

TOWARDS A TWENTY-FIRST CENTURY RENAISSANCE: THE FUTURE OF BENGAL'S PRESIDENCY UNIVERSITY

Second Report of the Presidency Mentor Group, January 2012

PREAMBLE

In August 2011 we had submitted our first report to Shrimati Mamata Banerjee, Hon'ble Chief Minister of West Bengal, with a set of recommendations on how to **refashion Presidency as a center of excellence. Our aim remains the transformation of Presidency University into a world-class research and teaching institution by the time of its 200th anniversary in 2017.**

Since the submission of our first report, three renowned scholars and academic administrators have joined the Presidency Mentor Group. They are Sabyasachi Bhattacharya (physicist, Tata Institute of Fundamental Research), Nayanjot Lahiri (historian, Delhi University) and Rahul Mukherjee (statistician, Indian Institute of Management, Kolkata). Among them, Professor Lahiri is the only member who has not studied at the erstwhile Presidency College. Her "outsider's perspective" will be valuable to the rest of the group deeply invested in the rejuvenation of their alma mater.

All members of the Presidency Mentor Group gathered in Kolkata on December 19 and 20, 2011, for a formal meeting. We reviewed the implementation of our first set of recommendations and formulated a number of new suggestions that are put forth in this concise second report, which should be read together with our more wide-ranging and elaborate first report. On January 2, 2012, the Chairperson of the Presidency Mentor Group had a meeting with the Hon'ble Chief Minister who took prompt decisions on issues identified as top priorities by the PMG. This report has been given final shape after further consultation among PMG members by phone and email. We trust it will be given the same serious consideration as our first report.

ACTION TAKEN ON THE FIRST PMG REPORT

1. We had recommended that Presidency University be regarded in the future as the crown jewel of institutions of higher education in Bengal that will be an example for other institutions to emulate. We are glad to note that the Chief Minister has accepted the principle that Presidency should be a state university with a special status to be nurtured as **a center of excellence.**

2. We had thought it advisable to recruit half a dozen strong academic leaders in the natural sciences, social sciences and the humanities as **Distinguished University Professors**. Following the meeting with the PMG Chairman on January 2, 2012, the Chief Minister personally approved and announced four such positions at Presidency University named after iconic figures in the modern history of Bengal on January 4, 2012. These have been described as follows: Acharya Jagadish Chandra Bose Distinguished University Professorship in the Natural Sciences; Kabiguru Rabindranath Tagore Distinguished University Professorship in the Humanities (in the field of literature and cultural studies); Swami Vivekananda Distinguished University Professorship in the Humanities (in the field of philosophy, broadly defined); and Netaji Subhas Chandra Bose Distinguished University Professorship in the Social Sciences (in the fields of economics, history and/or political science). The Chief Minister offered a fifth position, yet undefined, named after Kazi Nazrul Islam. We suggest that this position should be in the field of Inter-Cultural Dialogue and Peace Studies. We strongly urge that two more Distinguished University Professorships in the natural and mathematical sciences be created as soon as possible. This will send the right message about the high priority we attach to achieving excellence in the sciences at Presidency University.
3. In our first report we had underscored the recruitment of an outstanding and diverse faculty capable of cutting-edge research and high-quality teaching as the top priority. We recommended that the appointments be made with the help of selection committees consisting of leaders in the various disciplines and fields of study. We are glad to note the readiness of the state government to adopt the transparent and rigorous selection process suggested by us. We are especially heartened by the willingness of the Vice-Chancellor to draw on the expertise of the outstanding scholars listed by us on the selection committees.
4. In order to attract the best faculty to Presidency as a unique institution and center of excellence, we had emphasized the need to offer compensation including medical and other benefits comparable and commensurate with central and central government funded institutions. The decision of the Chief Minister to create a provision for a guaranteed annual supplement in the form of faculty research and professional development funds – Rs 4 lakh for Distinguished University Professors, Rs 3 lakh for Professors, Rs 2 lakh for Associate Professors, and Rs 1 lakh for Assistant Professors – is an important step in the right direction. The offer of moving expenses up to Rs 2 lakh for faculty relocating from outside West Bengal sends the right signal about our intention to make Presidency a magnet for talent from across India and the world. Much more will need to be done to compete effectively with institutions in other states and central government funded autonomous institutions, such as, IIM-Kolkata, IIT-Kharagpur and IISER-Kalyani in our own state. We urge the state government to fully implement our recommendations in this regard. We must attract and retain top-notch faculty with proven excellence in research at the international level. In the

- absence of complete parity with central institutes in regard to salary, allowances, and perquisites, it will be extremely difficult to recruit and retain the very best faculty, especially in the sciences. In terms of medical benefits, Presidency could take the lead in creating a cost-effective and high-quality group medical insurance scheme in which the employer will contribute a substantial fraction of the annual premium.
5. As part of dramatically upgrading the academic infrastructure, we had recommended the enhancement of IT capability on campus. We are pleased to note that Presidency University has been already connected to the National Knowledge Network. We congratulate Vice-Chancellor Malabika Sarkar for taking the initiative to create a new website, that will enable, among other things, candidates to file online applications for faculty positions. The streamlining of the faculty recruitment process that began on January 19, 2012, is a very welcome development.
 6. While several challenges remain and will have to be addressed in the future, the new sense of purpose in rejuvenating Presidency as a center of excellence is encouraging.

