, Computer aided drug design and Intellectual Property Rights. Students in addition have to take up project work also. The methods of teaching include: Teaching with molecular models, power point presentations, assignments, seminars and computer aided drug design.

The department is equipped with **state of the art laboratories** with facilities like UV, GC, HPLC, FTIR, Photo reactor etc. The other facilities include, department Library, computers with internet facility and chemistry softwares and molecular models. These have been designed with research activities in mind such as designing synthetic routes for target molecules, isolation, characterization of molecules from natural sources, biological activity studies of natural and synthetic molecules, Qualitative Structure-Activity Relationship (QSAR) studies and computer-aided drug design.

The faculty include one Professor, one Associate Professor, a senior research scientist, a lab assistant and an office assistant.

The department completed one funded research project and has two ongoing projects now. The application filed for another funded project is under consideration. The faculty uses the facilities available for guiding external students for their research projects and helping researchers in the structure elucidation of organic compounds using spectroscopic data. Eight research papers were published by the faculty in the last five years; 2 in national and 6 in international journals. The department has also organized one national conference, three continuing education programs and an intercollegiate competition and students from several institutions in the region participated.

The department recently added several **interdisciplinary value-added courses**. These are certificate/Diploma courses and include: Separation techniques based on instrumental methods, structural characterization by spectroscopic methods, Application of Polymer Science in Medicine, Process development for drugs and Chemistry of excipients.
The faculty expressed their disappointment at the poor student admission rates for the course. This has been considered seriously by the department and the University officials in several meetings and many corrective measures have been tried. The Head of the department mentioned that the reasons for the poor response have been identified as lack of awareness of the excellent facilities in the department and the opportunities for interdisciplinary learning and possibly also the title of the course itself as ‘Medicinal Chemistry.’ Intense efforts are continuing to inform teachers and students in higher secondary schools in and around the region about the immense potential of the course in providing exciting research and job opportunities. The suggestion that changing the name of the course from ‘Medicinal Chemistry’ to other evocative appellations like ‘Pharmaceutical Chemistry’ has been taken seriously by the University and a decision on this is expected soon.

Future plans will concentrate on strengthening the research potential of the department by expanding the instrumental facilities, promoting active research and publications and starting specializations like Bio-organic chemistry and Pharmaceutical Analytical Chemistry. The department also intends to apply for funding for research projects in the fields of synthetic organic chemistry and natural products chemistry.

Department of Bioinformatics

The department was established in 2003 and offers **M.Sc and Ph.D. programs** in Bioinformatics. The curriculum for the M.Sc program was revised in 2008 and again in 2012 and the course contents made more interdisciplinary. Permission of the Board of Management to rename the course as ‘M.Sc in Medical Bioinformatics’ from 2013-14 has been obtained. Twenty students are admitted for the course each year. Demand ratio for the course has been calculated as 1:2. The department will be offering a 6 months certificate course in Medical Informatics from 2013-2014 as a value-added course.

The department uses a variety of teaching-learning methods that include interactive lectures, seminars, group discussions, project work and practical sessions. In addition, students participate regularly in industrial visits, conferences, seminars and workshops. The curriculum focuses on acquisition of knowledge and skills in using different computer programs. Programming in C, C++, DBMS, Perl & Bioperls are incorporated in the curriculum to realize this objective. All the computers in the department have intra- and high-speed Internet connectivity. Students are offered remedial mathematics and biology lessons in the beginning of the course. The department also receives wet-lab support from other departments like Human Genetics, Biotechnology and Biochemistry.
A point of special note is the department’s willingness to provide uninterrupted learning facilities to a differently-abled student to complete the Masters program. The student is currently pursuing full-time Ph.D. program.

The department has developed a system of documenting and analyzing student feedback on the course objectives and faculty support.

The Bioinformatics faculty consists of one Professor, five Lecturers and a System Administrator (Grid Computing). The teacher to student ratio is 1:2. In addition to their departmental activities, they participate in providing teaching support to several courses in other departments and faculties like Biomedical Sciences, Allied Health Sciences, Pharmacy and Nursing.

The R3 Lab System has a Freeware Lab, Commercial Software Lab and Skills lab. The equipment includes 60 computers with high speed Internet connection, commercial software and bioinformatics freeware tools. Students use the Central Library rather than a department library for their learning resources.

The faculty have been active in research, publications and consultancy work. The senior Professor in the department is a recognized Ph.D. guide. There are five ongoing funded research projects with a total outlay of Rs. 2.35 lakhs. Three faculty members are pursuing part-time Ph.D. program and two research scholars are registered for full-time Ph.D. under the Chancellor’s Research Fellowship. All the 11 publications from the department in the last five years were published in international journals. The faculty have attended a total of 69 conferences, workshops and seminars and have organized eight National and International Seminars/Workshops in the last 5 years.

A notable feature is the publication of four books and an online database by the faculty between 2008 and 2012. The books bear the titles Applied Bioinformatics, Systems Biology, Basic Bioinformatics and Molecular Modelling and Drug Design and have been well received by students and faculty in the department and other departments like Biotechnology, Pharmacy and Medicinal Chemistry. There are indications of online purchase of the titles by other institutions and professionals in the country. The online database with domain www.swmd.co.in is a seaweed metabolite information site.

The pride of the department is receiving the NS-EN ISO 9001:2008/ISO 9001:2008 certificate “to conduct a Postgraduate Course in Bioinformatics” as the “department has been found to be of the Quality Management System Standard.” The certification is valid till 2015.
The ISO certification, in addition to strengthening organizational standards and the academic progress of the department, has heightened awareness about the quality of the M.Sc program and has resulted in securing placement of 77% of graduates in diverse areas like Bioinformatics R&D, Bioinformatics teaching, Information Technology and Information Technology-Enabled Services (ITES). 16% of the students are pursuing higher studies whereas in the remaining 7%, details of placement are not available. The department has a registered Alumni Association that is very active in conducting workshops and maintains an active social network (Facebook).

Future plans include introduction of an Integrated M.Sc Medical Bioinformatics/Ph.D. Program and to increase funded research projects with grants from both Government & Industry sources.

Observations:

- There is evidence of constant attention to the curriculum and curricular modifications in keeping with rapid changes in disciplines like human genetics, biotechnology, biomedical sciences and medical bioinformatics.
- The Human Genetics laboratory has been recognized by the Atomic Energy Regulatory Board (AERB), Government of India, as a center for assessment of personnel radiation exposure by biodosimetry techniques. This is the only such facility to be so recognized in the country outside the purview of the department of Atomic Energy, Government of India.
- Involvement in funded research projects, publications of research papers in national and international journals with high impact factor and authorship of books and monographs by the faculty are impressive.
- The attempt by the department of Bioinformatics to sustain high quality of academic standards for its M.Sc program and get ISO certification is commendable.
- There is evidence for placement of graduating students in well-paid jobs and their acceptance for doctoral programs both in India and abroad.
- The decision to re-title courses as ‘Pharmaceutical Chemistry’ and ‘Medical Bioinformatics’ and introduce value-added courses like Medical Genetics and Medical Informatics in the coming academic year and introduction of specialized and futuristic courses will enhance the value of the programs offered by the departments of Medicinal Chemistry and Bioinformatics.
- The Committee felt that there is scope for the functioning of the departments of Medicinal Chemistry and Bioinformatics to be developed further by strengthening their headships.
The Department of Environmental Health Engineering

The EHE department was initially established in 1998 as an Environmental Health Engineering Cell by the United Nations Industrial Development Organization (UNIDO) and the Central Leather Research Institute (CLRI), Chennai, to provide occupational safety and health services to the leather industry. In the next few years, it grew in strength by multiple interdepartmental and inter-institutional collaborations, launch of novel academic programs and extramural research funding and was accredited by WHO as a Collaborating Center for Occupational Health. Multiple national and international collaborations and high end research publications continued and the department was re-accredited by WHO and accredited by ICMR as a Center for Advanced Research in Environmental Health.

The EHE department has 9 faculty members in addition to 31 research/teaching personnel to support its more than 10 concurrent ongoing research projects and advisory consultancy to 60–80 industries with an annual turnover of approximately Rs 2 crores. With 40-50 local institutional collaborations, involvement with 3 State Ministries (Environment, Health & Labor), 6 Central Ministries (Environment, Health, Labor, Renewable Energy, Earth Sciences and Science & Technology) 3 UN agencies (WHO, International Labor Organization (ILO) and United Nations Environment Program (UNEP), 3 bilateral agencies (GTZ, USEPA and the Center for Disease Control (CDC) and 10 long-term international collaborations, the EHE department has raised itself to national and international prominence and stature.

The department continues its earlier programs for Associate Fellowship in Industrial Health (AFIH), the National Examination Board in Occupational Safety & Health (NEBOSH) and the distance education program for IGNOU. Two courses have been added in the last three years: Master of Public Health (MPH) and a value-added certificate course in Occupational Health and Safety Management System (OHSMS). The curricula and course content for these courses have been patterned after international programs and emphasize experiential learning and field experience.

The staff profile for these programs includes a multi-disciplinary team consisting of physicians, physicists, toxicologists, engineers, chemists, biostatisticians and other health sciences professionals supported by three long-term German experts and several short term visiting faculty members from USA under financial support.
The EHE faculty are involved in many of the SRU committees like hospital infection control committee, promotions committee, publications oversight committee etc.

A large amount of research and extension activities keep the department engaged throughout the year. The key features of these activities are: involvement with multiple agencies (28), a wide geographical spread (61) and more than 50 research publications in national and international journals with high impact factor. All of these have led to high impact recognitions for the department. The research activities are supported by grants and a corpus fund of more than Rs 10 crores.

A robust interdepartmental research network connects the EHE department with several other departments in the University: Physiology, Speech, Language & Hearing Sciences, Human Genetics, Plastic Surgery, Chest Medicine & Pulmonology and the Central Research Facility. Inter-institutional research network has a spread of over 40 agencies representing national and global establishments. The focal areas of research involve health effects of air and water toxicants, environmental and molecular epidemiology, environmental genomics, industrial toxicology, safety engineering, climate change and Public health policy.

The department’s research findings have been published in many high-impact international journals. The paper on the contribution of indoor air pollution from use of household solid fuels to Global Burden of Diseases for example was published in The Lancet in 2012. Another paper on national estimates for health effects of hazardous air pollutants is currently under review. Several other articles and chapters in books have been published by WHO and other global agencies. A collective evaluation shows an H index of 10 for these publications. 40% of these have interdepartmental involvement and 55% have international involvement.

A historic opportunity that underlined the full impact of global recognition of the research and extension activities of the EHE department offered itself during the visit to India by the US Secretary of State in August 2011 in which the US Secretary expressed her wish to see the outcome of the collaborative ‘cookstove project’ and interact with the SRU team involved. In a letter addressed to the Vice Chancellor of SRU after the visit the Secretary wrote “Thank you, and your colleagues, for your help with our cookstoves event in Chennai... Please know how appreciative I am for all the hard work that went into the success of our event. It is
"my hope that it will help build support for our cookstove initiative not only in India, but around the world."

The department has strengthened its laboratory and field infrastructure significantly in the last 5 years to facilitate full realization of its expanded institutional and global partnerships and commitment. Commensurate measures to boost the academic interest and participation of trainees and students in the educational programs have also been undertaken. These consist of: customised study materials, web-based platforms for interaction, active involvement of trainees in research projects, co-authorship in publications, absorption into the department and instilling confidence in 100% placement.

A summing up of the innovative practices followed by the department will include: investment in training of human resources, triple-pronged focus on research, academics and outreach, extensive external peer-review for all initiatives, elaborate science-society-policy interface, Global benchmarks, major social outreach component in all programs and investment in dedicated infra-structure to ensure sustainability.

Among the future plans of the Environmental Health Engineering department are:
- Deliver the existing center activities
- Introduce MPH-MBA & M.Sc (Industrial Hygiene and Safety) programs by 2014
- Get Ministry of Environment and Forests (MoEF) Center for Excellence recognition by 2015
- Get recognized as a National Institute of Health (NIH) Center of Excellence by 2016.
- Establish an internationally recognized Center for Global Environmental Health at Sri Ramachandra University.

❖ Department of Speech, Language & Hearing Sciences (SLHS)

The department has extended its academic, healthcare and research activities enormously since its inception in 1995. These include starting of the 4-year undergraduate program in Speech and Language Pathology (BASLP) in 1998, Registration of the first candidate for the Ph.D. program in 2002, and commencement of the 2-year postgraduate program in Speech & Language Pathology in 2004.
Among the many scaled-up activities of the department between 2008 and 2012 was the increase in the intake of undergraduate students from 30 to 40 and postgraduate students from 10 to 15. The curricula for these courses follow guidelines prescribed by the Rehabilitation Council of India (RCI). In 2010, the curriculum for BASLP program was revised with inclusion of ICT (Computer fundamentals), Indian Constitution and Environmental Studies. Lab hours were added to clinical postings and didactics.

The undergraduate and postgraduate programs are handled by a team of 18 faculty members that includes 2 Professors, 3 Readers, 2 Senior Assistant Professors, 2 Assistant Professors, 3 Senior Lecturers, 5 Lecturers and 1 Tutor.

One of the important features of the SLHS department is the multidisciplinary involvement in its day to day activities. The department works in close association with the departments of Neurology, ENT, Pediatrics, Neonatology, Plastic Surgery, Orthodontics and Clinical Psychology in providing patient care, training and extension activities. Among its innovative teaching-learning methods are small group learning with hands-on training, use of audiovisual samples, group discussion and student projects. Other learning sessions like Journal Club for the postgraduates, clinical conferences for the II-year undergraduates, audiological clinical case presentations for II-year undergraduates, clinical lectures, workshop series and skills imparting program for the first year undergraduates have been introduced.

SLHS department’s performance in research, publications and involvement in continuing educational programs has been impressive. In the last 5 years, there were 20 publications in indexed journals; 11 in national and 9 in international journals in addition to 13 publications in proceedings. Faculty contributed chapters in two books. The department has strengthened its learning resources by acquiring more software and other learning materials.

The department has concentrated special attention in continuing education and faculty development. While 11 of its faculty travelled abroad for Continuing Education and training programs, all the 18 members attended similar programs at the national level. The several collaborative agreements and MoUs the SLHS department has entered into with national and international institutions and agencies have enriched its training and research opportunities. These include the agreements with the University of Toronto, Canada, The SmileTrain, USA, Transforming Faces Worldwide (TFW) Canada, and ICMR, New Delhi.
The large grants for research, community service and training projects the department has been able to attract are equally impressive. In addition to Rs 26 lakhs for funded research projects, the faculty received research grants of Rs 1.8 lakhs through SRU’s GATE project. Equally striking, if not more, are the large grants totaling Rs 1.4 crores received for community services. Of this Rs. 1.36 crores were provided by TFW, Canada (TFW Project Phase I Rs. 50 lakhs, Phase II Rs. 30 lakhs and Phase III Rs 56 lakhs) and 4 lakhs by Mahindra & Mahindra, India. The other major funding totaling Rs. 1.12 crores came from The SmileTrain, USA, allocated to Sri Ramachandra University-SmileTrain Speech Training Initiative (SRUSTI) for a period of 6 years. This has been successfully utilized to establish 21 centers and training of speech pathologists in different parts of the country.

