



Georgia Institute of Technology

School of Physics

March 25, 1997

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Dr. Gary Schuster, Dean
College of Sciences
Campus - 0365

GEORGIA TECH
LEGAL AFFAIRS

Re: Evaluation of Dr. Shui-Nee Chow

Dear Gary:

The Chair Review and Evaluation Committee has met frequently throughout the Winter Quarter, 1997 to consider the case of Dr. Shui-Nee Chow, Chair of the School of Mathematics (SOM).

We have enclosed the following information along with a summary report of our findings which has been unanimously accepted by all the Committee Members:

- A copy of the letter sent to each faculty and staff member of the School of Mathematics. Eighteen written reports from faculty were received and two faculty presented themselves for personal interviews.
- The original copy of Dr. Chow's self-assessment
- My original report request and acknowledgment to Dr. Chow for his self-assessment

We are available collectively and personally to discuss any matter raised in this report with you, at your convenience.

Sincerely yours,

M. Raymond Flannery
Regents' Professor
Chair, Review and Evaluation Committee
Of the School of Chairs

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Review and Evaluation of Dr. Shui-Nee Chow as Chair of the School of Mathematics

The Chair Review and Evaluation Committee (Eval-Com) has carried out a review of the performance of Dr. Shui-Nee Chow as Chair of the School of Mathematics (SOM) according to the guidelines attached as Appendix A. As a result of this review, Eval-Com congratulates both Dr. Chow and SOM for the substantial improvement and impressive progress achieved during the past decade. SOM has successfully evolved from being a service department alone to also being a major U.S. research department. In a 1995 ranking of Doctoral Departments by the National Research Council, SOM is now ranked 44th (an increase from 74th) in terms of the scholarly quality of its faculty and first in terms of five-year improvement. In particular,

- SOM has raised its rank among doctoral departments in the American Mathematical Society from Group II to Group I in this period
- SOM has made some successful and quality hires at all levels
- SOM has streamlined and strengthened its mathematics curriculum
- SOM has increased the size and improved the quality of its graduate program
- SOM has implemented a successful interdisciplinary doctoral program in Algorithms, Combinatorics and Optimization
- SOM has improved its training of its teaching assistants.

Dr. Chow also deserves high praise for creating a high quality computer network and for hiring extremely competent secretarial, accounting and support staff. Eval-Com finds that the infrastructure of SOM is now well-established, sound and working smoothly.

Dr. Chow has certainly made key positive contributions to the above improvement of SOM, which has steadily progressed to a higher level of activity and scholarship under his leadership. The move towards excellence was already underway before Dr. Chow joined Tech in this enterprise and Dr. Chow presided well during this transition. Although Dr. Chow's influence and performance are both mainly positive, Eval-Com considers this progress can now be sustained without undue erosion only by implementing certain changes in the style of leadership and faculty participation. In the beginning of Dr. Chow's tenure there may have been a case for a strong director,

versed in slightly undemocratic ways. At that time (1989) this was presumably an appropriate method of operation which produced the highly effective results evident today. With the further development of SOM to its present state, there are now calls for changes that will favor inclusiveness and openness. Eval-Com encourages Dr. Chow to take steps towards greater faculty involvement in hiring, promotion and other SOM matters and to improve his collective interaction with the faculty as a whole. The important changes in the faculty that Dr. Chow has helped implement now require corresponding changes in the policies of Dr. Chow. Because the faculty have grown so strong and discriminating, increased awareness of and sensitivity to participatory government within SOM are now all the more urgent. Excellent faculty are not nurtured by nor are they receptive to what might have been appropriate in the past.