A STATE UNIVERSITY WITH A SPECIAL STATUS

[Terms of Reference No. 11: To explore whether Presidency should continue to be a State university or seek the status of a Central university or aspire to be counted as one among the new innovation universities.]

In light of the measures taken by the Chief Minister along with the Education and Finance Departments, we continue to feel that our first preference is to allow Presidency University to flourish as a state university with a special status. This should not prevent Presidency from seeking additional financial support from the center, whether from the University Grants Commission, the Planning Commission for the 12th plan period, or a one-time special budgetary allocation as described in our first report. We note with appreciation the efforts by the state government in trying to get a very substantial allocation in the range of Rs 200 crore for Presidency University in the budget of 2012.

AN OUTSTANDING AND DIVERSE FACULTY

[Terms of Reference No. 4: To define search procedures and the constitution of search committees to make the best faculty appointments at the levels of professor, associate professor and assistant professor in order to create an outstanding and diverse faculty.]

We continue to believe that the first 100 faculty appointments will be of critical importance in shaping the future of Presidency University. We are pleased that the recommendations in our first report about the recruitment process and the

composition of selection committees have been taken on board in designing the faculty recruitment drive launched on January 19, 2012. The minimum qualifications mentioned in the advertisement should be regarded as just that – the bare minimum. The desirable qualifications for selection at a center of excellence will naturally be much higher. There must be no compromise on excellence in making these appointments. We reiterate that full professors should be typically scholars and teachers of national and international distinction. Associate Professors should have a strong record of research publications in the form of a book published by a reputable academic publisher and/or articles in top, scholarly, refereed journals as well as teaching experience. Assistant professors should have Ph.D.s and display evidence of research potential and promise as well as teaching ability. We expect that appointees as assistant professors in the natural and mathematical sciences will have Ph.D.s or its equivalent and preferably a couple of years of post-doctoral research. Appointees as assistant professors in the humanities and social sciences should also ordinarily have Ph.D.s or its equivalent. In these fields if an exception is occasionally made for a genuinely meritorious young scholar who has not yet had an opportunity to obtain a Ph.D., such an exception must be properly justified in writing by the selection committee.

We envisage Presidency University as a path-breaking institution of higher learning that will have a judicious balance and synergy between research and teaching. Presidency must be a place where the faculty will carry out first-rate research at the level of top institutions in India and, in time, the leading institutions in the world. The faculty should be encouraged to offer research-based teaching and inspire students to undertake research. The selection committee in each subject should be empowered to recommend any number of increments it considers appropriate to attract outstanding candidates to join Presidency University.

The Vice-Chancellor adopted the correct strategy of advertising some 80 positions – about half at the Professorial level and the remainder at junior ranks in the first round. Since the option forms are being distributed now, the same selection committees for the new appointments can evaluate current Presidency College faculty and others in the education service wishing to opt in.

It would be quite important to move ahead with the search for the Distinguished University Professorships as outstanding scholars occupying these positions will be able to provide academic leadership in the various branches of learning.

The state government has authorized another 104 assistant professorships with full financial concurrence. Since there are outstanding potential candidates as evident from the response to the first round of advertisements, we recommend and endorse the Vice-Chancellor's view that advertisements for these posts should be issued straightaway. While we recognize that these are promotional posts, some of these positions should be reclassified as associate professorships from the outset in order to have a judicious balance among ranks in each department. This is vitally important at the start-up stage

We reiterate that in addition to excellence due attention needs to be paid to the question of diversity. We recognize that all statutory reservations for posts will apply. Presidency University should be proactive in conducting a nationwide search for outstanding candidates belonging to the scheduled tribes, scheduled castes, other backward classes, and under-represented minorities.

We reaffirm our hope that the search and selection procedure outlined in our first report and this one will give way to the normal rules of university autonomy and faculty self-governance by 2017. Once a critical mass of excellent faculty has been assembled at Presidency University, they will take a leading role in recruiting their colleagues with the help of outside experts. In all well-established, reputable universities in the world, a fine faculty usually knows how to replenish and augment itself.

Once the picture of the yield from the permanent faculty recruitment process begins to emerge, steps should be taken to invite very capable guest faculty through contractual appointments for fixed terms as described in our first report.