Such wide-ranging involvement in training, healthcare and research has brought several recognitions, both at national and international levels. In all, 11 faculty members received such awards. These include 2 Fulbright Research Fellowships, One East West Center Fellowship, Dr. Rathna Oration Award, award for the best paper presented in Audiology and Speech, in the 43rd ISHACON, Kolkata and the award for best poster presentation in Speech - 44th ISHACON, Hyderabad. In addition, 3 faculty members received the highly specialized Hanen certification (specialized training on initiation of speech in small children with speech disorders and parent empowerment training provided by a Canadian firm), one was certified for procedures in voice diagnostics and two certified for procedures in cochlear implantation.

Future plans of the department include:

- Academics – Skills lab (Virtual workstations in speech & audiology)
- Research – Fellowships (in Cleft, Voice & Dysphagia)
- Clinics – Specialty clinics as centers of excellence (Voice & Dysphagia, early intervention for child language, Tele - Practice)

DIRECTORY OF CLINICAL NUTRITION

The Clinical Nutrition department was started in 1997 with the objectives of promoting education and training in the scientific principles of nutrition and emphasizing its role in supporting healthcare services, providing evidence-based medical nutrition therapy in clinical settings, promoting research and developing newer strategies for the prevention and treatment of diseases. Accordingly, a diploma course in Clinical Nutrition with an annual intake of 10 students was started in 1997.
The University soon realized that the complexity of the rapidly expanding field of clinical nutrition necessitated an expanded curriculum; more student-centered and more skill-oriented. The Diploma course was discontinued and the M.Sc program in Clinical Nutrition was started in 2007. The initial efforts were prioritized to developing appropriate infrastructure including state of the art laboratory facilities for hands-on training of students and a robust curriculum that encourages clinical exposure, participatory learning and more objective assessment methods. The current M.Sc program has an annual admission of 20 students.

In addition to didactic sessions (3 hours/day) the teaching-learning includes bedside teaching and discussions with consultants. The Food Science and Analysis Labs provide the students with opportunities to experiment with innovative recipes to suit various clinical conditions and therapeutic needs. The student lab committee coordinates these efforts. A notable feature is the enteral mixing unit which provides the student with opportunities to develop skills in preparation, distribution and monitoring of enteral feeds. Student seminars, journal clubs and clinical case presentations are conducted and occupy 8 hours in a week. The department library complements the Central Library in meeting specific learning requirements. Problem-based learning sessions were introduced in 2009 to bring an integrated approach in acquiring knowledge. In addition, students participate in Continuing Nutrition Education (CNE) programs held in the campus once a year.

The curriculum includes formative and summative assessment of students and bedside assessments of knowledge and attitude. More objective methods like Objective Structured Nutrition Examination (OSNE) and Objective Structured Clinical Examination complement the learner assessment methods.

The department has developed a transparent student feedback system on faculty performance and has shown readiness to modify assessment criteria based on such feedback. The Faculty Enrichment Program (FEP) introduced by the department and participation in the educational and faculty development programs of the Medical, Dental, Pharmacy and Health Sciences Education Units in the campus provide teachers opportunities to hone their pedagogic skills and develop interdisciplinary viewpoints in education technology. The faculty pointed out that introduction of PBL sessions and OSNE and OSCE are examples of such interdisciplinary interactions.

The teaching faculty participate in a well-organized student mentoring process. Each teacher has 2 to 3 students as mentees. Just as students who need additional academic or personal support are identified and helped, those with higher achievement and performance potentials are recognized and rewarded by recognitions like Best Clinical Practice Award and Best Dissertation Award. Remedial revision classes are arranged for slow learners. The students’ career pathways and placement opportunities are also monitored on a regular basis. The career guidance program run by the department helps in this. 80% placement of graduating students
as teaching faculty or nutritionists in hospitals/fitness centres has been recorded. 20% of the students have opted to pursue higher studies.

Another notable attainment in the last five years has been the visible increase in commitment to research. One of the teachers in the department has completed her Ph.D. research project and six others have registered for Ph.D. programs in SRU or other Universities. Most of them have taken up collaborative projects with departments like Nephrology, Pediatrics, Orthopedics, Pharmacy & Toxicology. In addition, one of the faculty members has taken up research topic funded by the GATE project of the University.

Research publications by the faculty and students have also seen an increase in the last 3 years. Out of 12 publications between 2010 and 2012, 8 papers were published in international and 4 in national journals. The faculty have contributed chapters in 7 books during this period.

Several extension services are also provided by the department. State-level workshops are conducted annually in collaboration with the Food & Nutrition Board. The other activities include participation in outreach camps, organization of National Nutrition Week (1st to 7th September) Breast feeding week (1st to 7th August) World Food Day, Diabetes Day etc.

As in the case of the Faculty of Physiotherapy, the AAA Committee could recognize effective decentralization and delegation of roles and responsibilities amongst the faculty here. The department is headed by an Associate Professor who is assisted by a Lecturer and six Tutors. The faculty were keen to point out the several innovative practices that include multidisciplinary team rounds, diet plans for the newly commissioned ‘G’ block patients, the Nutrition Screening Tools, pamphlets with nutritional advice for various clinical conditions and the handbook for nutritional assessment prepared by the department and its participation in master health check up.

Future plans include starting B.Sc and M.Phil programs in Clinical Nutrition, one-year Specialty Fellowships, starting speciality nutrition clinics and looking for funded research projects and establishing international collaborations.

❖ Department of Allied Health Sciences

The 4-year B.Sc in Allied Health Sciences course was started in 1995 with the aim of training technologists with a strong scientific background and practical skill to assist physicians in the diagnostic and therapeutic areas of patient care. As the first few batches of students graduated from the course, the need to open up opportunities for some of them to pursue higher studies was recognized and the 2-year M.Sc program
in two specialties (Neuroscience & Medical Laboratory Technology) was started in 2004. Two years later, M.Sc AHS in two more specialties (Medical Imaging and Renal Science & Dialysis Technology) were added.

There has been a continued interest of a large number of youngsters from middle- and low-income families to join the AHS course. More and more students have also shown keenness to pursue higher studies and join the M.Sc program. The other notable feature is that in the last five years three graduates from the M.Sc AHS program have registered for full-time Ph.D. and four of them for part-time Ph.D.

The other and perhaps more important reason for the continued interest in the course is the high demand for AHS graduates and assured employment opportunities in well-paid jobs in India and abroad. The course is recognized by the Government of Tamil Nadu and is approved by Association of Indian Universities (AIU). The University has also established equivalency of the B.Sc Allied Health Sciences degree with Bachelors degree offered by institutions in UK, USA and New Zealand. The International Education Research foundation Inc. U.S.A for example, has considered the B.Sc in Allied Health Sciences offered by SRU equivalent to B.Sc in Allied Health program offered by universities in USA. The National Academic Recognition Information Centre for the United Kingdom [UKNARIC] has similarly recognized B.Sc (Allied Health Sciences) comparable to British Bachelor degree standard and the New Zealand Qualifications Authority has recognized the degree equivalent to Bachelor degree offered by a New Zealand University.

The 4-year B.Sc AHS course is structured in 8 semesters that include one year of stipendiary internship. The student is exposed to basic sciences like biology, anatomy, physiology etc in the initial 3 semesters. At the end of the 3rd semester, the student goes through a counseling session and is allocated a branch of specialization of his/her choice. This ensures academic flexibility in the course. The grades achieved by the student in the first 3 semesters are also taken into consideration. The specialties offered include: Anesthesia Technology, Cardiac Technology, Neuroscience Technology, Perfusion Technology, Renal Dialysis Technology and Respiratory Care Technology, Medical Laboratory Technology, Surgical Technology, Radiology & Imaging Science Technology, and Urology Technology. In 2009, Blood Bank and Immunology Technology was added as yet another option.

The faculty for the AHS program are all full-time and some are drawn from basic sciences and clinical departments. The AHS department is headed by the Chairperson who is assisted by two Course Coordinators, two Lecturers, five Tutors and three Clinical Instructors. The curriculum for the course, approved by the Board of Studies, is periodically reviewed and revised. The last revision came into effect in 2011.
A variety of teaching-learning methods are employed and right from the beginning, instructional sessions emphasize the importance of hands-on skills and their application in the clinical scenario. In addition to regular classroom teachings with modern audiovisual aids, learning sessions include CD demonstrations, group discussions, seminars and case discussions, symposia and e-learning. The last five semesters stress on practical skills and most of the learning takes place in the specific specialty department concerned. The enormous spread of infrastructure and learning resources in the SRU campus like the Central Library, laboratories, clinical learning sites and investigational facilities are accessible for the AHS students and are freely utilized for their learning needs. In addition, AHS students actively participate in the several health camps organized by other departments and by the University and attend conferences, workshops and quiz programs and take part in cultural and sports events held in the campus.

Assessment methods include regular internal assessments and tests, monitoring of the students’ attendance and overall participation in the learning process and completion of assignments and projects, maintenance of records and summative assessments that include theory papers, MCQs, practicals and viva.

The department has introduced regular mentorship and counseling for students. The teachers pointed out that some of the students experience learning difficulties but this is usually noticed only in the initial few months into the course. They respond well to remedial sessions, tutorials and personal counseling. Difficulties with English language are addressed by English language lessons introduced as part of the curriculum. Once into practical and hands-on training, they settle down and learning difficulties are rare. The department uses student feedback regularly as one of the monitoring methods for the efficacy of the program and to assess the learning outcomes. Parent-teacher meetings arranged twice a year complement the efforts.

The department considers the Chancellor’s cash prize award for the student who scores the highest total marks in each semester and the Dr. T.K. Partha Sarathy Gold Medal for the Best Outgoing B.Sc AHS student as important sources of encouragement to spur the students towards academic excellence.

The project work for the undergraduates and dissertation for the postgraduates help to ignite and sustain the spirit of enquiry in the students’ minds. The faculty believe these are the activities that trigger the students’ interest to take up higher studies and register for Ph.D.

The faculty in the department have shown a similar interest in research and publications. One of the teachers has taken up research work under the University’s
GATE project (2012-2013). 14 research papers were published by the faculty in the last 5 years in indexed journals; 4 in international and 10 in national journals and 15 papers read in conferences. Between 2008 and 2012, six members of AHS faculty have been honored by recognitions and awards.

The department arranges regular campus interviews. 75 to 83% of the B.Sc AHS students join as clinician assistants or technicians soon after graduation. The number of students seeking higher education (M.Sc AHS) has increased from 3% in 2008 to 15% in 2012. In the case of those who complete M.Sc AHS course, 80 to 90% opt for jobs immediately. The trend to register for Ph.D program has also shown a steady increase over the years with seven of them registering for Ph.D program in the last five years.

The Allied Health Sciences Alumni Association [AHSAA] was started in the year 2002 and has since been registered under the Tamil Nadu Societies Act. The association has at present more than 500 life members. The AHSAA members take an active interest in networking students for employment & higher studies. The association also organizes Continuing Education programs every year.

Some of the innovative practices introduced by the department include: Flexibility in the academic track for students in the undergraduate level, student projects for B.Sc AHS course, Specialization at Masters level, professional skills development program and value-added courses like the Diploma course in Ultrasonography with tie-up with the Ministry of Health, Government of Bhutan and the certificate course in Hemodialysis and Infection control.

Future programs include: Introducing B.Sc in Nuclear Medicine, Masters program in Respiratory Therapy (BOS Approved), Masters in Cardiac Care Technology (BOS Approved) and Masters in Diabetic Care Technology. The department of Allied Health Sciences will strive to achieve recognition as a “Centre of Excellence” in the next five years.

❖ Department of Clinical Psychology

The department has added several new features in teaching-learning, clinical care and research activities in the last five years. It was established in 2000 as the only department offering M.Phil program in Clinical Psychology in Tamil Nadu recognized by the Rehabilitation Council of India. The department now has 16 trainees for M.Phil. So far, 94 trainees have graduated.
The M.Phil program, based in hospital settings, emphasizes a multispecialty model and involves supervisory training for many other specialties. In a changing context with more and more health science courses emphasizing the need for theoretical and practical skills in behavioral science, the department is involved in preparing instructional material for 13 ancillary courses offered by SRU. In addition, the rich clinical material in the campus attracts students from 7 other colleges from three neighboring states for postings in practical training and experience here.

An important feature of the M.Phil program is that 75% of instruction focuses on experiential learning. The curricular contents for the course were revised and strengthened in 2009 and the entire curriculum is now offered in a block-based manner. Summative assessment of clinical work and academic work are included in practicum/viva voce paper.

The students in the 1st year are now rotated on postings in Vidya Sudha the early intervention center for children with special needs in the campus and The Banyan, mental healthcare center, Chennai. In their 2nd year they are posted in Vidya Sudha, The Banyan, Oncology as well as Cleft & Craniofacial Surgery clinics.

The M.Phil program was accorded re-accreditation by the Rehabilitation Council of India in 2011.

The department has introduced one-month introductory classes to bridge the gap between the students’ experience in their Masters program and the clinically oriented M.Phil course. The students now need to secure mandatory pass scores in Core Psychological Tests. New feedback questionnaires have been developed specifically addressing issues like professional training, supervisory training, mentoring and other aspects of professional effectiveness of the faculty and are expected to help the department to enhance teaching-learning methods.

Additional resources have been made available for teaching, learning and clinical work. These include e-books, psychological assessment tools like the Vineland Adaptive Behavior Scale (VABS), Applied Behavior Analysis (ABA), Bayley Scale of Infant and Toddler Development, Assessment of Basic Language and Learning Skills (ABLLS) etc.

The department has a staff strength of 6 members that includes the departmental Head, two Associate Professors, Two Lecturers and a Clinical Psychologist. In addition
to their regular teaching responsibilities, the faculty are involved in mentoring and counseling activities. Three of the faculty members provide professional counseling in the campus for students of the University. Their other commitments include providing consultative services to other departments in Sri Ramachandra Medical Center/Hospital and organizing motivational sessions for the benefit of students and staff.

Adequate infrastructure and other facilities have been provided in the department for academic and clinical activities. These include 2 lecture rooms, 2 assessment rooms, 2 therapy rooms, one behavior therapy room, one neuropsychology lab, library, faculty room etc.

Faculty involvement in research and publications has seen an increase in the last 5 years. There were 6 research publications in national and international journals and 16 paper presentations in conferences. The publications reflect the interdisciplinary nature of work in the department. Twelve students have also presented papers in conferences and three of them have made case presentations in symposia. The faculty supervise the eight ongoing M.Phil dissertations as guides and two members have been appointed as visiting faculty in Mahatma Gandhi University, Kottayam and The University of Kerala, Thiruvananthapuram.

Extension activities include providing professional services in client assessment and therapy at The Banyan, Chennai, three days a week and professional participation in the Family Court in Chennai for eight sessions every month. The faculty and students organize regular mental health awareness programs both within and outside the campus.

The department organizes Eye Movement Desensitization and Reprocessing (EMDR) workshops with invited experts every year. This was carried out in the initial two years with assistance from Cerner Foundation, Bangalore and expert participation from Canada. The faculty in the department continue the workshops on their own now. The MoU signed with Brock University, Canada in 2009 allows visits by experts in assessment and management of Autism and related disorders and in holding workshops for Applied Behavioral Analysis (ABA) training. The laboratory set up for neuropsychology assessment and treatment was also mentioned in this connection.