Although Dr. Chow's management style has been effective up to about 1993, there have been concerns raised regarding his present management. Eval-Com has uncovered several operational practices which seem to run counter to the Board of Regents' Guidelines and Institute Regulations. In addition, several items and controversial practices have arisen during Dr. Chow's administration and are beginning to erode the interaction between the Chair and his faculty and also between faculty members themselves. In order to stave off possible long-term harm, these issues should be confronted and addressed accordingly. Eval-Com has found that Dr. Chow's management

- A. Seems to run counter to certain (2) regulations of the Georgia Tech Statutes;
- B. May not implement certain Board of Regents' policies;
- C. Does not promote:
 - (i) Healthy faculty processes
 - (ii) Open and Collective Faculty Discourse and Communication
 - (iii) Balanced Organizational Structures
- D. May have caused unnecessary stress and confusion to SOM faculty concerning the inter-relationship between the School of Mathematics (SOM) and the Center for Dynamical Systems and Nonlinear Studies (CDSNS).
- E. May have already precipitated some erosion to the gains previously accomplished during the first four years of his tenure.

These points will be amplified below and possible solutions suggested.

A. Operational Practices

- (1) Statute: The Georgia Tech Statutes (2.5.9.3) state that the faculty of a department shall hold regular meetings no less frequently than once during each Academic Quarter.

Fact: At present SOM holds three (3) faculty meetings per year. Eval-Com finds this minimal at best, and quite inadequate to service the needs of a Faculty of 50 at SOM. Eval-Com would encourage more faculty meetings and greater collective faculty participation.

- (2) Statute: The Georgia Tech Statutes (2.5.9.5) also state that the faculty of each department shall establish an elected departmental committee which shall be composed of full-time members of the department, elected by written vote of the faculty of the department. The Chair of the Committee shall be elected from among the members of the Committee. This committee shall act as an advisory body to the Chair of the department on all matters concerning the welfare of the department. This committee is known as the Faculty Advisory Committee (FAC).

Fact: FAC simply does not exist in SOM. What does exist is an Executive Committee (Exec-Com) which has two (2) elected Faculty Members, one Faculty Member appointed by Dr. Chow and three (3) Administrators, including Dr. Chow who also sets the Agenda of this Committee. No vote is taken and the administrators' influence on the Committee is too strong.

In the opinion of Eval-Com, this Executive Committee does not fulfill the function or role of an autonomous Faculty Advisory Committee and is more akin to the personal cabinet of Dr. Chow, rather than a vehicle which must address Faculty Issues, Involvement and Development. This Exec-Com with its two (2) elected members out of a faculty of fifty (50) is quite inadequate to provide broad representation and coverage of the Faculty's evolving interests and concerns. The scope of topics considered by Exec-Com has been too narrow. FAC, as mandated by the Regents, does have the right to meet without the presence of any current administrators.

B. Regents' Policies

The Regents' Policies in the Statutes Appendices (3.3.1) are apparently not being followed or implemented in SOM. These policies require that

- Each faculty member will receive an annual, written review by their unit head.
- Each faculty member will discuss this review with the unit head and sign a statement to the effect that the faculty member has received the written review.
- Each faculty member will have the opportunity to respond, in writing, to the evaluation and to receive a written response from the supervisor to the comments of the faculty member. Both the faculty member's comments and the response will then become part of the record.

These procedures were adopted at most only for the non-tenured faculty but not for all of the remaining faculty.

C. Faculty Processes, Communication and Organizational Structure

(C.1) Processes

In addition to the Executive Committee, SOM has a Policy Committee, whose role is limited to running elections, two Promotion (Junior and Senior) Committees, and a fully-appointed Hiring Committee, which advises Dr. Chow on hiring matters. These Committees, with the exception of the Hiring Committee, do not encourage faculty participation in their decision-making processes. The faculty do not have a collective voice in matters of the School.

(C.1a) Hiring Process

Eval-Com finds that the results of previous hiring have been highly effective, but the procedures adopted can be made more inclusive of the faculty. The current hiring policy is mandated by Dr. Chow with no collective faculty input. The Hiring Committee does encourage faculty to submit their comments but then keeps this input confidential and is highly selective at explaining how their final decisions are made. A suitable hiring process acceptable to all of the faculty could possibly be designed by the new, recommended FAC in a manner deemed to be in the best interests of SOM but consistent with practices performed in other units. For example, an open policy would entail Faculty

Meetings whereby (a) the Faculty agrees which research areas are required for appropriate candidates, (b) the Hiring Committee invites open discussion of all the Candidates (whether invited for an interview or not), and whereby (c) a consensus is established on the candidates to be offered a position.