VISITING PROFESSORS

[Terms of Reference No. 15: To create a provision for short courses to be taught by distinguished scholars based in other parts of the world as visiting professors.]

We reiterate our recommendation on this topic presented in our first report. We would like to see a few appointments of this nature during the months of July and August 2012 as well as January 2013 as a pilot project.

A TALENTED AND DIVERSE STUDENT BODY

[Terms of Reference No. 5: To refine and streamline the admissions process in order to recruit the most talented students from all sections of society and the process for awarding scholarships and providing financial aid on the basis of merit and need.]

The principles that ought to undergird the students admissions process at Presidency were outlined in our first report – outreach to schools in many regions, undergraduate admissions tests of a high standard, open competition among graduates from all universities for post-graduate admissions, and due attention to diversity on the student body.

DEPARTMENTAL REORGANIZATION AND INTERDISCIPLINARY INITIATIVES

[Terms of Reference No. 6: To suggest innovative and efficient ways of organizing Departments and Schools of the University enabling both disciplinary and inter-disciplinary appointments and courses of study.]

We reiterate our recommendations on this topic. We would like to offer the services of two PMG members – Sabyasachi Bhattacharya and Himadri Pakrasi – to help oversee the creation of a consolidated Department of Biology/Life Sciences with several connected streams, such as, plant sciences, animal sciences, etc. over the next year. Some of the best science is taking place at the points of intersection of various disciplines. Presidency needs to have a flexible organizational structure to promote research and teaching in these fields.

A revamped Mathematics Department should have a Computer Sciences component. There is reason to believe that a focus on linguistics, complexity theory and algorithms, neglected in other Indian institutions, may enable Presidency to quickly emerge as a leader in this area.

The broadening of the Sociology Department to encompass social and cultural Anthropology should take place during the faculty recruitment process.

We recommend that the departments be structured under two Faculties – the Faculty of Natural and Mathematical Sciences and the Faculty of Social Sciences and Humanities – each with a Dean. We continue to encourage two or three University-wide research initiatives and the future establishment of a School of Public Policy.

AN INTELLECTUALLY EXCITING CURRICULUM

[Terms of Reference No. 7: To propose a curricular structure and an intellectually exciting curriculum with a balance of lecture courses, seminars and tutorials and to provide detailed guidelines for innovative syllabi in the natural sciences, social sciences, humanities and the arts.]

We had offered our initial thoughts on this topic in our first report, including a suggestion to eliminate the current distinction between honors and pass courses and to give students the flexibility to change their honors subject based on aptitude and performance at the end of the first year. We also suggested that students should not have to follow an arbitrary, regimented schedule over three years, even though the number of courses to be taken to fulfill the honors requirement may remain the same.

At our meeting on December 19-20, 2011, and subsequent weeks, we gave considerable thought to the vision that should inspire the curriculum as a whole as well as the philosophy that might guide undergraduate and post-graduate syllabi in various subjects. In addition to a broad vision statement, we give below our suggestions for subjects in which PMG members have some direct expertise.

Presidency University needs to return to its original vision of being an institution imparting a genuine liberal arts education, especially in the undergraduate college. The preset system where students specialize from the very outset - and only nominally engage with other fields through lackadaisically taught “pass” courses - needs to be replaced by a system where specialization only happens after the first year. The basic idea would be to admit students into a number of streams (rather than just two as mooted in our first report) – say, Physical Sciences, Biological Sciences, Mathematical Sciences, Social Sciences and Humanities - that would have their own admission requirements and numbers. Students will then pick their honors subject at the end of the first year, based on their course experience and whether they satisfy the requirements set by the departments that they wish to join. Departments will be asked to set their requirements in terms of performance in the first courses. This will mean that a Mathematical Sciences student or Humanities student who does exceptionally well in physics first year courses and meets the physics department’s other requirements (say some minimum marks in higher secondary mathematics) could in principle switch streams. To make this possible departments would be encouraged to set requirements that are not too onerous in terms of the number of courses taken in the first year (say no more than four courses over the year) to encourage intellectual diversification).

In the first year students will be required to take at least four courses from at least two streams that are not the one they were admitted into. In subsequent years, that would go down to two courses per year, for a total of eight. Of these eight, no more than six can be in a single stream. That need not mean that they can walk into any course they want. Departments will have to plan how many students they will admit into each course because they will need to assign it an appropriate sized room. Moreover, courses build on each other and some courses cannot be taught without some background. Hence, departments will have to set some requirements for individual courses. However, every department should be required to teach four courses a year that have minimal requirements. And there should be one course a year per department that has no prior requirements whatsoever and allows for high enrollment, so that every student, over the three years, can satisfy the two course-per stream requirement.