The alumni association with a membership of over thirty is very active and participates in organizing many of the educational programs.
Among the future plans of the department are: Increasing the number of M.Phil admissions to meet the increasing demand for professional clinical psychologists in the country, streamlining and categorizing teaching-learning methods anchored on a need basis (didactic lectures, seminar, assignments, etc), extending the available labs to enable use of various physiological equipments like biofeedback and neurofeedback necessary for assessment and management, introduction of common psychology classes for ancillary courses and completing the plans to hold the National Conference on Cognitive Neuroscience in 2013 - 2014 in the campus.

Department of Accident & Emergency Medicine

The 4-year B.Sc in Emergency & Trauma Care Technology (ETCT) course was introduced in 2000. The course includes one year of internship. The innovative curriculum was structured with a view to train students to develop as skilled paramedics. The curriculum was revised in 2011 and the contents now focus 60% on practical skills and 40% on knowledge-based training. Each year 25 students are admitted for the course.

The teaching learning methods have undergone significant changes over the years in response to feedbacks from alumni who are employed as paramedics in hospitals and healthcare establishments across the world and with increasing participation and interaction of faculty and students in several national and international conferences and workshops. The students are exposed to lessons in Human Anatomy, Physiology, Biochemistry and Principles of Nursing in the 1st year with emphasis on the structure and functions of airway and cardiovascular, respiratory and musculoskeletal systems. A bridge course in English is also completed in the 1st year. The didactic sessions are provided by basic science teachers in the medical college and the clinical staff and by emergency physicians in the Emergency Department.

The use of simulators and mannequins for practicing life-saving skills such as endotracheal intubation, insertion of venous lines and cardiopulmonary resuscitation constitutes another significant component of learning. Training and assessments are regularly conducted in the Emergency Department. The acquisition of many more simulators and improved facilities to store them in optimum working conditions has made uninterrupted exposure of students to such skills easier. Interaction with ETCT trainees showed the pride and keenness with which they have mastered these skills and their eagerness to be involved in real-life medical emergencies.
The assessment methods have also been revised with greater stress on demonstration of practical skills. In addition to assessment of their knowledge by theory examinations, students are required to demonstrate specific and comprehensive skills including the algorithms followed in First Aid and resuscitative procedures. The department uses objective assessment methods like OSCE as part of formative assessment.

Although most of the learning takes place in the Emergency Department, infrastructure provided for the course has been strengthened in the last 5 years. This includes a simulator lab, air-conditioned to keep the simulators and mannequins in good working condition, more first-aid and resuscitation equipment and additions to the department library.

The department has 7 full-time staff members including the Head of the department. There are two Associate Professors (specialist Physician and specialist Orthopedic Surgeon), Two Assistant Professors who are also emergency medical officers, a Tutor & Junior Technologist (ETCT) and a Clinical Instructor & Junior Technologist (E&TCS). The University draws the services of teachers in other departments like Anatomy, Physiology, Biochemistry etc for instruction in basic medical sciences.

The faculty and instructors pay special attention in supervision and mentoring of the trainees. The team is trained and prepared to accept highly stressful responsibilities on a 24x7 basis and understands the need to lessen the deleterious impact this could have on staff and students. This is lessened by constant interactions in the department and regular mentoring and counseling. Not only is the need for such measures highlighted amongst the students and their teachers but also with the trainees’ parents in the regular parent-teacher meetings.

Students participate in sports and cultural activities in the campus. Their academic interest received a further boost by the introduction of the Gold Medal for the Best Outgoing B.Sc ETCT student from 2012.

An encouraging observation the faculty and staff mentioned was the confidence and expectancy students and their parents display because of the promise of assured placements on well-paid jobs on graduation. 95% of the students have found placements soon after graduation, many of them in hospitals and healthcare facilities abroad (Mostly in Gulf countries and in UK, Malaysia etc)
The faculty have shown keen interest in research, consultancy and extension activities. There were 11 publications in indexed journals from the department in the last five years of which one was in a national and the other ten in international journals. The faculty also contributed two chapters in text books. The Head of the department is a guest editor for *Textbook of Emergency Medicine* published by Walter Kluwer. The programs for American Heart Association-accredited BLS/ACLS courses for doctors and paramedics started in 2007 continues and ETCT students are encouraged to take these as value-added courses. Such courses are also conducted for the University staff through the SREE program. The students and staff have also participated in several community activities on First Aid and common emergencies.

Some of the major achievements of the department in the last three years are: the AHA-accredited BLS/ACLS courses the department conducts at regular intervals, Society for Emergency Medicine, India (SEMI) excellence award received in November 2012 in New Delhi, the three Abstract presentations from SRU scoring the top 3 positions in the International Emergency Medicine conference MEMC in Greece in September 2011.

The Head of the department was keen to add a description of ‘**CEMEx 2011 - Chennai Emergency Management Exercise with focus on humanitarian and medical response**’ a disaster management drill that the staff, students and alumni of the department took an active part in organizing in collaboration with the Management of SRU, UN Disaster Management Team, National Disaster Management Authority, Government of India and the Government of Tamil Nadu. SRU hosted the 5-day academic program from 4th to 7th August 2011 in which about 900 personnel drawn from different areas like doctors, nurses, paramedics, police & fire service personnel, NGOs and school teachers were trained by a team of UN experts on disaster management in the campus. This was followed by a simulated disaster scenario and rescue drill in the center of Chennai city in which SRU Emergency Department received more than 70 casualties from the simulated disaster scene.

In 2012, the department organized a 2-day national workshop “National Trauma Management Course” attended by about 80 participants from all over the country.

The department’s future plans include: Starting MD (Accident & Emergency Medicine) which has been approved by the Medical Council of India and starting M.Sc (Emergency and critical care paramedic) courses. The other plans include greater emphasis on research, conducting the International Trauma Life Support (ITLS) course
in the campus and getting recognition by Australasian Registry for Emergency Medical Technicians (AREMT).

❖ Department of Optometry

This is the youngest department in the University and was started in 2007 with a view to train optometrists technically qualified and skilled to assist the Ophthalmologist in the treatment of disorders of vision. The Optometry department functions under the department of Ophthalmology and offers the 4-year B.Optom degree program that includes one year internship. Twenty students are admitted for the course each year.

The B.Optom curriculum includes introductory courses in basic sciences like Human Anatomy, Physiology, Biochemistry etc in addition to a bridge-course in English language in the first semester. The other subjects include mathematics, physical optics and computer & computer applications. Students at entry level are also given an opportunity to do a remedial mathematics or biology course if they did not have exposure to these subjects in school. The second and third years are spent in learning Optometry core subjects. Here also, the focus is on practical skills and the curriculum lays 75% stress on experiential learning. The B.Optom course is run in a credit-based semester system.

In addition to the facilities in the out-patient section of the Ophthalmology department where B.Optom students receive most of their practical training, the University has provided dedicated areas for learning such as refraction clinic, low vision clinic, vision therapy area and contact lens clinic.

Teaching-learning includes didactic sessions, group discussions, student seminars, journal club, poster and model making and attending guest lectures, conferences and workshops. The department is a member of the International Association for Contact Lens Educators (IACLE) resource center and the Association of Schools and Colleges of Optometry (ASCO). IACLE membership makes several study materials, contact lenses, training CDs etc. available for student learning. ASCO membership provides information about academic and professional activities in vision science in the country and allows students’ participation in national events and conferences at concessional rates. The membership also provides appropriate contacts to organize campus interviews.

The students participate in several extension activities such as school screening programs and visits to centers for children with special needs like the NGO-run organization, SPASTN. Visits to Vidya Sudha, the early intervention center for children with special needs in the campus is also included as one of their learning sites.
Students are given project topics which carry credits for their internal assessment. They took an active part in ‘ENLIGHT 11’ the CME program on low vision aids organised by the department in December 2011.

The department has 6 faculty members. In addition to the Head of the department and the Course in Charge who are Ophthalmologists, the faculty includes an Assistant Professor, a Lecturer and two Clinical Instructors who are trained Optometrists.

The faculty have shared the general enthusiasm in the campus in pursuing research. One of the publications from the department has appeared in an international journal and three more are expected shortly. One of the students took up a project under the Chancellor’s Summer Research Grant last year.

The teachers highlighted the 100% job placement of students from the first two batches as an encouraging experience. This was possible as there is an increasing demand for qualified Optometrists in the country and more importantly, it was facilitated by campus interviews organized by the department. The graduates have found job placements in Sri Ramachandra Hospital, other premier Ophthalmic institutes, optical outlets and multinational companies. A small number of graduates have been able to establish their own Optometry service outlets.

Future plans include enhancing Optometry services and specialty clinics, organizing more CME programs, starting of M.Optom program as well as increasing research activities and publications.

Observations:

- The seven departments under the Faculty of Allied Health Sciences provide a spectrum of educational opportunities at both undergraduate and postgraduate levels with almost certain job placement soon after graduation.
- While the courses offered in the departments of Environmental Health Engineering and Speech, Language and Hearing Sciences have registered national and global reach, recognition and acclaim, those offered by the other five departments are intensely practical with rich possibilities for job placement.
- The curricula for both undergraduate and postgraduate courses in the Faculty have been carefully structured and have undergone timely revisions.
- The innovative practices followed by the EHE department are particularly noteworthy and include: investment in training of human resources, triple-pronged focus on research, academics and outreach, extensive external peer-review for all initiatives, elaborate science-society-policy interface, Global benchmarks, major social outreach component in all programs and
investment in dedicated infra-structure to ensure sustainability. The striking comments by the US Secretary of State in August 2011 draw attention to these efforts.

- The curriculum for the B.Sc Allied Health Sciences offers **academic flexibility**, offers rich job opportunities and prepares the student for Masters Program and Ph.D.
- Value-added courses are offered and the departments have outlined plans for future activities including introduction of several enrichment courses.
- The Committee feels that overall performance of the departments of Clinical Psychology and Clinical Nutrition stands to gain by further strengthening the headship.

**Faculty of Management Sciences**

The Faculty of Management Sciences was started in 2001 and offers a two-year **MBA** program in **Hospital & Health Systems Management**. The course is approved by the All India Council for Technical Education (AICTE). Thirty students are admitted each year.

The curriculum for the MBA program was revised in 2012 keeping in mind the need to strengthen the competencies expected in administrators, business analysts and leaders in the rapidly changing healthcare scenario. The revised curriculum broadens and underlines the areas of Healthcare, Human Resource, Marketing and IT and supports integrated learning experience. The notable features of the revised curriculum are:

- New subjects and topics
- Four Electives - Health Care, HR, Marketing and IT
- Hands-on sessions on all working Saturdays during II semester
- Redesigning of Internal Assessment marks
- Internship for 45 days.
- Project for 60 days
- Communication and English Lab
- Case Study made mandatory

To this, several other initiatives have been added. These include the new system of log book, well-structured lesson plans, faculty daily performance reports, class committee meetings, departmental review meeting once a month, semester-wise student feedback on faculty and SMS alerts to parents on attendance and absenteeism.

The department has made full use of the facilities like the lecture halls, conference hall, placement cell, LAN connectivity to all faculty etc., and learning resources like e-journals, computers in the Active Learning Center, department library with 590 books and journals.
and management CDs. Relevant business and economic magazines and publications are made available to students on a regular basis.

In addition to regular lectures and small group discussions, teaching-learning methods include invited expert and guest lectures and talks, live case studies, hospital visits, interactive sessions with hospital administrators, workshops and role play. Learning difficulties are identified early and focused sessions to help such students are arranged. The student mentoring process helps this.

The 750-bedded Sri Ramachandra Medical Center accredited by NABH and the Joint Commission International (JCI) and the 1275-bedded Sri Ramachandra Hospital run as a free healthcare enterprise in the same campus with their differing philosophies and approaches to management allows a unique opportunity for the MBA students to observe and study healthcare management practices under divergent administrative and financial settings on close quarters.

Among the other student support measures include facilitating education loans, efforts to ensure placement, helping students to participate in intercollegiate management meets, and mentoring and supporting their entrepreneurial efforts to start business ventures. The department’s active membership in the National Entrepreneurial Network (NEN) and the energetic participation of faculty and students in its activities play a valuable role in these initiatives. The recent introduction of a value-added course in Strategic Human Resource Management under the MBA program is an additional feature.

Research and publications of the faculty have shown an upward trend in the last three years. One of the faculty members just completed a research project sponsored by the University’s GATE project whereas another faculty has taken up a similar sponsored project this year. In addition, four teachers in the department have registered for Ph.D. programs and have taken up research projects on their own. The department has contributed three papers in international journals and presented a total of 39 papers in national and international conferences.

The Faculty of Management has conducted several Continuing Education Programs, Workshops and extension activities including industry-institution interactions in the campus. The MoU signed with NEN and membership with Madras Management Association help the department to be involved in several extension activities. The faculty sounded pleased with the several Intercollégiate Management Meets they participated in the last three years. Such connections have also facilitated job placement of the students. The latter has shown a perceptible increase in the last three years.

The Faculty considers its alumni who have taken up consultancy and management positions in hospitals, IT institutions and companies in different parts of the country, its
‘brand ambassadors.’ The alumni association is dynamic and contributes to educational and extension activities of the department.

Future plans for the department include: Introducing value-added diploma and certificate courses in healthcare management, making greater use of video-conferencing facilities to interact with other management institutes, expanding the search for funding agencies for research and extension activities, modernizing teaching-learning and audiovisual aids and developing student exchange programs with other institutions in the country and abroad.

**Observations:**

- The 2-year MBA course on Health Systems Management has a competency-based curriculum which was revised in 2012.
- The Faculty has made use of the hospital facilities and other opportunities for interdisciplinary learning available in the campus.
- Membership in NEN has helped the students to participate in several entrepreneurial activities and trigger interest in entrepreneurship among students in other departments like Physiotherapy.
- There have been several changes in headship of the faculty in the last ten years. The present Faculty Head appears to have a clear vision with plans to guide the department’s future effectively.

**Central Library:**

The Central library was established in 1985 and was initially located in the Medical College building. It was shifted to the purpose-built and spacious premises in 1996.

The library is an impressive facility and occupies an area of 40,000 sq ft located in an easily accessible and central area in the campus. The chief librarian took the members round the library and made a power point presentation of its facilities and functioning.

The working hours of the library are:

- **On Working Days:** 8.00 a.m. to 10.00 p.m.
- **On Holidays:** 8.00 a.m. to 8.00 p.m.
- **Circulation:** 8.15 a.m. to 9.50 p.m.
- **Photocopy/Print/Scanning:** 9.00 a.m. to 8.00 p.m.
- **Internet Browsing:** 8.00 a.m. to 8.00 p.m.

The library resources include print collection and e-resources. Of the total number of 40249 books, 14564 are text books and 25685 are reference volumes. The total number of titles was described as 20559. The collection of theses and dissertations number 4286.
The library subscribes to 501 journals (hard copies) of which 158 are national and 343 are international journals. In addition, online access of 430 journals and 14 databases is available. CD and DVD collection totals 1866.