Once someone enter a primary field in his second year, the basic structure can be more less as it is (fairly structured courses that build on each other with some optional courses) but there should ideally be some flexibility in terms of how quickly or in what precise order students go through the program. For example, students could be allowed to take second year courses in their first year based on a qualifying exam, and then allowed to take Masters level courses to finish their credit requirements. This may be only possible in fields that have a Masters degree.

The transition to this new model will take some work. In particular, in the year when it is introduced, each department will need to cover the second and third year courses based on the old syllabus and structure and have a set of new courses for

the first year students. The whole plan can, therefore, be implemented beginning in July 2013 at the earliest.

Our vision for Presidency would be easier to implement if we had a four-year bachelors' degree. However, cognizant of the cost implications of such a move, we have for the moment suggested what may be feasible in three years. We understand that the central government has broached the possibility of a four-year model. Presidency could be a trail-blazer in pursuing a 12 (school) plus 4 (bachelors) and then doctoral program with the masters being an exit option after graduate-level coursework for those not continuing with doctoral dissertation research. We will deliberate further on these important issues at our July 2012 meeting. For now, we offer some general guidelines above and some specific suggestions for particular disciplines below.

ECONOMICS

UG

This proposed syllabus updates the more classical approach taken by the existing syllabus to cover the most important trends in economics teaching everywhere—much more emphasis on empirical testing of theories and actively doing empirical research. The basic change is to introduce applied ideas from the beginning so that students connect what the learning to real world issues. It also compresses some of technical materials such as econometrics and statistics II into one semester to make it possible to teach serious applied work by the second year. Some parts of mathematical economics such as Eigen vectors can be easily dropped and therefore more emphasis can be put on uncertainty and game theory which are key tools of today's economics.

It is also important to think of some of the courses in this list as place-holders. These include development economics II, public finance, political economy, international trade, industrial organization and finance. It may also be possible to only require one history course. Ideally the department should offer a whole menu of optional courses and students will choose what they like. The very light load in year 1, is to allow students to shop around and select in and out.

Semester 1

Mathematical economics

Applications of basic statistics: Teach ideas of measurement using applied examples from poverty measurement, cross-country comparisons, etc. Mean, median model, standard deviation, correlation, etc.

Semester 2

Microeconomics 1: consumer and producer theory

Econometrics 1: From probability theory up to hypothesis testing and OLS, including identification issues, the idea of an experiment, Fisher Exact tests, etc. introduction to Stata (loading a data set, taking means etc.)

Semester 3:

Macroeconomics 1: National accounts; IS-LM etc

Development economics 1: poverty measurement; issues in education, health and redistributive policies; making use of basic regressions etc to interpret the evidence; Further emphasis on identification and data interpretation issues

Uncertainty and Game theory

Semester 4:

Microeconomics II: general equilibrium; imperfect competition; contract theory

Macroeconomics II: Open economy and Growth theory

Econometrics II: Panel data; Difference in difference; instrumental variables, limitations of OLS; using Stata; taught using examples from empirical papers

Semester 5:

International Trade

Industrial Organization

Economic History I: Feudalism, Industrial Revolution, Colonialism, etc.

Development economics II: More on Education and Health; Markets for credit, savings, insurance; both theory and empirical work that uses difference in difference, instrumental variables, etc. methods

Research Project I: Preparation to do applied research; data collection methods, how to write a research paper etc.

Semester 6:

Public Finance

Economic History II: Modern Economic Growth; Lewis Model, Harris-Todaro; Post 1914 Growth and Stagnation in India, China, United States.

Political Economy: Voting models, institutions, etc. Both theory and empirical research.

Finance: Basic portfolio theory; Efficient markets hypothesis; Time series methods, etc.

Research project II

ENGLISH

While the BA and MA courses will obviously be separate, they should also be seen as integrated, so that a student who follows the entire route will benefit from a number of perspectives, with concomitant choice of texts and background. The different patterns of compulsory courses at BA and MA levels will, in combination, train the students both in a sustained chronological view, and in various analytical approaches employing different critical categories and interdisciplinary perspectives. Even the compulsory courses should contain a certain component of non-English material (both European and other). But the optional courses should be so designed that all students learn of the total context of English literary and textual studies, in terms of both primary material and critical approaches.

UG

The course pattern suggested below follows the current structure, with students focusing on a single Honours subject from Year 1. If this is replaced by a new structure, offering students a wide range of courses in Year 1 zooming in on focused Honours courses only from Year 2, the semester-wise distribution of the courses will change, but their number and content need not. In that case, Honours courses can be concentrated more intensively in Years 2 and 3.

Ample provision should be made for intensive writing practice in all years, with small tutorial groups not exceeding four students. Tutorial grades (as distinct from those in class tests or other forms of continuous evaluation) should carry credit.

Compulsory:

4 period-based papers covering all literature in the English language

1. Literature 1780-1900
2. Literature 1660-1780
3. Literature 1500-1660
4. Literature 1900 to the present

4 other papers

5. Critical terms and concepts
6. (a) History of the English language
(b) Principles of linguistics
7. Indian Writing in English
8. Classical, Biblical and Continental Contexts of English Literature

4 Optional papers

The Board of Studies, when constituted, should decide on the range of options, as determined by student demand and staff specialization. The recommendations of

the UGC's last Curriculum Development Committee, which lay out a wide range of options, may be consulted. Some possibilities might be

1. Shakespeare: one or two plays for detailed study, plus textual and performance history
2. New Literatures in English
3. Genre-based options (tragedy, epic, satire, bildungsroman etc.)
4. Theme-based options (war / death / nature in English poetry)
5. A period, development or movement (Romanticism, Victorian women novelists, Political Theatre in English since 1960)

PG

The proportion of core (compulsory) and optional papers may be changed to have 8 of each instead of the present 11 + 5.

Even at the postgraduate stage, ample provision should be made for writing practice through regular tutorials with small groups of students. If absolutely required, it would be better to reduce the number of tutorial sessions per semester, rather than have large groups where each individual student may not receive enough attention.

To avoid duplication of the UG course pattern, the core papers may be arranged by genre or theme. Here, there is obviously an open range of possibilities. One structure might be as follows:

1. Poetic forms and genres
2. Narrative
3. Literature and the theatre arts
4. English and other literatures: encounters and exchanges. Translation.
5. Textual studies (incorporating bibliography, textual criticism, history of the book, textual and editorial theory, history of reading)
6. Literature and philosophy (covering such fundamental issues as representation/imitation, time, ethics, language, psychology/psychoanalysis)
7. Socio-critical theory: gender, postcoloniality, old and new historicism
8. Literature and other arts

Here too, the range of optional papers may be determined by Board of Studies, taking student demand and staff specializations into account. Again, the CDC report of the UGC might be consulted for the wide range of suggested options offered there.

HISTORY

A modern global history course should be designed for the core curriculum in the first year that might appeal to majors and non-majors alike. The temporal and spatial parameters of the current courses need to be redesigned to reflect trends in the most innovative historical scholarship in recent years.

UG

The undergraduate syllabus needs to be revamped in, at least, two major ways:

(i) The syllabus should be designed in a way that students are made aware of histories other than those of India and Europe, which is what is presently emphasized. So, for instance, along with papers that examine the history of Europe, there should be separate modules on ancient and modern East and South East Asia, the Middle East and, if possible, also Africa and the Americas. The first step should be to introduce courses on the history of Asia outside Europe. This can be done by increasing the range of options for students within the Majors. As far as global ancient history goes, the exclusive focus on Ancient Greece and Rome has no academic justification. There should be a course providing an overview of ancient and medieval societies, states and cultures - within which Bronze Age and historic societies and cultures (in Mesopotamia and China, apart from Greece and Rome), religion and culture in medieval Europe and societies in Central Islamic lands are studied. Again, there must be ways of integrating the history of Iberia and north Africa as also the Ottoman empire where the present focus is primarily on the rise and consolidation of the 'Modern West'.

(ii) The titles of courses and the rubrics in many instances should be more imaginatively designed. The same title has been given to all Indian History modules i.e., 'History of India' with the only change in language being provided in the phrase, which specifies the chronology. There are far too many chronologically defined courses in Indian history. There need be no more than three such survey courses and the rest should be defined thematically. As for the rubrics, an instance in point is the first rubric where 'Sources and Interpretation' figure. This could be broken up into 'Sources and tools of reconstruction' and 'historical interpretations (with special reference to gender, environment, technology and regions)'. This has the advantage of, on the one hand, demonstrating how ancient Indian history is reconstructed and, on the other hand, drawing attention to the growth areas of ancient Indian history. This is only illustrative of a more general point about the necessity and desirability of integrating the new ways in which history continues to be reconstructed and visualized, into the syllabus.

PG

(1) The syllabus should be more 'global' with a primary focus on 'non-Indian' history modules in the first two semesters. Instead of the first module being on 'Interpreting Indian History', there should be a general course, which is not confined to India. It can be either called 'Interpreting History' or 'The Practice of History' or 'Writing History' where students are acquainted with selected themes relating to the historian's craft. Pre-modern historical traditions, modern historiography, cultural history, Marxism, Annales, Gender, Archaeology, Art and History are some such themes.