Facilities added in the last two years in the library include:

- 32 camera CCTV with 4 monitors with recording facility
- Addition of reading hall with 252 seating capacity
- 55 new computer systems with new work stations for internet labs
- Two new UPS of 7 KV & 40 KV for power back up
- New arrival section for prominent display
- New centralized air-conditioning machine
- The heights of the book racks was raised by 3 ft.
- Two hot/cold/room temp. water dispensers

User visits recorded in the gate register showed a gradual increase from 2008 except for the year 2009-2010. The number exceeded 120000 visits in 2011-2012. The number of books circulated also shows a gradual increase between 2008 and 2012 reaching a peak of 39534 books in 2011-2012.

The annual acquisition of books showed a slow increase in the last five years from 1747 in 2008-09 to 3291 in 2012-13. A closer scrutiny showed a discrepancy in the number of books procured for the various faculties. For example, while 2550 new books were added for the Faculty of Medicine in 2011-12, the numbers were 250, 113, 34 and 4 respectively for the Faculties of Dental Sciences, Pharmacy, Biomedical Sciences and Management Sciences. It was pointed out that this discrepancy has to be viewed taking into consideration the total holdings under each Faculty and the sudden demand for more text books under the Faculty of Medicine with the increase in the annual intake of MBBS students from 150 to 250. The total number of volumes under the Faculties of Medicine, Management Sciences and Biomedical Sciences stand at 26753, 2818 and 830 respectively.

The Central Library staff consists of:

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<tr>
<th>Role</th>
<th>Number</th>
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<tbody>
<tr>
<td>Librarian</td>
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<tr>
<td>Deputy librarian</td>
<td>1</td>
</tr>
<tr>
<td>Assistant librarian</td>
<td>1</td>
</tr>
<tr>
<td>Library assistants</td>
<td>4</td>
</tr>
</tbody>
</table>
Senior assistant 1
Junior assistant 1
Attendants 3
Internet assistant 1

One member of the library staff possesses Ph.D. in Library Science, one has M.Phil degree in Library Science and four others have acquired Masters degrees in Library Science.

The annual budget allocation for books ranged between approximately Rs 31 to 45 lakhs between 2008 and 2012 with an abrupt increase to Rs. 61.94 lakhs in 2012-13.

The number of periodicals subscribed has increased from 445 in 2008-09 to 501 in 2012-13. The library subscribes to a larger number of online journals today and holds a total of 65395 back issues of journals.

The library has a rich collection of online resources. The databases acquired in the last five years include: DELNET-Institutional Membership, ProQuest database >2409 Journals / e-books & Abstracts, Uptodate : Clinical decision support database, J-Gate database, EBSCO database and Medlars / Medline database. The list of 430 online journals includes several sources like Wiley-Blackwell, Science Direct, LWW, Medknow, Karger, Thieme, Springer, Sage, ASHA, Future Medicine and Society of Thoracic Surgeon. In addition to DELNET, SRU has developed institutional membership with the British Council Library, Chennai.

44 Ph.D. theses have been uploaded in UGC INFLIBNET website through Shodhganga.

The annual budget allocation for books for the period 2008 to 2012 ranged between Rs. 31.27 lakhs and 44.92 lakhs. The annual figures for journals for the same period ranged between Rs.1.8 and 2.0 crores. What was striking was the amount allocated for electronic resources. Figures ranged between Rs. 5.3 and 7.0 lakhs annually until 2011. In 2011 it rose to Rs 14.18 lakhs and again steeply to Rs.62.82 lakhs in 2012.

The total budget allocations for the five years (2008-2012) for learning resources in the library was Rs. 9.89 crores of which Rs. 1.55 crores was for books, Rs. 7.44 crores for journals and Rs. 89.46 lakhs for e-resources.

The services provided by the library as: Circulation service, On-line Public Access Catalogue (OPAC), information alert service, current awareness service, on-line access to Database Services Internet Labs, inter-library loan, reference service, user orientation and information literacy. In addition, other services like photocopying/scanning/ printing/CD
burning services, Internet browsing, document delivery service, literature Search and CD ROM search facilities are also provided.

Among value-added services, the following were mentioned: Obtaining articles/write-ups through DELNET, prominent display and e-mail messages of new arrivals, organization of library user orientation programs like “Library Modernization by Dr. Samyuktha, Librarian, Pondicherry University and screening University Publications for plagiarism.

The librarian presented the recently introduced “Remote access facility” (available only in very few Institutions) as the pride of the Central Library. This facility allows access of all the e-resources available in the library to the members from anywhere.

**Library Committee**

The Library Committee has **faculty members** from various faculties and **student representatives** from all faculties as regular members. The Dean of Faculties and the Dean of the Medical College are Ex-Officio Members of this Committee. The Committee meets every three months and the minutes of the meetings are filed. The Committee reviews the requests for books/journals/other resources submitted by various departments and recommends its decisions to the Management. The Committee also reviews the findings of annual audit process of the library and makes recommendations for the safety of books and journals.

Future plans for the Central Library include introduction of Web OPAC, creating an institutional Repository, increasing the e-Resources and organizing more Orientation Programs on user awareness.

**Observations:**

- The Central Library is an **impressive facility** and radiates an ambience conducive for learning.
- The staff pattern of the Central Library with one member each with Doctoral qualification and M.Phil in Library Science and four others with Masters qualification along with the supporting staff is adequate for its present level of functioning.
- Students in various Faculties expressed concern that adequate number of prescribed text books are not available in the library. This creates hard times
especially during examinations when demand for text books increase suddenly.

- Although several CCTV cameras and monitors with recording facility have been installed in the library, some faculty members and many students expressed preference for Radio Frequency Identity tags (RFID) in books so that students could carry their own books and note books into the library without fear or inhibition.

**Centers of Excellence:**

Sri Ramachandra University has designated some of the units functioning under it as “Centers of Excellence.” The Vice Chancellor explained that the recognition is primarily based on the track record of these units whereas in a few instances the designation has been granted on the distinct promise of such exemplary performance in the near future. A presentation of 11 such Centers was made before the Committee members were escorted on a tour of these facilities.

1. **Sri Ramachandra Center for diseases related to lifestyle modification and their prevention.**

   Coordinator: Prof S. Thanikachalam, Director & Chairman, Cardiac Care Center, Sri Ramachandra Medical Center.

   The ongoing DST-funded longitudinal study (PURSE HIS Study) was started in 2007 with the aim of assessing risk factors for cardiovascular disease, hypertension and diabetes mellitus in more than 8000 **urban, semi-urban and rural population** in and around the area and identifying factors specific to South Indian population that might be contributing to such diseases.

   This called for deeper studies on such factors as lifestyle, environmental, nutritional and genetic factors with special reference to how endovascular changes were seen in association with lifestyle diseases. The Center for diseases related to lifestyle modification and their prevention was the result and was inaugurated in June 2012.

   Mentioned as the nine cardinal objectives of the Center are: **Epidemiological studies**, the role of holistic intervention in the prevention of diabetes, the role of traditional medicine in the treatment of these conditions, assessment and appropriate intervention of vascular stiffness, assessment of the relation of nutrition and the existence of food insecurity, evaluation of the relation of air pollution, genomic study and finally creation of a heart failure Registry.
The **PURSE HIS Research** team of SRU works in close collaboration with village and Taluk administrators, health workers and social workers of the Government of Tamil Nadu. The Center operates from its clinics and administrative office located in the Central Research Facility and is supported by investigational and laboratory services and logistics support to transport participants in the study between the Center and their homes.

A large amount of data has already been generated and subjected to rigorous statistical analysis. It is expected that the Center will be able to bring out cardinal information relating life style diseases to several contributory factors with particular reference to South Indian population.

The institutions that have shown a keen interest and collaborate with the Center include Tufts University, Boston, USA, Cambridge University, UK and the Center for Cellular & Molecular Biology (CCMB) Hyderabad,

2. **Sri Ramachandra Center for Indian systems of Medicine – Quality Assurance & Standardization.**

   **Coordinators**
   Prof. S.P. Thyagarajan, Professor of Eminence and Dean (Research)
   Prof. D. Chamundeeswari, Principal, College of Pharmacy.

   The National workshop on “Standardization of Traditional Medicine for global acceptance as per WHO guidelines” held at Sri Ramachandra University in May 2005 attracted many researchers from other institutions and industries to approach SRU facilities especially the Herbal and Indian Medicine Research Laboratory (HIMRL) of the Faculty of Pharmacy, Centre for Toxicology and Developmental Research (CEFT) and the department of Medicinal Chemistry for their project works.

   The Center was started with the following **objectives**:

   • To Standardize and scientifically validate classical Siddha, Ayurveda formulations/Drugs
   • To provide training for undergraduate and postgraduate students of Siddha and Ayurveda Medicine in validation and standardization of AYUSH Drugs
   • Documentation and publication of traditional medical knowledge
   • To provide testing and certification of AYUSH drug formulations developed by industries
   • To conduct R&D projects funded by industries and funding agencies
Collaborators of the Center include: Dr. Mayiswaran, Managing Director, M/S Rumi Herbals Pvt Ltd., Dr. B. Arvind Shah, Managing Director, M/S Arvind Remedies Ltd., Mr. A. Vellayan, Chairman, EID Parry (India) Ltd., Dr. B. Unni Nair, Department of Chemical Laboratory, CLRI, Chennai., Prof. Samir Bhattacharya, INSA Senior Scientist, Visva Bharati University, Santiniketan, Prof. Mihir. K. Chaudhuri, Vice Chancellor, Tezpur University, India and Dr. Soumitra Deb, Chief Research Manager, M/S. East India Pharmaceutical Works Ltd. Kolkata.

The SRU team is drawn from several departments that include Microbiology, Pharmacy and Biochemistry.

The Center has several ongoing and completed research projects (Total fund of Rs.6.94 Crores) from various funding agencies of Government of India and other R&D centers. These include: Drugs and Pharma Division-DST (Rs.119.902 lakhs) in collaboration with Rumi Herbals Pvt Ltd [2005 to 2008], Drugs and Pharma Division-DST (Rs.118.673 lakhs) in collaboration with Arvind Remedies Pvt Ltd [2006 to 2009], EID Parry (India) funded project (Rs. 7.21 lakhs) [2009], AYUSH - Extra Mural Research (Rs. 25.39 lakhs) [2008 to 2011], SERC Division-DST (Rs. 114.250 lakhs) in collaboration with CLRI-Chennai [Ongoing - 2008 to 2013] and Drugs and Pharma Division-DST (Rs. 250 lakhs) in collaboration with East India Pharma, Visva Bharati University, Kolkatta [2012 to 2015]

The Center has 43 papers published in international and 7 papers in national journals and one patent application filed.

The future plans of the Center include AYUSH accreditation to evolve it as the AYUSH Center for Indian System of Medicine-Quality Assurance, taking part in the global network of research on complementary and alternative systems of medicine and to encourage and develop entrepreneurship skills among the students and to help them establish small scale enterprises.

   Coordinators:
   Dr. R. Suresh, Professor of Periodontology and Implantology, Sri Ramachandra Dental College
   Dr. Sarah Kuruvilla, Professor & Head, Department of Pathology, SRU
   Dr. S. Arumugam, Professor and Head, Department of Arthroscopy & Sports Medicine, SRU.
The Center was established with the objectives of creating autogenous stem cell lines and assess the differentiation potential and developing scaffolds of different mechanical nature for functional tissue engineering research.

The Center has attracted several national institutes to enter into collaboration: IIT, Madras, Sri Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, CLRI, Chennai, Nichi-In Center for Regenerative Medicine (NCRM) Chennai and LifeCell, Chennai.

One of the research projects of the Center, ‘Chondrocyte culture on 3D Collagen Scaffold and their Characterization’ has been completed and two projects, ‘Chondrocyte culture on 3D thermoreversible polymer gel’ and ‘Chondrocyte culture on 3D Collagen Scaffold and their Characterization in vitro and in vivo’ are ongoing. In addition, the Center is involved in three projects for the department of Periodontology, SRU: ‘Preparation of nano scaffold & assessing the mechanical properties’, ‘Identification of mesenchymal stem cells in gingiva’ and ‘3-D architecture of PRF: a SEM study.’ Between 2008 and 2012, the Center has been able to get 19 papers published in indexed journals, five posters and eight oral presentations in national and international conferences.

4. Sri Ramachandra Center for Biomedical Nanotechnology
Coordinator
Dr. Ganesh Venkatraman, Associate Professor, Department of Human Genetics, SRU
Dr. Ganesh Venkatraman is assisted by faculty from the departments of Radiology & Imaging Sciences, Conservative Dentistry, Microbiology, Human Genetics and College of Pharmacy.

The short term objectives of the Center include: Establishing synergy with technology-based research institutes for development of novel nanomaterials for healthcare applications, harnessing the potential of nanotechnology in medicine as well as developing multi-functional targeted devices to cancer cells, imaging agents for cancer detection and novel nano-sized agents for application in Dentistry & Orthopedics

The predominant long term objective of the Center is to develop core strengths in synthesis, characterization and healthcare need-based nanomaterial development. The Center will also strive to carry out world-class research at both fundamental and applied levels into the synthesis, characterization and application of various nanomaterials, provide research training to physician scientists and establish close
research linkages with leading international groups both in academia & industry, thus helping to position Sri Ramachandra University as a leader in this emerging field of nanomedicine.

Sri Ramachandra Center for Biomedical Nanotechnology has **6 ongoing projects in collaboration** with the International Center for Genetic Engineering and Biotechnology (ICGEB) New Delhi, Indira Gandhi Center for Atomic Research (IGCAR) Kalpakkam, Anna University, Chennai and the University of Madras. In addition, the Center is involved in an industrial collaboration project with Resil Chemical Private Limited, Bangalore. Two of the postgraduate students in the department of Human Genetics have also completed PG research projects on nanotechnology in 2011 with assistance from the Center.

In the last two years, there have been four publications in peer-reviewed journals from the Center and five presentations in conferences.

The future plan is to develop this as a potential center of excellence through extra mural support from the Ministry of Science & Technology.

5. **Sri Ramachandra Center for Pre-clinical and Translational Medicine and Research.**

   **Coordinators**
   - Prof. S. P. Thyagarajan, Professor of Eminence and Dean (Research) SRU.
   - Prof. S. Thanikachalam, Director and Chairman, Cardiac Care Center, SRU.

The Center has been established with the primary **objectives** to conduct specific R & D programs in Drug discovery and Translational Medicine in collaboration with industry partner(s) keeping in line with the thematic focus of the center and to train, develop and certify capacity building & manpower in drug discovery and Translational Medicine in an Industry-Medical Academia Infrastructure. The secondary objectives include promoting ‘Bench to Bedside’ research protocols ranging from basic biology, preclinical in vitro and in vivo research, clinical studies involving clinical pharmacology and clinical trials for in-house and industry-developed drugs, pharmaceuticals, nutraceuticals and cosmeceuticals and facilitating preclinical testing of novel devices leading to future medical translational applications, institutional collaborations to throw open a vista of opportunities for exchange of scientific knowledge and technology that would augment SRU’s scientific output for the benefit of the society at large and publication of research results in international journals with high impact factor, alone or in collaboration with other institutions.
The collaborators in this endeavor include: Indian Institute of Technology, Chennai, Anna University, Chennai, Central Leather Research Institute, Chennai, Sathyabama University, Chennai, SSN Engineering College, Kalavakkam, Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, National Centre for Biological Sciences (NCBS), Bangalore, Centre for Cellular and Molecular Biology (CCMB), Hyderabad and National Institute of Epidemiology (NIE), Chennai.

The participating departments and personnel include the departments of Cardiology, Microbiology, Pharmacognosy, Research Officer and Veterinary Officer of CEFT, Departments of Pharmacology, Pathology and Human Genetics, Medicinal Chemistry and the appropriate clinical departments.

   Coordinator
   Dr. S. Arumugam, Professor and Head, department of Arthroscopy & Sports Medicine, SRU

   The Center was envisaged based on the recognition of the need for a dedicated center that comprehends and strives to optimize the sporting performance and health of all Indians through the application, execution and dissemination of science. This was mentioned as the avowed mission of the Center for Sports Medicine. It is a recognized fact that India has a lot of potential in the field of sports; but lacks success at top level.

   The objectives in establishing a state-of-the-art sports medicine facility are: To lay the foundation for the scientific assessment and enhancement of sports activities in the country by providing facilities and opportunities for consistent and rigorous scientific training of very high order, to focus on capacity building and acquire expertise in the specialty of Sports Medicine, to generate trained manpower in the discipline and promote sports science-oriented applied research.

   The planning of infrastructure, training and research protocols were carried out with consultative collaboration with Sports Science experts of the University of Cape Town, South Africa. Construction work for the dedicated Sports Medicine Center (100,000 sq ft) in the campus has already been started and the Center will have the following facilities: Fully air-conditioned 200 sq mts Indoor Swimming pool, Jogging Track, High performance fitness facility, Biomechanical lab, High speed 3D motion analysis, Ergometric Rehabilitation Facility, Class rooms & Library.
and Consultation Rooms. In addition, facilities for arthroscopy management of knee, shoulder, hip, ankle and elbow joint injuries and affections will be provided.

**Bio-skills lab** for imparting surgical skills with fresh frozen cadavers has been established. A Faculty : Trainee ratio of 1:3 has been ensured. This was considered necessary as the Center introduced for the first time in the country a three-year **MD program in Sports Medicine** in 2010, approved by the Medical Council of India. In addition, a **B.Sc in Sports and Exercise Science** has also been introduced. In running these programs, SRU has established a twinning arrangement with the University of Cape Town, South Africa.

In the area of **research**, chondrocyte culture and development of a collagen scaffold with optimum biological and mechanical properties to allow growth and proliferation of cartilage cells has been taken as the core area of research by the Center. This is a DST and DBT-funded project with a grant amount of Rs. 70 lakhs.

The University believes that with commitment and perseverance and with the help of national and international expertise, it is possible to elevate the Center as Sri Ramachandra Institute of Sports Sciences in the near future. It is also hoped that the Center will go a long way in identifying and training potential athletes in our country and achieve at least one Olympic Gold Medal for India in the not distant future.

7. **Sri Ramachandra Center for Health Professional Education & Faculty Development.**
   **Coordinator:**
   **Prof. P. V. Vijayaraghavan, Dean Education & Professor of Orthopedics, SRU**

The **Medical Education Unit** started functioning in the University in 1997 and grew from strength to strength with assistance from Harvard Medical International with its expertise in educational technology and faculty development programs. Recognizing the contributions of the MEU, the Medical Council of India identified it as one of the **Regional Centers for Medical Education and Faculty Development** in the country and subsequently elevated it as a **Nodal Center**.

The accomplishments of the MEU prompted other Faculties in Sri Ramachandra University like the Faculty of Dental Sciences, Pharmacy and Allied Health Sciences to start Education Units of their own with a view to strengthen their efforts in educational planning, curriculum reforms and Faculty Development.
Recognizing the importance of fostering this vital area, SRU created a Deanship for Education in 2010 and established the Center for Health Profession Education & Faculty Development in the University so that the expertise gained over several years could now be consolidated and made available for all the Faculties in SRU.

The objectives of the Center are:

- To create state of the art, centralized infrastructure for an Education Centre for the whole University.
- To create an organization structure for the successful implementation of curriculum and faculty development
- To create trend-setting postgraduate programs in Medical and Health Sciences Education Technologies
- To create a state of the art Medical Information Centre
- To encourage qualitative and quantitative research in Education
- To facilitate and sanction faculty development programs in all the constituent education units.
- To facilitate curricular reforms in all the healthcare related programs of the University
- To introduce and sustain use of information and computer technology in the entire university and educational programs; both undergraduate and postgraduate
- To enhance competence and capacity building in education technology amongst faculty in all the constituent colleges.

The activities of the Center presently include: Organizing Faculty Development Programs, curriculum reforms and development, research projects taken up by members of the Medical Education Unit, identifying and deputing faculty to register for and complete recognized programs on education like the FAIMER Fellowship & NITC Workshops and to attend national and international conferences on education and faculty development as well as setting up skills labs and structured OSCE stations.

The ongoing education-related research projects include: Evaluation of Curricular Design for imparting attributes of professionalism in Medical Education, Remedial Program for under-achieving preclinical undergraduate students and effectiveness of case-based learning in the integrated preclinical MBBS curriculum introduced in 2006-2007.

8. Sri Ramachandra Center for Global Collaborations.
   Coordinator:
   Dr. S. Rajendiran, Professor of Pathology, SRU.
The Center was established with the **objectives** of bringing all the pre-existing and new global collaborations of various constituent units and services of SRU under one umbrella and to create a single window system to streamline and facilitate operational elements of the Sri Ramachandra University’s Global relationships in educational and research activities.

The Center will be chaired by the Vice Chancellor of the University and will be coordinated by the member secretary assisted by ex-officio and regular members representing the constituent units. Requests for inter-institutional collaborations forwarded by the Deans, Principals and Course Chairpersons will be discussed and scrutinized by the Center in its monthly meetings and forwarded to the Advisory Board. Appropriate agreements will be signed after formal endorsement by the Advisory Board and approval by the Chancellor of the University.

SRCGC will collect feedbacks on the effectiveness of the collaborations/MoUs with various institutions and universities and will keep the Advisory Board informed of their progress on an annual basis. The information will form the basis for the University’s appraisal of the effectiveness of the collaborations and make individualized decisions to continue, strengthen or discontinue the partnership.

9. **Sri Ramachandra Center for Healthcare Quality and Patient Safety.**

**Coordinator:**

Dr. Mahesh Vakamudi, Professor & Head, Department of Anesthesiology & Critical Care, SRU and Chief Operating Officer, Sri Ramachandra Medical Center.

Spending more than 50,000 hours per year on instruction and training of more than 800 clinicians, nurses and other employees, successful outcomes following three quality team visits (both national and international) between 2009 and 2012 and induction of 14 committees and 17 teams with a combined strength of over 350 members – these were no mean achievements in the history of Sri Ramachandra Medical Center. The University felt this called for establishment of a dedicated center for healthcare quality and patient safety and more importantly, for sustenance of the lessons learned and dissemination of quality messages in an enduring learning environment.

The **goals** of the Center are:
• Develop policies, plans, guidelines, manuals and SOPs for the Medical Centre.
• Promote using best practices which are evidence-based, thus achieving reduction of complexity and continuously improve care.
• Analyze and initiate Corrective And Preventive Action (CAPA) for critical incidents, near-miss & sentinel events.
• Create an atmosphere of learning and sharing responsibility, experience and expertise.
• Sponsor key personnel to attend external conferences, conduct workshops with external peers, paper presentations, publications etc
• Ensure compliance with all relevant legislations and regulatory requirements.

The Medical Center has consistently followed the practice of nominating **Quality Improvement and Patient Safety Team (QIPST)** & Core Team member for every clinical and non-clinical unit. Other important steps included developing validated quality indicators to meet **Joint Commission International (JCI)** and **NABH** accreditation standards with 248 indicators to be used by the clinical & non-clinical departments and using Random Data Validation Audits annually for all **Quality Indicators** by cross dept teams.

A list of **quality audit measures** undertaken in 2012 for example, included:

- Number of Open Audits : 16 Sample size : 100-120 case sheets/Audit
- Number of Audits on ‘Look Alike Sound Alike’ (LASA) policy: 19 sample size 80-100 (This relates to medication safety)
- Number of audits on High Alert Medication : 32 Sample Size : 130-150
- Number of Infection Control Audits : 12
- Number of Patient Tracers : > 250
- Number of Dash board audits : 12 Sample size : >100 case sheets per audit (Includes: Nursing care plan compliance, pain score compliance, critical result reporting, transfer form compliance, IPSG, IV therapy)
- Number of Root Cause Analysis Conducted: 23
- Number of Strategic Improvement Action Plans devised : 78

The Center has followed a **Plan-Do-Check-Act (PCDA) model** in propagating and maintaining sustained quality practices in the Medical Center. As an example, as part of hospital infection prevention & control strategy, the PCDA steps would involve: Plan hand hygiene awareness week, encourage personal responsibility, organize posters, LCD display, SMS campaigns and conduct further audits; area-wise and personnel-specific, conduct focused sessions on education, questionnaires and ultraviolet detection and individual feedback and re-education. Similar protocols were followed
in the case of other quality indicators like surgical site infections and patient falls. Sri Ramachandra Medical Center won a ‘Special Mention Award’ for patient fall prevention program at the International Congress of Patient Safety – Best Practices for Asia: HICC, Hyderabad in April 2011. Similarly, by following rigorous steps to ensure quality measures, root cause analysis and corrective measures, significant reduction in the time taken by the patient in the Emergency Room, as well as the average admission and discharge times have been brought down significantly.

The Center recently introduced ‘Lean Management’ principles, and has been able to record significant gains in several quality indicators. This involved re-engineering of 127 process flows and creation of balance score cards for 11 departments. The Center has recorded a reduction in Turn Around Time (TAT) to 20 minutes from the earlier 120 minutes and an increase of patient satisfaction feedback by 20% over a two-year period (2009-2011).

Based on its experience, the massive amounts of data generated and the many positive achievements recorded, the Center has planned to introduce a certificate course in Healthcare Quality & Patient Safety in the near future.

10. Sri Ramachandra Center for International Patient Care & Services.

Coordinator
Dr. K. Balaji Singh, Professor of Surgery & Associate Dean (Students) SRU.

The number of overseas patients seeking consultation, medical and surgical treatments in Sri Ramachandra Medical Center has shown a consistent and noticeable increase between 2008 and 2012. The International Patient Care department had registered 389 patients in 2008 but this number rose to 1427 in 2012. This necessitated the organization of its services under a dedicated Center with appropriate leadership, personnel and facilities.

The Center will endeavor to provide optimum services to patients in the three stages of pre-hospitalization, hospitalization and post-hospitalization in addition to ensuring the quality of care and patient safety issues. The pre-hospitalization services include: Information on the availability of services at Sri Ramachandra Medical Center, preliminary estimation and treatment plans, assistance on procurement of visa and travel plans and facilitation of pick up and transport to the Medical Center from Chennai Airport. Services extended during hospitalization include facilitating admission directly to the patient’s room, immediate assessment by the primary physician and final estimation & treatment plans. Ancillary services include translators for Arabic, Khurdish, Suhali, Urdu and several regional languages, Arabic TV channels.
in the room, free Wi-Fi facilities and other special needs like Arabic cuisine. Post-hospitalization services include travel arrangements and drop to Chennai Airport as well as follow up plans, tele-consultation etc.

The Center recently opened a coordinating office in Muscat, Oman, to facilitate patient referrals and received a 2-lakhs grant from the Ministry of Health for every participation in international healthcare forums. The Center uses the Pan-African e-Network in the Tele-Medicine department for tele-consultations.

In addition to consultations and sophisticated medical treatments, the Center has facilitated several surgical procedures like bariatric surgery, bone marrow transplants and Orthopedic operations.

An MoU with the Ministry of Mauritius has been signed recently to facilitate patient referrals, consultations and treatment at Sri Ramachandra Medical Center.

11. Sri Ramachandra Center for Perinatal Health (SCOPE)
Coordinator
Dr. P. Ramachandran, Professor of Pediatrics, SRU

The goal of the Center is to contribute to the national efforts in reducing Perinatal Mortality Rate by establishing higher standards of perinatal care, strengthening awareness in the community on the methods to prevent, diagnose and manage perinatal problems and promoting capacity building, training, education and research in perinatology. The Center was inaugurated in October 2012 with Dr. Dharmapuri Vidyasagar as the Director, Dr. Ramachandran as the coordinator and Dr. Binu Ninan, Professor of Pediatrics and Neonatologist, SRU as the secretary. The services of Dr. Suresh, Director, Diagnostic Scan Center, Chennai, as Visiting Professor will be available.

The three participating departments will be Obstetrics & Gynecology, Neonatology and Fetal Medicine. The Center will offer its services to women in the preconception stage and to pregnant mothers, neonatal care of the new born, and follow up services including lactation counseling.

The ongoing research projects of the Center are: ‘MRI in preterm and long term outcome/placental examination in preterm and long-term outcome,’ ‘Cord Interleukin-6 levels in preterm babies and long-term outcome’ and an operational research – ‘Impact of BNCRP in reducing the IMR and NMR,’ applied for Obama-Singh knowledge Initiative Grant, 2013.

The Center is involved in training sessions in the Community on basic & advanced Neonatology. Phase 1 involves partnering with IAP on basic care of the newborn, on
training of Health workers in all districts of Tamil Nadu, requested by Department of Public Health and Preventive Medicine and training of health workers in maternity homes (1358 trained in the last 6 months)

**Phase 2** will focus on partnering with NNF on acute care training of at-risk neonates and involve regional training in neonatology: Training of Medical Staff and Nurses in advanced Neonatology as requested by Rajiv Gandhi Government Women & Children Hospital, Pondicherry and training of nurses in maternity homes.

Future plans of action include:

- In the next two years
  Perinatal service to the community including Obstetric transport, Establishment of regional metabolic and genetic laboratory, Perinatal autopsy with laparoscope, DM and Fellowship programs in Neonatology, Training of healthcare workers in basic & advanced Neonatology (TN & Pondicherry) and Clinical trials in single & multiple centers.
- In the next five years
  Developing expertise in fetal therapy and developing regional neonatal database with CMC Vellore and JIPMER, Pondicherry.

**Observations**

- The coordinators’ power-point presentations of the 11 Centers required intense focusing and concentrated attention for almost two hours. It is obvious that some of the Centers like the Center for diseases related to lifestyle modification and their prevention, the Center for Pre-clinical and Translational Medicine Research, the Center for Health Profession Education & Faculty Development and the Center for Healthcare Quality & Patient Safety have had ample time to get established and demonstrate consistency and strength before national and international agencies. Some of the other Centers like the Center for Sports Medicine, International Patient Care Center and the Center for Perinatal Health are newer ventures but nevertheless look no less promising. If the momentum and enthusiasm of the former are anything to go by, it is only a matter of time before the latter catch up with them in excellence and best practices.

- If the 11 centers continue the present commitment and dynamism, it would not be difficult for Sri Ramachandra University to scale the lofty heights of achievement in
academic, healthcare, research and extension activities mentioned in its Vision 2025 Statement.