Apart from the modules in the present syllabus, there should be an attempt to

include in the early semesters, other kinds of global/non-Indian history components where, along with modern history, pre-modern pasts are also emphasized. Elective courses should give an opportunity for students who have an interest in ancient and medieval history to study in Presidency University. Simultaneously, studying thematic papers in a comparative perspective should be considered. So, for example, if urbanism forms the theme of one such module, apart from a theoretical introduction to it, a select survey of the character and forms of urbanism in Greece, Rome, China and South-East Asia can be offered. Similarly, science and technology in medieval Asia can be studied across a range of regions, from the Arab World to China. Again, with regard to colonialism (which is primarily examined in the present syllabus from the perspective of India), it would be better to have a paper entitled 'Modern Imperialism' which looks at the history of colonialism and imperialism in a more comparative and connective way. While the focus may be on British imperialism in Asia and Africa, it is also important to, at least, give students a sense of the Spanish, French, Dutch and American empires.

(2) In semesters 3 and 4, students can specialize in one area of Indian history viz., ancient, medieval or modern. There should be core and elective modules within each of these areas and an internal choice for students within the core modules as well. So, by way of illustration, if there are two core source-based modules for students who opt to specialize in Ancient India, there can be asked to opt for two out of a bunch of five offered courses that could be on: archaeological practice in India, elements of epigraphy and numismatics, historicizing ancient Indian texts, imaging India's past: visual sources, and many more.

At the same time, the new syllabus should ensure that the walls that separate ancient/medieval/modern are not insurmountable. To put it another way, the syllabus can be designed in a way that students who want to study some courses in other areas of specialization in semesters 3 and 4, can do so by opting for them instead of the elective courses in their own core area of specialization. A student who has opted for Ancient India and is seriously interested in art history, for instance, would gain from a syllabus design, which allows her to opt for a module on ancient art forms and another one devoted to the history of medieval or modern art and architecture.

LIFE SCIENCES

These are exciting times for biologists. Conceptual and technical advances now come so rapidly and create such great potential for solving many long-standing problems in biology, medicine, agriculture, and the environment, that many are calling the 21st century "The Century of Biology." The Presidency University Department of Life Sciences will be in an exceptionally strong position to capture the tremendous advancement across and between the sub-disciplines of biology: from macro-molecular structure, to cell/developmental biology, to ecology, and to evolution. It will bring together the traditional pathways: Botany, Zoology,

Physiology, Biochemistry, Biotechnology and Bioinformatics. Intellectually, the department will draw its strength from an unusually interactive and collaborative faculty possessing a wide range of interests at all levels of biological organization and utilizes many different biological systems, including many model organisms. Organizationally, it will benefit from its strategic location in an administrative unit that is designed to promote interdisciplinary interactions in research and training: the School of Natural Sciences and Mathematics. Thus, Life Sciences is linked to strong physical sciences, mathematics and statistics departments. These interactions ensure our students—from undergraduates to post-doctoral fellows—access to the broadest opportunities for training and career development. More detailed suggestions for the syllabi in Life Sciences will follow in our next report.

PHYSICS

The foundations of basic physics (classical and quantum) are quite mature and so is the curriculum generally followed globally for both UG and PG programs. The PMG endorses the current syllabus, which is largely in line with the global trend, while it also notes that the actual material taught would naturally depend a great deal on the instructors.

However, PMG suggests a general philosophy for physics instruction and its relationship to research in PU.

The courses should preserve the intellectual rigor of the conceptual foundations developed over much of the past two centuries. Yet, it should always attempt to connect to the current frontiers of all of natural and mathematical sciences where physics continues to play a central role. Drawing examples of principles from, and their utility in, the body of newer and current research is one such effective tool for instruction. In the PG courses, in particular, the electives and special papers would be expected to closely connect to areas of active research. Moreover, the classroom expositions, the tutorials as well as the examination system should emphasize the well-known "problem-solving" philosophy that tests how one understands the concepts and methodologies, in favor of the older memorization-intensive essay-type expositions.

The specific recommendations below are not meant to be exhaustive but merely serve as examples of the overall "form" of instruction of the material in the prescribed syllabus.

- (1) Classroom lectures should contain demonstrations, whenever possible.
- (2) Laboratory courses should be coordinated with the classroom lectures. These courses need to be engaging and not based on finding the "right" answer. This requires a great deal of attention and should be allowed to evolve over a few years.

(3) Tutorials should accompany classroom lectures, to be conducted by the graduate students (teaching assistants) under the overall supervision of the faculty.

(4) A project course in physics should be offered in the final year, covering two semesters, which would consist of an original research project, either theoretical or experimental. The projects can, and very desirably would, often involve more than one department (such as biology and physics, mathematics and physics...). One expects that such projects will facilitate intellectual cross-fertilization across disciplinary boundaries, characteristic of major research universities globally.

(5) Similarly, courses commonly referred to as "interdisciplinary" should be developed over time to represent today's research frontiers that straddle more than one traditional discipline.

(6) A course, roughly physics 101, should be offered to all students in the first year (required for all natural /mathematical sciences students) covering two semesters. The course content should roughly follow the well-known text-book such as Halliday-Resnick-Walker, with calculus as a prerequisite.