The Internal Quality Assurance Cell (IQAC)

The IQAC was established in September 2009 as a quality sustenance mechanism following the declaration of accreditation of Sri Ramachandra University (Grade A with CGPA of 3.52 in a 4-point scale) by NAAC in January 2009. The proclaimed vision of IQAC in SRU is to ensure high operational standards in all its academic and administrative activities. The key points laid down as the IQAC’s mission are:

- Facilitating regular update of knowledge by the staff
- Improvement of learning resources
- Enhancing communication and soft skills
- Encouraging publications
- Obtaining feedback
- Developing quality benchmarks
- Information dissemination
- Documentation
- Optimization

The IQAC team was re-constituted following the appointment of the new Vice Chancellor in February 2012. General Body meetings were held in September 2009, May 2011, January 2012 and August 2012. Deliberations and decisions in these meetings involved identification of thrust areas, analysis of the feedback and follow up measures and quality measures to be implemented in the hospital. The IQAC decisions also included steps to be taken for the preparation and approval of the Annual Quality Assurance Reports (AQARs) and organizing quality awareness workshops annually.

The University submitted AQARs in a timely manner (May 2010, May 2011, December 2011 and June 2012 with an additional report on ‘Best Practices’ on PRODEV in August 2011) and implemented several quality measures in the ensuing period. These included 3-yearly rotation of leadership in the departments to allow newer suggestions and ideas to percolate into the quality scheme, implementation of Academic Performance Indicators, expansion of class rooms and demonstration rooms, initiation of value-added programs, promotion of research among undergraduate students and measures for e-governance.
The IQAC holds two University level meetings every month to foster sustenance of the pace of quality-related work. Accordingly, online student feedback format was finalized, publications analysis of the university using data bases (Scopus, WOS, Embasse, Google Scholar) was completed, programs for the quality workshops with funds from NAAC were finalized and anti-plagiarism software to assess research articles procured.

The IQAC was able to assist other bodies and departments in the University in several areas. These include helping with introduction of integrated curriculum for dental courses, developing publications analysis and student satisfaction indices for 2010 and 2011, preparing Self Study Report to be submitted to NAAC in 2013, creating online student feedback system, organizing IT skills training for faculty and staff, dissemination of information on the newly developed Academic Performance Indicators, developing a SWOC analysis format for the University and initiating maintenance of Shodhganga Repository of theses and dissertations.

Two conferences/seminars were organized by IQAC on quality in education and research in the last two years. The State-level conference ‘Quality indicators for teachers’ funded by NAAC was held in August 2011 and the two-day national seminar and workshop ‘Quality sustenance in research publications’ funded by NAAC and ICMR was held in June 2012. The IQAC coordinator added that both these events attracted more than two hundred delegates.

Dr. P.V. Vijayaraghavan, Dean (Education) and Dr. D. Chamundeeswari, coordinator IQAC, attended the Asia Pacific Quality Network Conference held at Bangalore from 2nd to 4th March 2011 and presented a report on the proceedings to IQAC.

The IQAC coordinator finally added a brief account of the plans to create the Academic and Administrative Audit Committee and to complete preparations for the Committee visit in February 2013 as a prelude to submitting the Self Study Report to NAAC in 2013 for re-accreditation of the University. She enumerated the several steps involved in the process:

- Identifying coordinators across the departments
- Sensitization of coordinators and university officials
- Training of coordinators about the system of data entry
- Verification of data
- Guidelines for preparation of self study report
- Completion and finalization of Self Study Report
- Planning for AAA Committee visit.
Observations

- The IQAC was able to make its presence noticed by the Faculties and departments across the institution slowly at first but has succeeded in establishing itself in more definitive and unambiguous terms.
- The IQAC has been able to effectively coordinate quality initiatives in the University and document the activities in a timely manner. These have been consolidated as Annual Quality Assurance Reports and the Report on Best Practices, and shared amongst the faculty and staff and communicated to NAAC after formal approval by the Board of Management.
- The two workshops/seminars organized by the IQAC in the last two years and the participation of the IQAC coordinator and Dean of Education in the recently held Asia Pacific Quality Network Conference at Bangalore highlight the Institution’s commitment to take quality issues to higher levels of achievement.
Criterion V: Student support and progression.

Several steps the University has taken in the last five years to enhance student support facilities were described by the IQAC coordinator. These included expanded infrastructure and other facilities to keep pace with the academic growth of the institution – like lecture halls, laboratories, clinical teaching facilities (both out-patient and in-patient facilities), library, research and medical records facilities, mortuary, more computers with Internet connectivity for student use in the Active Learning Centers, clinical skills labs in several departments, enhanced facilities for the activities of the Education Units and the IQAC and the ongoing expansion of hostels and staff quarters. The master plan for the augmented infrastructure was placed before the Committee.

No additional measures in physical infrastructure to meet the requirements of differently-abled students were noted in the plan.

The earlier mechanisms to communicate to students the vision, mission, goals and objectives of the institution and the courses they would be completing are continued through the University’s website and publications like brochures, updated Student Manual and manuals prepared by departments. The Student Manual includes details regarding ‘UGC Regulations on curbing the menace of ragging in higher educational institutions 2009’ along with information on the Grievances Committee and the Gender Issues Committee. The office of the Controller of Examinations has updated its manual on the rules and regulations and conduct of internal assessment and university-level examinations. The practice of conducting orientation programs at University and Faculty levels continues with modifications as in the case of other support measures such as provision of computer skills and help with development of English language skills.

Mentorship

Two other steps include the recent introduction of Longitudinal Mentorship in place of the mentorship program practiced earlier. Here the students choose their own mentors from the first year of the program. The mentors are responsible for taking care of the academic and social needs of the students in addition to providing personal counseling and communicating with their parents if and when needed. The faculty development programs train the teachers in identifying special learning difficulties and hidden potentials in students. The new mentorship program allows the mentors to provide continuous support and mentoring longitudinally to the group of students under their care throughout the period of their stay in the course/University.
The University introduced changes recently in calculating the **Student Satisfaction Index** as a valid feedback on the student support measures provided by the University. The **student counselor** and the University officials make special efforts to maintain confidentiality of the psychological counseling and documentation processes. Added efforts are made to help overseas and NRI students. The Manager Public Relations & International Students looks into their special needs and problems.

The other major step is the recent appointment of two **Associate Deans for student affairs** with the responsibility of focusing on specific concerns and needs of the students. SRU hopes this would facilitate a more coordinated approach in identifying students’ concerns and providing effective and timely solutions as well as bringing the University’s student support measures under a more comprehensive oversight mechanism.

The University has mechanisms in place to minimize **dropout** of students from the courses. All constituent colleges organize remedial and supplementary classes for the failed students in various semesters. Internal assessment tests are conducted at periodic intervals and performance details are shared with the student. Separate instructional sessions are held for slow performing students in the Dental College with emphasis on ‘must know’ topics. The Dental College has also constituted a ‘**Students Academic Performance Committee**’ with one faculty from each department to help students with poor attendance in clinical and theory sessions. These measures are complemented by confidential self-improvement counseling if required.

In answer to a question about the outcome measures of the **integrated curriculum for the MBBS program**, the Dean of Education described the findings on the analysis of student progression under the new curriculum. The study conducted by the Medical Education Unit showed that although the overall pass percentage levels remain the same, a larger number of students have been able to reach up and achieve higher performance levels in the knowledge, skill and attitudinal domains after introduction of the integrated curriculum in 2006-2007.

The Dean (Education) made a special mention of the **PRODEV professional development course** conducted in the 6th semester in which students are exposed to knowledge and skills beyond the curricular boundaries. Senior clinicians conduct interactive sessions highlighting the role of skills like communication skill, empathy and ethics and stress on environmental, social and spiritual determinants of health and disease, beyond what is mentioned in the conventional biomedical model. The curriculum for the PRODEV module was revised in 2011.

Although as a deemed-to-be university, it is not mandatory for SRU to follow regulations on proportional distribution of social groups in student recruitment, an overall viewing of the socio-economic profile of the student population reveals a
noticeable proportion of students belonging to SC/ST/OBC categories. The proportion is significantly higher in the Faculties of Nursing and Allied Health Sciences.

**Hostels**

SRU has separate hostel facilities in the campus for men and women students. The total number of rooms available is 2436 with 1637 rooms distributed in 10 blocks in Ladies hostels and 856 rooms in 7 blocks in Gents hostels. Currently 1321 men students and 854 women students reside in the hostels. Students are provided with single or shared accommodation as per their choice. Separate hostel facilities with air-conditioned rooms have been provided for NRI students. The hostel rooms are spacious and well-ventilated with adequate privacy and amenities for comfortable stay, undisturbed study and dining facilities in well laid-out dining halls. The other facilities include: Study Hall, Reading Hall, TV rooms, Guest rooms, Indoor games and fitness center, intercom facility etc. Each hostel block is supervised by an assistant warden and support staff to ensure student’s security and comfort.

The University has recently added two new hostel blocks for postgraduate students: with 336 rooms for Ladies and 368 rooms for Gents.

**Student Council, student participation in extra- and co-curricular activities**

The Student Council is a nominated body and is funded by the University. Student members are chosen on the basis of their academic performance and co-curricular and extra curricular skills. The Dean of Faculties highlighted the several activities of the Student Council like the annual student Magazine ‘Caduceus’, the Newsletter ‘Fifteen Minutes’ and the Wall Magazine ‘Influenz.’ Student representatives participate in the proceedings in many of the committees like the Curriculum Committee, IQAC, Library Committee, Anti-ragging Committee, Education units etc. The students participate actively in all the health camps, blood donation camps and other community and extension activities organized by the University. A notable student initiative ‘Med Hope Foundation’ committed to provide financial support and medical assistance for children with leukemia and blood-related malignancies is successfully functioning for the last three years.

Another notable change pointed out was the increasing participation and fine performance of SRU students in several intra- and inter-institutional academic, cultural and athletic activities. The annual cultural and athletic events are organized in the campus with great enthusiasm, pageantry and discipline. The University’s newsletter ‘Bridges’ records their participation and contributions in many of the regular campus activities like the monthly book review, humor club, debate club, quiz club, etc on a regular basis.

SRU students do not participate in NSS or NCC activities.
The University has established the ‘SRU E-Cell’ with the objective of propagating the importance of developing entrepreneurial skills and familiarizing the students with entrepreneurial principles and methods. More than 15 events including guest lectures and motivational talks were organized in the last five years by the Faculty of Management Sciences under the banner of the National Entrepreneurial Network (NEN) with student participation from several departments.

The practice of cash awards and scholarships for meritorious students continues. From 2010, such cash awards have been introduced for students in the Pharm D program also. The Chancellor’s Summer Research Fellowship grants were introduced in 2011 to encourage undergraduate students to participate in research projects. A total of 60 students representing various Faculties have come forward in the last two years to avail of this opportunity.

The University has introduced several interdisciplinary, value-added, and career advancement courses. The MD/MS/MDS-Ph.D. program with support from ICMR introduced in 2009 is the most notable among these. Students from several departments have participated in value-added certificate courses like BLS, ACLS and PALS carrying certification by international agencies like the American Heart Association (AHA). Other examples include the CITI-India online course on Research Ethics carrying CITI certification (University of Miami) and the Certificate Course in Orthopedic Manual Physiotherapy (COMPT). Many departments have prepared modules for interdisciplinary value-added courses yet to be introduced.

Success rates of students in the undergraduate and postgraduate University examinations have remained consistently high (62 – 100 %). The recorded pass percentage and distinctions are on par with other institutions in most disciplines. The University has instituted several medals and other awards to encourage excellence in academic performance.

The proportion of students progressing to higher studies varies with the Faculty. About 90% of students in the Faculty of Medicine and 65% students from the Faculty of Dental Sciences proceed to postgraduate studies. The percentage of students progressing to postgraduate studies and Ph.D. programs in the Faculties of Nursing, Pharmacy, Physiotherapy and Allied Health Sciences has also shown an upward trend.

The Placement Cell of the institution (placementcellsru@gmail.com) has recorded job placement figures for the graduates. Each of the colleges in the University has appointed a faculty to coordinate with the Placement Cell. Almost all the graduates in the Faculties of Medicine and Dental Sciences are either pursuing postgraduate programs or are employed in hospitals, clinics or in private practice. Almost 100% of graduates in the Faculty of Management Sciences have been placed in jobs in
hospitals, companies or in the health insurance sector. The job placement records of students from other Faculties have been equally encouraging.

The other student support services include free consultation and **health insurance** scheme for undergraduate and postgraduate students, bank and railway and air ticket booking facilities in the campus, **sports and recreational facilities**, language training for students unfamiliar with Tamil and assistance with immigration formalities, visa requirements, money transfer and hostel accommodation for overseas and NRI students.

**Alumni** have played an increasing role in the activities of the University. Alumni from the different faculties have registered their associations and the number of registered members has shown a steady increase over the years. The social networking sites they have established enable constant communications amongst themselves and with their parent Faculty and the University and facilitate organization and participation in many of the educational, healthcare and research activities in the campus.

**One of the alumni from the Faculty of Medicine stood second in the merit list from Tamil Nadu for IAS examination and is currently the Sub Collector of Periyar District.**

The activities of the personal counseling services, the Grievance Redressal Cell and the Women’s Advancement Cell have fostered awareness about personal and gender issues to the forefront and ensured a tranquil academic ambience in the campus predominated by women students.

**Observations:**

- The University has introduced several mechanisms to support curricular, co-curricular and extracurricular activities of the students. The appointment of two **Associate Deans for students** and the longitudinal mentorship program are new initiatives and their effectiveness needs more time to be evaluated.
- Although the overall pass percentage levels remains the same, a larger number of students have achieved higher performance levels in the MBBS program after the introduction of the integrated curriculum in 2006-2007.
- The ‘PRODEV’ professional development program for the MBBS course is unique and exposes students to several ‘soft skills’ beyond the confines of the regular curriculum.
- Student response to the introduction of innovative measures like MD/MS/MDS-Ph.D. program, Chancellor’s Summer Research Fellowship grant, and other value-added courses has been uniformly good.
- Participation of students in community service, health camps and other extension activities is noteworthy.
SRU students do not participate in NSS or NCC activities.

- The contributions of alumni to the institution’s growth and activities have shown a distinct upward trend.

- Records of job placement and other achievements by alumni show encouraging figures. One of the alumni from the Faculty of Medicine stood second in the merit list from Tamil Nadu for IAS examination and is currently the Sub Collector of Periyar District.
Criterion VI: Governance and Leadership

Sri Ramachandra University aims at developing and training healthcare professionals who are locally responsible and globally competent in the areas of education, healthcare and research. The leadership feels this vision has allowed the institution to set its goals and objectives that “foster growth of newer and value-added educational programs, enhancement of the efficiency of learning environment by adopting innovative methods with technological advancement, providing quality healthcare, promoting clinical and basic science research, establishing national and international networks, extending community outreach services and adoption of efficient administrative practices.”

In its Vision - 2025 document prepared soon after completion of the first 25 years of the institution, the University reiterates its ability and preparedness to “emerge as one of the top twenty Medical and Allied Sciences Universities in the South East Asian Region (SEAR) by contributing to high quality Education, Healthcare, Biomedical Translational Research and to the Society.”

The fact that the University has been able to realize its goals and objectives to a commendable extent is evident from the recognitions its educational programs and clinical services have gained since inception; especially in the last five years. The leadership points out institutional accreditation by NAAC in 2009 with Grade A and CGPA of 3.52 in a four point scale as the most vivid testimony for this. This was followed in rapid succession by achievement of a series of other quality benchmarks - both national and international - such as: accreditation of Sri Ramachandra Medical Center by Joint Commission International (JCI) in 2009 and re-accreditation in 2012, accreditation of Sri Ramachandra Blood Bank by American Association of Blood Banks (AABB) and re-accreditation in 2012, re-accreditation of the Clinical Laboratory by NABL in 2012, accreditation of Sri Ramachandra Medical Center by NABH in 2012, ISO re-certification of the departments of Anesthesia, Bioinformatics and Urology in 2012 and continuance of recognition as WHO Collaborating Center for Research & Training in Environmental and Occupational Health of the department of Environmental Health Engineering for five years in 2011. These and many other recognitions of quality benchmarks point to the existence of healthy governance and organizational ethos in the institution.

The leadership continues to provide support for the growth of the institution with particular reference to finance, physical infrastructure and human resources. The steps taken to introduce e-governance, professionalism in feedback analysis and documentation and close monitoring of the programs suggest sensitivity and keenness to move toward a system-based approach in management.
The organizational structure meets the norms and requirements as stipulated by the UGC and other relevant apex bodies. There is evidence of **effective decentralization** and delegation of responsibilities. The institution has **clearly defined operational guidelines** to plan the agenda and hold meetings of the administrative bodies like the Board of Management, Planning and Monitoring Board, Finance Committee, Academic Senate, Medical Staff Executive Committee, Recruitment and Promotions Committee, Boards of Studies, Board of Research Studies, Institutional Ethics Committee, Departmental Committees and the several subcommittees. Reporting mechanisms and communication of administrative decisions follow well defined pathways in the organizational hierarchy and the culture of participatory management in which the views of employees and students are valued, is evident. Formal and transparent mechanisms are in place to manage matters like salaries & allowances, appointments & promotions, loans, health insurance, scheduling of internal assessment and University examinations and declaration of results.

Establishment of the **Internal Quality Assurance Cell (IQAC)** and strengthening of the activities of the **Medical Staff Executive Committee (MSEC)** were carried out after the University was accredited by NAAC in 2009. The MSEC with its several subcommittees has oversight responsibility for ensuring quality of patient care and safety. **Quality Improvement and Patient Safety Team (QIPST)** coordinates the quality initiatives and reports to the MSEC. The Vice Chancellor attends the monthly meetings of the MSEC as an ex-officio member, thus providing an effective mechanism to integrate quality initiatives in education and research with similar efforts on patient care and safety.

Other examples of the University’s efforts to internalize quality initiatives include expansion of the **Institutional Research Committee under four heads** (Clinical Research, Research Ethics other than clinical evaluation of drugs/devices, Institutional Animal Ethics Committee and Institutional Committee for Stem Cell Research and Therapy), establishment of the **Publications Oversight Committee** to ensure quality of research papers and other material submitted for publication from the University and the establishment of several centers of excellence with quality as the benchmark.

The Chancellor participates in all the meetings of the Board of Management, Planning and Monitoring Board, Finance Committee and in many of the MSEC meetings. The University has constituted an **Advisory Board** to appraise the Chancellor of all key decisions. The Advisory Board meets at fortnightly intervals.

The members perused the minutes of the meetings of the statutory bodies summarized in the University’s Self Study Report (February 2013) and reviewed pertinent files and records of the proceedings. There are effective mechanisms for to-and-fro communication of information between departments and the administrative bodies. The heads of departments transmit minutes of monthly department meetings to the offices of the Dean of Faculties and the Vice Chancellor. These are discussed in the Advisory Board meetings.
The University has an ongoing scheme to collect 360° feedback and has systems in place to analyze the data and recommend appropriate corrective measures. The Dean of Faculties explained how this has made computation of student satisfaction index easier.

SRU does not have a Management Information System (MIS) in place yet. The Dean (Research) informed that the institution plans to introduce e-governance in phases. The first phase was completed in 2011 wherein faculty and staff of the University underwent a structured training program in IT skills. Software for installing MIS is being developed in the institution. In the meanwhile, processes related to Finance, Human Resources Management, Central Library, Purchase and Central Stores have been automated. The in-patient management process in Sri Ramachandra Medical Center is automated and is supported by a Hospital Information System. The software being developed for MIS is expected to facilitate analysis and coordination of strategic and operational activities of the institution as a whole and help fine tune the internal coordination and monitoring mechanisms.

The operational details of Annual Performance Appraisal of the faculty have been amended and included under a new format ‘Academic Performance Indicators’ (API) under three headings. This was implemented in October 2011. The Board of Management has also approved adoption of a Performance-linked Incentive Scheme to go hand in hand with the API scheme. This was also implemented at the same time.

Several welfare measures for faculty and staff have been introduced. The University implemented the UGC VI Pay Commission pay scales from September 2008. Welfare measures include provisions for Provident Fund, Gratuity, Group Insurance, Accident coverage, Health Insurance for staff and dependents, staff quarters in the campus, leave benefits like casual leave, earned leave, compensatory leave, sick leave, maternity leave etc., financial support for personal needs, food at subsidized rates etc.

The University has also established clear policies for financial and material support for academic and research activities of the faculty. These include financial support for publication of research papers in professional journals, for attending and presenting papers in national and international conferences, support for hosting continuing professional development programs, seminars, conferences and workshops in the campus and financial support for research activities like the GATE Young Scientist Project Grant and Fellowships for Ph.D. students.

The institution takes pride in the large number of continuing education and professional development programs organized in the campus. These are aimed at skills upgradation and capacity building in leadership and educational and research activities. Three such programs were in session during the AAA Committee visit days.
Faculty attrition rates in last seven years ranged between 4.19 and 18.32%. The HR department placed the figures for this before the members and clarified that attrition was contributed mainly by young faculty members leaving for higher studies, women forced to leave following marriage or husband’s job transfer. The HR department further confirmed that the number of faculty who have served the institution for more than 10 and 15 years shows an increase.

<table>
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<th></th>
<th>Total</th>
<th>Joined</th>
<th>Relieved</th>
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<td>126</td>
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<td>14.38</td>
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<td>Jun 12</td>
<td>763</td>
<td>60</td>
<td>32</td>
<td>4.19</td>
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The visit to the Finance section and interaction with the Chief Financial officer and his staff clarified matters pertaining to financial management and resource mobilization. As a Deemed University under Section 3 of the UGC Act 1956, SRU does not receive any financial support from the Government except for the conduct of research. No donations are received from any quarters. Income through tuition fees, hostel fees, interests on deposits, examination fees, fees from sale of application and registration forms, technical & consultancy fees from research activities are the major sources of revenue.

The Finance section prepares the Annual Budget for approval by the Finance Committee which meets annually. The CFO confirmed that the budget is adequate and there is provision to cover day to day expenses. He added that as the institution has not encountered any occasion of cash loss, the problem of deficit in budget planning has not arisen. Details of budget allocations and Income and Expenditure Statements for the years 2010-2011 and 2011-2012 placed before the members confirmed this.

The accounts are audited regularly. The University practices regular Internal and External Audit processes as part of its compliance with financial discipline. Qualified Internal Auditor from an external resource has been appointed on a permanent basis and the team of staff under him undertakes an exhaustive and comprehensive inspection and verification of all vouchers and transactions carried out in each financial year. The CFO and staff in the finance section confirmed that so far no finding of major concern has been pointed out in the audit reports. Minor errors, omissions or commissions when pointed out during the audit process are complied with immediately. The CFO reiterated that the entire process is carried out as per statutory requirements by duly qualified auditors. The statutory External Audit Reports for 2010-2011 and 2011-2012 were made available for scrutiny.

The financial management system has been computerized. All day to day receipts and payment vouchers, journal vouchers, Books of Accounts like Cash Book, Purchase Day
Book, Students Fees Register, General Ledger etc are covered under the computerized system. The Trial Balance and Balance Sheet are extracted periodically through the computer system.

Some of the Best Practices under Governance and Leadership include the following:

- Active involvement of the leadership in academic and administrative matters
- Effective mechanisms for monitoring student, faculty and staff performance including biometric system for registering attendance
- Participative management system with decentralization and effective delegation of responsibilities
- Mechanisms for quick implementation of administrative decisions, reforms and redressal
- Involvement of faculty and staff in strategic planning for future development
- Amendment of the Faculty appraisal system and implementation of Academic Performance Indicators along with Performance-linked Incentive Scheme
- Human resource management marked by staff welfare measures, incentives and rewards
- Robust financial management system and optimal utilization of budget
- Deployment of e-governance in Central Library, Finance, Stores and Hospital.
- Effective redressal mechanisms for students and employees
- Sri Ramachandra Employee Education (SREE) and Faculty Development Units for professional development

In addition, institutional responses in compliance with the UGC Regulations/Norms/Guidelines 2009-2011 include:

- Implementation of UGC – VI Pay Commission scales from September 2008
- Implementation of UGC Regulations on minimum qualifications for appointment of teachers and other academic staff in universities and colleges and measures for the maintenance of standards in Higher Education 2010
- Adoption of UGC (Institutions Deemed to be Universities) Regulations 2010 Implemented. [The final version of the MOA and Rules of the Deemed University based on the “UGC (Institutions Deemed to Be Universities) Regulations 2010” (with necessary modifications made in view of the interim orders passed in the batch of Writ Appeals pending before the High Court of Madras) submitted to UGC, “without prejudice to our rights and the said Writ Appeals pending before the High Court of Madras.”]
- Revised Ph.D. Regulations implemented in response to UGC (Minimum standards and procedure for award of M.Phil/Ph.D. degree) Regulation 2009
- Development, adoption and implementation of Academic Performance Indicators in October 2010
- Development, adoption and implementation of Performance-linked Incentive Scheme in October 2010
• Implementation of University-level Consultancy Rules
• Follow up action report in compliance to UGC Review Committee Report 2009 submitted to UGC
• Revision work on Service Manual completed in April 2012

Observations:

○ Governance and leadership of the University are aligned with the institutional vision and mission. There is evidence for effective decentralization and delegation of responsibilities.
○ There are effective administrative and financial mechanisms to support academic, research and staff welfare activities that remain sensitive to changing needs and contingencies as disclosed in feedback information.
○ The financial affairs of the University are managed by a competent system with regular Internal and External Audit processes as part of its compliance with financial discipline. The activities of the financial management system are computerized.
○ The institution has successfully completed several expert team visits to the campus and received accreditations from national and international agencies in the last five years.
○ These and the spirit of retrospective analysis and reflection prompted by the celebration of the first 25 years of SRMC & RI has motivated and inspired the leadership to prepare ‘SRU Vision 2025’; a document with strategic action plans to help guide the University in its march towards excellence.
○ SRU has taken the initial steps towards e-governance by completing formal IT training of all its faculty and staff. A comprehensive MIS system for institution-wide application is still not in place.
○ The University has adopted and implemented the UGC-VI Pay Commission Recommendations 2008 and UGC Regulations/Norms/Guidelines 2009-2011.
Criterion VII: Innovative Practices

Sri Ramachandra University has continued its efforts to strengthen quality assurance mechanisms in its academic and administrative systems.

Specific issues related to quality enhancement and reports of the activities of the quality teams are included in the agenda for the meetings of the statutory administrative bodies of the University and their budget requirements, operational steps and outcome measures discussed before formal approval for implementation. The administrative bodies with major decision-making responsibilities are: the Board of Management, Academic Senate, Planning and Monitoring Board, Finance Committee, Board of Research Studies and Boards of Studies. The roles and responsibilities of some of these bodies like the Board of Research Studies have been expanded and additional committees created to support them with increasing recognition of the need for total quality management systems in newer and emerging areas.

The workings of SRU’s Academic Quality Assurance system have been described under three headings:

Quality Assurance Systems
Academic Quality Systems
Student Support Systems

Here again, newer areas for quality assurance have been identified in each domain in the last five years and the system strengthened accordingly.

• Quality Assurance Systems

The Internal Quality Assurance Cell (IQAC) has taken up oversight responsibilities in quality issues soon after its inception in 2009. The IQAC has been able to reach the grass root levels of the University’s academic and administrative systems, collate pertinent data and document institution-wide efforts at quality sustenance and improvement. The IQAC has sent Annual Quality Assurance Reports (AQAR) to NAAC as required and the additional report on ‘Best Practice.’

The Grievances Committee, the Committee for Gender Issues, Journal Committee, Library Committee and the Sri Ramachandra Center for Women’s Advancement have continued their activities and no major comments have been added.

The Credentials Committee and Promotions Committee function under the chairmanship of the Dean of Faculties and meet once every 4 to 6 weeks. They have expanded their terms of reference incorporating greater rigor in the credentials verification process before hiring candidates for academic positions and on deciding on promotions. In 2012, the Credentials Committee held 9 meetings and reviewed the credentials of 85 teachers.
The Promotions Committee reviewed 160 applications passed by the Credentials Committee.

The Journal Committee streamlines publication of Sri Ramachandra Journal of Medicine, a peer-reviewed biannual publication. All the issues for the years 2009 to 2012 have come out.

The main responsibilities of the Library Committee are scrutiny of requests for purchase of books, journals and electronic learning resources for the Central Library and draft recommendations and approval for their acquisition. The Committee also reviews the services and facilities in the Central Library and makes appropriate recommendations. The minutes of the Library Committee’s meetings are filed in the Central Library.

The Sri Ramachandra Center for Women’s Advancement has conducted several awareness and counseling programs and organized thematic events like World Environment Day and held events like nutrition awareness, lactation support and women’s health screening.

The Committees for patient care and safety continue to report to the Medical Staff Executive Committee (MSEC). The Quality Improvement & Patient Safety Team (QIPST) plays a pivotal role in this along with the other 16 committees. The Vice Chancellor attends the monthly meetings of MSEC chaired by the Director of Sri Ramachandra Medical Center as an ex-officio member and thus provides an effective liaison between the academic and patient care activities of the Organization.

The University Advisory Board continues its fortnightly meetings. In 2010 the Board constituted three subcommittees under it to represent academic and administrative matters pertaining specifically to the Faculties of Medicine, Dental Sciences and the other Health Sciences Faculties.

- Academic Quality Systems

The Publications Oversight Committee started functioning in 2011 and was constituted with a view to introduce greater rigor in the quality and authenticity of research papers submitted for publication from the University. The Committee has procured a software that enables routine screening of manuscripts for plagiarism. The Publications Oversight Committee also assists in participation in INFLIBNET Shodhganga national level project for thesis.

The Pharmacovigilance Committee was also established in 2011 with a view to ensure quality and safety in prescription practices and the clinical use of drugs. The Committee oversees the workings of the Pharmacovigilance Center and designs pharmacovigilance forms and adverse drug reaction forms and provides information on safety in drug prescriptions and usage to clinical staff and trainees.
The **Medical Education Unit** has been active in conducting faculty development programs and teacher-training programs and workshops on a regular basis. A significant development was the recognition of Sri Ramachandra Medical Education Unit in 2010 as a **Regional Center** by the Medical Council of India for conducting teacher-training workshops for the faculty in 29 other medical colleges in the region. The Dental and Pharmacy Education Units were started in 2010 and these, along with the Education Unit for Health Sciences Colleges started functioning as a comprehensive department of education under the Dean (Education) also appointed in 2010. The University has created expanded infrastructure and facilities for the functioning of these Units.