(7) The PMG notes that the current post-graduate syllabus has an artificial separation of the topics in three papers 10, 11 and 12 in the fourth semester, which should be eliminated. The choice of special areas will depend on the faculty and should have some flexibility. In general, one would expect some amount of evolution in these special areas over time.

(8) Parenthetically, the PMG also endorses bridge courses between science departments and humanities departments - such as courses on "History of Science", "Science -fiction", etc., - to be offered at the third year level or beyond. In general, courses euphemistically called "physics for poets" or "philosophy for carpenters" are to be encouraged. In addition, courses on scientific writing, basic English composition - including some literature - should be offered to science majors. These developments would naturally depend on available faculty and their interest and would evolve with time.

These recommendations, made specifically for physics, may find commonalities with other areas within the natural and mathematical sciences umbrella in PU.

STATISTICS

In a top-notch university as Presidency aspires to be, the syllabus for any subject should capture the major developments in recent years. This is particularly important in the case of statistics where the computer revolution did have a profound impact on the very nature of the subject.

1. From this perspective, the proposed syllabus for statistics at the postgraduate level looks attractive though in places there is scope for introducing modern topics (e.g., small area estimation can be included in the paper on Sample Surveys).

2. The proposed syllabus for statistics at the undergraduate (major) level, however, looks old-fashioned. Some of the topics such as (a) Descriptive Statistics I, (b) Population Statistics, (c) Statistical Quality Control, (d) Economic Statistics etc., if properly redesigned, will require significantly fewer lectures than mentioned in the syllabus. The time so saved can be utilized in introducing modern topics such as biostatistics, survival analysis, bootstrap, actuarial statistics etc., purely as methods aided by appropriate statistical software; the theory underlying these modern topics can be taught later at the postgraduate level.

3. Comments similar to those in 2 above apply to the proposed syllabus for statistics at the undergraduate (elective) level.

THE UNDERGRADUATE COLLEGE AND GRADUATE STUDIES

[Terms of Reference No. 8: To define the relationship between the undergraduate College and the post-graduate Departments and Schools.]

We reiterate our suggestions in the first report on ways to have synergistic relationship between undergraduate and graduate studies, including the employment of post-graduate students as teaching assistants in undergraduate courses.

THE ACADEMIC CALENDAR

[Terms of Reference No. 9: To devise the most suitable academic calendar and consider whether to adopt a semester-system or year-long courses.]

We had already endorsed the semester system in our first report. We recommend the introduction of an intensive monsoon semester in July and August in partial overlap of the regular first semester and a winter semester in January in partial overlap of the regular second semester in order to introduce courses by distinguished visiting professors.

AN EFFICIENT AND ATTRACTIVE ACADEMIC INFRASTRUCTURE

[Terms of Reference No. 10: To suggest ways of making rich library resources available to faculty and students, building laboratories for scientific research, and equipping the campus with state-of-the-art information technology.]

In addressing this topic, we had made several suggestions about how to confront the challenge of space in the campus. We reiterate most of what he had recommended on faculty offices, lab space and library space. We make one important modification to one of our earlier recommendations. Since it has not been possible to acquire a portion of the All India Institute of Hygiene and Public Health Building as swing space for Presidency, we think it would make sense to repair, renovate and upgrade

the Eden Hindu Hostel Building. The eastern wing may be fenced off and converted into the women's hostel with adequate security. The entire northern wing that has about 3000 square meters in two floors should be converted to use for academic purposes. A separate residential building should be acquired or constructed to serve as the men's hostel. We recommend getting rid of the tag "Hindu" once we relocate the men's hostel.

All three heritage buildings – the Main Building, the Baker Building and the Eden Hindu Hostel Building – require extensive repair, renovation and refurbishment that will cost approximately Rs 50 crore.

We understand that approximately 400,000 square feet of space can be added in the existing campus in accordance with existing municipal rules at a cost of approximately Rs 120 crore. Of this, an additional floor of 6300 square meters on top of the Baker Laboratory Building should be quickly constructed to ease the implementation of the renovation plan of the lower existing floors.

There are two possible locations for new construction – one in a T-shape behind the main heritage building in the direction of the current students' canteen and the other between the Main Building and the Baker Building. We strongly recommend a slim, tall, high-arched iconic Bicentenary Building between the playing fields of Hare School and Presidency to be in full operation by January 2017. A 3D visualization of such a building prepared by the conservation architect, Partha Ranjan Das, is attached. It will be symbolic of the enhanced status of Presidency University and be visible from College Street. The ground, first, second and third floors of this tower block may be designed as a central open atrium, maintaining the visual connection between the two playgrounds. The next two floors may house a library with full glass façade allowing natural light into the reading room. The upper floors may house a conference center of the highest international standard as well as provide space for a range of academic and extra-curricular activities. The façade of the four upper floors of the tower block may be designed with features borrowed from the iconic parapet of the old heritage building.

A part of the additional space can be utilized for a Museum of Science and Culture to house old scientific instruments and cultural memorabilia of great value.

A CAPITAL CAMPAIGN

[Terms of Reference No. 12: To establish a University development office and recommend a process to vet private gifts for endowed chairs, research funds, fellowships, scholarships, and physical infrastructure that might augment government funding and grants.]

We reiterate our recommendations under this head. The setting up of a Vice-Chancellor's Fund to receive private gifts is a good beginning.

COOPERATION WITH OTHER UNIVERSITIES

[Terms of reference No. 13: To suggest cross-registration agreements with other universities and colleges and partnerships or exchanges with other research institutes in West Bengal and India.]

We had outlined possible cooperative arrangements with other institutions in our first report. Given the historical ties between Presidency College and Sanskrit College since the nineteenth century, we now recommend exploring mechanisms of recreating a special relationship between Presidency University and Sanskrit College, possibly as an affiliated college, in order to strengthen the study of Sanskrit as well as the classical and modern humanities.

INTERNATIONAL PARTNERSHIPS

[Terms of reference No. 14: To help create international partnerships and exchanges with select, outstanding colleges and universities in other parts of the world.]

We endorse the Vice-Chancellor's efforts to establish strategic partnerships with a few leading foreign universities. In addition to forging links with North American and European universities, it will be important to look east towards top Asian universities mentioned in our first report.

THE GOVERNANCE STRUCTURE

[Terms of Reference No. 1: To craft an appropriate governance structure for Presidency University enabling its most distinguished alumni to play a positive role in restoring it to a position of academic excellence.]

For a unitary university of the size of Presidency University, one Governing Board rather than a Court and a Council may be a more efficient and streamlined system of governance.

THE PRESIDENCY UNIVERSITY ACT

[Terms of Reference No. 2: To propose amendments to the Presidency University Act, as necessary, to facilitate achieving its goals of excellence and equity.]

We recommend introduction of appropriate language in the preamble stating the intention to develop Presidency University as a center of excellence. The relevant clauses may also be amended to give the faculty selection process recommended by

the Presidency Mentor Group a statutory basis. The transitory provisions of the Act need to stay in place until the appointed day.

STATUTES

[Terms of Reference No. 1: To revise and frame Statutes of the University as they relate to its governance structure, the process of appointing the Vice-Chancellor and other officers of the University, and the conduct of academic affairs.]

Once the government has passed the amendments it wishes to make to the Act, the PMG members stand ready to participate as members of the PU Council to help frame the first statutes. It would be important to recruit a critical mass of Presidency University faculty before the statutes can take effect. Since we hope a number of outstanding faculty will join in July 2012, the appointed day should be set some time during the academic year 2012-2013.

CONCLUSION

The Presidency Mentor Group looks forward with great anticipation to the unfolding of the faculty recruitment process. Members of the Group will remain in touch with one another and the Chairperson will maintain regular contact with the Vice-Chancellor and leaders of the state government over the next few months. The Chairperson wishes to record his deep gratitude to Professor Amartya Sen for his sage advice on all matters. The Presidency Mentor Group will have a formal meeting in July 2012 and submit a third report in January 2012 containing further observations and recommendations.

Acknowledgements

The Presidency Mentor Group offers warmest thanks to Professor Malabika Sarkar, Vice-Chancellor of Presidency University, for her gracious hospitality in Kolkata. We are also grateful to Dr P.K. Sengupta, Registrar, for facilitating our visits to the campus.

We are grateful to Shrimati Mamata Banerjee, Hon'ble Chief Minister, for the courtesy extended to the Chairperson and her swift decisions regarding the Distinguished University Professorships and the guaranteed annual supplements for faculty in the form of research and professional development funds as well as moving expenses for faculty from outside West Bengal. We thank Shri Amit Mitra, Finance Minister, for providing financial sanction for the above in record time. Shri Bratya Basu, Education Minister, and Shri Satish Tewary, Principal Secretary in the Education Department, have been receptive to new ideas.

We thank Shri Partha Ranjan Das, conservation architect, for his expert opinion on space and architecture and Shri Dipankar Deshmukh for his help in upgrading IT

services. The distinguished scholars in various disciplines who have agreed to help with our search and selection process have our most profound appreciation.

We welcome the public interest and support of our endeavor. A collective citizens' initiative is the best way to build Presidency University as a center of excellence in India and a world-class institution by 2017.

Sugata Bose (Chair), Isher Judge Ahluwalia, Abhijit Banerjee, Sabyasachi Bhattacharya, Swapan Chakravorty, Sukanta Chaudhuri, Nayanjot Lahiri, Rahul Mukerjee, Himadri Pakrasi, Ashoke Sen