The Medical Education Unit constituted a **Postgraduate Curriculum Committee** in 2010 with oversight responsibilities on the quality and conduct of the postgraduate programs. An internally focused Workshop on Competency-based postgraduate education was conducted in November 2010. This was followed by a 4-day workshop on Curriculum Design and Research in Medical Education in December 2010 and a three-day Workshop on ‘Integrated Learner Assessment’ in June 2011. Prof. Raja C. Bandaranayake, an international expert on curriculum development and integrated teaching-learning methods from Sydney, Australia was invited as the expert guide for the latter two events.

Another notable academic program is the **CITI-India Program**, an online, web-based collaborative initiative with the University of Miami, USA, introduced in 2009. The program trains students and researchers in research ethics education. The other feature of this program is that it is offered from SRU to Nepal, Sri Lanka and Bangladesh. The Dean (Research) informed that India-specific contents were added to the CITI-GCP module making it a unique feature in the CITI-International curriculum.

The **Institutional Ethics Committee** continues to function under four subcommittees: Institutional Clinical Research Ethics Committee, Institutional Research Ethics Committee (other than clinical evaluation of drugs/procedures/devices/diagnostics/vaccines), Institutional Animal Ethics Committee and the Institutional Committee for Stem Cell Research and Therapy. These were established in response to new national guidelines and as part of the University’s initiative to strengthen and diversify its research efforts.

- **Student Support Systems**

  The **University Student Council** is the representative body of the student community and members are nominated based on their academic performance and leadership qualities and special talents in co-curricular and extracurricular activities. The Student Union over the years has demonstrated its ability to organize cultural programs and athletic and sports events in the campus and participate in community outreach programs like health awareness camps, blood donation camps etc. The students have shown a keen interest to participate in the monthly book reviews started in 2011 and to contribute poems, drawings and sketches for the monthly Newsletter ‘**SRU Bridges**.’ In addition the Student
Council publishes its own newsletter and annual magazine ‘Caduceus.’ The Committee members reviewed copies of some of these publications.

Student representatives are included as regular members in IQAC, Anti-Ragging Committee, Library Committee and the Medical Education Unit and participate in all these committee meetings.

The **Anti-Ragging Committee (and Squad)** was established in 2009 in response to UGC directives and has adopted the UGC guidelines and regulations in its constitution and functioning. The “UGC Regulations on curbing the menace of ragging in Higher Educational Institutions 2009” has been included in full in the Student Manuals from the academic year 2009-2010 onwards and warning messages are displayed in the University website and in prominent locations in the campus.

**Research Ethics Committee** (for student projects) was started in 2010 with a view to improve the competency of students in research methodology for their research projects or dissertation works and train them in good research practices and ICMR guidelines for research. Students have felt increasing need for such training after the University introduced the Chancellor’s Summer Research Fellowships for undergraduates and the MD/MS/MDS-Ph.D. program three years ago. The Dean (Research) pointed out that several students have taken up the online training and certification ‘CITI-India Program’ and participated in the ‘Statistical Tools – SPSS’ training program. The **Institutional Ethics Committee** (for postgraduate students) was established in 2012 to help postgraduate students in the Medical College.

**Feedback**

SRU has developed mechanisms for collecting feedback from stakeholders on a regular basis. Feedback information from students, parents, alumni, external members of the Boards of Studies and visiting external examiners are analyzed by the IQAC and patient feedback studied by the QIPST. These are discussed in the administrative bodies of the University and the MSEC and corrective measures instituted.

The Dean of Faculties confirmed that feedback gathered from the suggestion boxes installed in different parts of the campus is similarly analyzed. Corrective measures may be instituted at different levels - department Heads, course Chairpersons, Deans, Controller of Examinations, Director of Academic Administration, Dean of Faculties, Medical Director or the Vice Chancellor - as the case demands, or may be brought for discussion in the committees or the Advisory Board for appropriate recommendations. The 360° curricular feedback is analyzed by the Education Units. The QIPST has developed a specific algorithm for root cause analysis of sentinel events and patient feedback in the patient care scenario and presents its findings in the monthly meetings of the MSEC.
The Dean of Faculties explained how student feedback has been used in computing **Student Satisfaction Index** over the years. Information for this is collected under different headings that include curricular components (Academic content, depth and extent of coverage, Labs and clinical skills, internal assessments, tests and evaluations) and student support components (library, hostel amenities etc) The University has introduced online method for student feedback; semester- and year-wise from 2011-2012.

**University’s initiatives to promote best practices**

SRU has used feedback from stakeholders, recommendations of the academic and administrative bodies and directives and notifications from apex bodies and Governmental Agencies to bolster its efforts to promote quality measures and best practices in the institution. There are managerial and monitoring mechanisms for planning, adoption and implementation of such measures for individual departments, focused groups or the University as a whole. The Committee members reviewed the examples included in the Self Study Report under two headings: ‘System required initiatives’ and ‘Ad hoc initiatives’:

**System-required initiatives:**

- College Council meetings held once every six months.
- Research proposal meetings conducted biannually for scrutiny of Ph.D. registrants and for guiding quality in research.
- Analysis of contents in the suggestion boxes located at selected sites in the campus. The analysis is carried out once a month by the Dean of Faculties.
- IQAC General Body meetings chaired by the Vice Chancellor are held once every year.
- Faculty meetings within the departments, chaired by the Head of the department are held once a month. The minutes of the meetings are transmitted to the offices of the Dean of faculties and the Vice Chancellor.

**Ad hoc initiatives:**

- The initiatives for creating ‘Vision-2025’ as a quality document with strategic plans to guide the development of the University in the next 15 years was developed in collaborative discussions coordinated by the offices of the Dean of Faculties, Dean (Research) and Vice Chancellor. Every employee in the organization was given an opportunity to voice his/her suggestions.
- A SWOT analysis document was prepared by the office of the Dean (Research)
- Inclusion of tagline in SRU webpage in discussions in the office of the Registrar and modifications in brochures and circulars.
Contests inviting suggestions for contents to be included in the ‘Vision-2025’ document were made through SRU Newsletter *Bridges*, LCD display boards located in the Medical Center and other colleges.

- Decisions on collaborative research initiatives with national/foreign universities/research /scientific organizations/industries/NGOs included under Criterion III (3-1-6) in the Self Study Report were finalized after a series of 13 meetings held during 2010-2012.

**Quality enhancement for students by meeting their ideas and expectations**

Quality enhancement measures adopted by the University to enrich student experience include curricular innovations like the integrated curriculum for the MBBS program, case-based and problem-based learning sessions, PRODEV that highlights ‘soft skills’ in professional development and other novel features like guest lectures, CME programs, seminars, conferences, workshops, simulator and clinical skills labs, institutional support for student research projects, opportunities for student participation in community-based health awareness camps, ‘Born to win’ and personality development programs, entrepreneurial programs, monthly book reviews, humor club etc.

Ideas and expectations of students are identified by informal methods and by formal feedback process. There is evidence of successful mentoring and counseling of students to prepare and present papers in seminars and conferences and encouraging them to appear in competitive examinations like USMLE, TOEFL, GATE, GRE with provision of a rich supply of learning resources including online information.

The IQAC coordinator made a special mention of 22 value-added programs offered by SRU. These efforts go hand in hand with provision of infrastructure and facilities such as the Central Research Facility, Center For Toxicology & Experimental Research (CEFT) expanded facilities for simulator-aided training, clinical skills labs with high-end training equipment and custom-built facilities for the Education Units.

**Building relationships**

The rich learning opportunities and SRU’s alliance with several outstanding universities and institutions of national and global standing have attracted a large number of aspirants to the University over the years. There is evidence of continuing efforts on the part of the institution to reach out to the community and provide direct information about the uniqueness of the learning experience here. The University’s website is designed with this in mind and its portals guide visitors to their specific area/s of interest in an easy and user-friendly manner.
Many among the faculty are invited as distinguished guests and speakers to educational institutions in different parts of the State of Tamil Nadu and outside and their participation and interactions help to propagate the University’s unique philosophy and strength.

The Dean (Research) narrated how Sri Ramachandra University collaborated in organizing with the ‘Science City’ of the Government of Tamil Nadu and participated actively in the Science Exhibition in January 2010 in Chennai. More than 33,000 high school students and their parents participated in the one-week long exhibition.

The faculty and students of the University similarly collaborated with the National Institute of Disaster Management, Government of India, United Nations Disaster Management Team and the Government of Tamil Nadu in organizing ‘CEMEx 2011: Chennai Emergency Management Exercise – A Focus on humanitarian and medical response’ from 4th to 8th August 2011 in which more than 900 personnel drawn from different services like the doctors, nurses, paramedics, police, fire service and teachers received hands-on training in the University on management of emergencies and disasters by a team of national and international experts. These two mega events served to carry the message of the mission, societal commitment and achievements of SRU among the public and the community of aspiring students.

The University has developed pamphlets and brochures with details of the courses offered and opportunities for interdisciplinary learning in the campus. These are distributed amongst high school students and their parents and teachers and those visiting the University from time to time.
Strength, Weakness, Challenges and Recommendations

Strength

- Sri Ramachandra University has succeeded in establishing its brand identity based on the quality of its educational programs, patient care and safety records and commitment to research, community services and extension activities.
- The sprawling, well-maintained campus with its good landscaping, gardens, lawns, sports and play fields and spacious grounds provide a healthy environment and enhance the academic ambience.
- SRU has a team of highly qualified and dedicated faculty who value quality in education, research and healthcare and are eager to establish higher quality benchmarks for the institution.
- The achievements of Sri Ramachandra Center for Health Professional Education & Faculty Development and its recognition as a Regional and Nodal Center by the Medical Council of India mark a high point in academic excellence by the University. The subsequent establishment of education units by the Dental, Pharmacy and Allied Health Sciences Faculties adds yet another dimension to the University’s commitment to achieve excellence in education.
- There is rich scope for interdisciplinary learning in the campus.
- The conscious commitment to excellence in research and publications in the last five years has started showing results and its effects are evident in the outlook and mindset of students, faculty and technical staff.
- The massive expansion of Sri Ramachandra Hospital and its continued commitment to provide free healthcare and participate in the State Government’s initiative to provide surgical care to Below Poverty Line population has added to the strength and stature of the institution. The state of the art operation theaters and other support services add another dimension of quality here.
- The achievement and sustenance of global standards of healthcare and patient safety in Sri Ramachandra Medical Center is highly commendable as certified by both national and international agencies.
- Recognition and accreditation of many of the services and departments of the University by national and international agencies like NAAC, NABH, NABL, JCI, AABB and ISO have not only created a wider recognition for its commitment to quality, but also raised the confidence among the employees creating an air of buoyancy and expectancy in the campus.
- There are clear indications of internalization of quality standards and benchmarking in the philosophy and work culture of the University.
- The department of Environmental Health Engineering and thereby Sri Ramachandra University have earned global recognition through the work on adverse health effects of indoor air pollution. There is obvious potential for the department and the university to build on this and gain international recognition in the important area of research on the effects of adverse environmental factors on health and disease burden in the community.
Weakness:

- There is scope for improving the administrative machinery for human resource management when compared to the swift pace of reforms which have taken place in the educational, healthcare and research activities.
- There is a wide variation in the number of publications in indexed journals across departments and across Faculties. Some of the departments/Faculties are yet to make a mark in terms of funded research projects and publications.
- Internet and Wi-Fi facilities are confined to limited locations and access is inadequate in some critical areas.
- User-friendly facilities for differently-abled students and faculty in some of the critical areas like the Central Library and lecture halls are lacking.
- There is a dearth of signage displays in the campus and within the buildings.

Challenges:

- A significant proportion of teaching faculty especially in the clinical departments are young and highly accomplished. Innovative and proactive HR policies need to be put into action to retain their interest and long-term commitment to the institution.
- Although SRU has established its distinct brand identity in the region, several other institutions in the neighborhood appear to be motivated to make equally rapid strides in identical areas. This requires prompt action to implement the strategic action plans mentioned in the ‘SRU 2025 Vision’ document so that the benchmarks established by the University are not only sustained but excelled in the coming years.
- Research consultancy and Institute-Industry collaborations in research and drug discovery needs to be accelerated to ensure larger returns from consultancy services to make the University’s research initiatives self-sustained and self-sustainable and justify the sizeable financial investments into research activities.

Recommendations:

- Teachers of basic sciences like Anatomy, Physiology and Biochemistry need to pay more attention to recognize the limitations and learning needs of students other than those in the MBBS course.
- Greater efforts to pursue and strengthen more funded research projects and quality publications by faculty.
- The current practice of the university to have publications across the departments/faculties analyzed for their quality (impact factor, H-index) is commendable. While the top-performing departments need to be recognized and
rewarded, those which trail far behind should be motivated and enabled to catch up.

- Centers for Excellence is a good concept for nurturing and promoting the best research thrust and potentials. The University can identify a couple of the most promising among them and provide concerted support to enable them to emerge as Nationally/Globally recognized centers.

- The University may explore the avenues for more curricular reforms and innovative add-on courses besides adhering to basic curricular content prescribed by the regulatory bodies.

- The visibility of some of the Biomedical Science departments need to be improved by attracting more reputed faculty.

- The staff strength of the Central Library needs be increased by recruiting better qualified candidates with postgraduate/doctorate qualifications in Library Science as may be necessary as per regulations.

- More textbooks are to be added under various disciplines in the central library to overcome the difficulties students have reported in finding sufficient number of textbooks especially during examinations. Other steps like RFID for security of books may be considered at the same time.

- Increasing library hours till late at night will be especially helpful for postgraduate students who would be occupied with clinical responsibilities till late evenings.

- Wi-Fi facilities need to be extended and made more widely available in the campus.

- In view of the rapid infrastructure expansion of Sri Ramachandra Hospital with doubling of its bed strength, a comprehensive database that allows students to access patient information in a more efficient manner, including the facility to search by diagnosis, search by key word etc may be considered; subject to patient confidentiality.

- The initiatives taken for e-Governance of the University with acquisition of appropriate MIS software needs to be accelerated. The advantage of Phase I training of faculty and staff in IT technology which has already been completed is likely to be lost by further delay.

- Access and participation in the National Knowledge Network (NKN) assisted teaching-learning may be expedited on a larger scale.

- The University may add modular courses on the Humanities, practice management, communication skills, critical thinking, infection control policies and on the importance of maintaining patient confidentiality.

- Academic leadership of some of the departments like Medicinal Chemistry, Clinical Psychology, Bioinformatics and Clinical Nutrition need to be strengthened. The interaction between these departments and clinical departments may be strengthened.

- Starting of regimented group activities like National Cadet Corps (NCC) will foster a greater sense of nationalism and group discipline among the students.

- Signage displays in the campus and in the buildings need to be more prominent and located in more strategic locations. It would be appropriate to follow
international norms for color codes, signboard dimensions and visibility in darkness.

- A student website to help disseminate information among all students and to all the constituent units of the University will be welcomed by the students.
- The University may initiate steps to prepare alumni profile for various undergraduate courses as an additional instrument to indicate the success of the programs. This will add a significant outcome measure and show that the goals and objectives of the program have been successfully met with.
- While the visibility of existing supportive and rehabilitative facilities in the campus needs to be increased, more facilities to help differently-abled students especially in crucial areas like the Central Library and lecture halls may be provided.