The whole hiring process practiced at SOM has recently become more divisive than necessary, in the following three areas.

(i) Many of the real or perceived problems are intimately connected to the close and unexplained interaction with the CDSNS. For example, one research group in SOM alleges bias towards dynamical systems and bias against hiring in its area. It is difficult to ascertain even the facts, since one person's probabilist is another person's analyst and one numerical analyst is another person's dynamical systems expert. Nonetheless, if this situation is not alleviated it is possible that one group will actively oppose the candidate of another group, much to the detriment of SOM.

(ii) A number of visiting appointments have been made by SOM. Not all are recommended by the hiring committee. Many others are made by the School's administration without faculty input and are, at times, to the detriment of visitors proposed through hiring-committee channels. The Chair is open to charges of favoritism for such appointments. Eval-Com was concerned by two cases where visitors, appointed by the Chair, were assigned to Faculty Members where there were already existing romantic relationships.

(iii) The School Chair has a responsibility to all branches of mathematics within his academic unit and not just those related to his own field and interests. It has been alleged that Dr. Chow has been less than responsive towards improving, via future hires for example, the area of Statistics in the department. There should be faculty involvement to decide whether or not Statistics remains a viable option at SOM and it should not be a decision made by Dr. Chow alone.

(C.1b) Nominations and Awards

All such nominations have originated from the Executive Committee of SOM. Eval-Com suggests that a School Honors Committee, operating independently of the School Chair, be established at SOM. This committee will then seek and identify candidates for nomination for the various honors and awards available to all Georgia Tech personnel.

(C.2a) Current Communications

Dr. Chow apparently interacts via a "binary" interaction with individual faculty members and decisions are then made. Very rarely, if at all is there any "collective" interaction with the entire faculty. Rarely is any collective consensus obtained or sought via open discussion of faculty meetings. This "binary" approach alone rather than a "collective or inclusive" approach is not conducive to the establishment of SOM faculty governance and does not promote healthy, frank and open discussion normally expected within an aware and collegial faculty.

(C.2b) Expected Communication

Eval-Com feels that Faculty processes should be more open and representative and that Dr. Chow should strengthen his interaction with the collective faculty. His management style may no longer be optimal for the quality, breadth, growth and changing nature of the current SOM faculty, and, as noted above, runs counter to established policies of the Board of Regents. In the current environment of Georgia Tech, a SOM Chair should exhibit the capability to persuade and to defend his decisions in an open forum before a collective faculty. Such open and inclusive leadership does currently exist in other schools at Tech where communication, participation, openness, mutual respect and understanding are all superior attributes required for an effective chair.

(C.3) Organizational Structure

The Chair, Dr. Chow, sets policy, but has delegated most tasks to Associate Chair Andrew. This includes drafting of critical letters (for promotion and tenure, evaluation and raises), handling student complaints, travel requests, etc. Andrew handles these tasks very effectively, but in the process may have acquired an undue amount of political power which has led to dissension and controversy. The chair should not delegate sensitive issues.

D. The SOM-CDSNS Relationship

The apparent absence of effective faculty processes and of open, inclusive and collective communication between the Chair and the faculty serves to add to the confusion and stress on the fabric of SOM as to the real relationship between SOM and CDSNS. Some SOM faculty believe that CDSNS is draining valuable SOM resources of time and money, being re-routed to it by the SOM chair. Dr. Chow is devoting substantial SOM support to CDSNS in the form of part-time teaching for CDSNS post-doctoral staff, without consulting the Hiring Committee to ensure that such positions are spread uniformly throughout SOM. This relationship also impacts on the Hiring Process (previously discussed).

A specific concern to many SOM faculty is that it has become an established practice that visitors and post-doctoral associates of CDSNS are offered part-time appointments in the SOM without undergoing the scrutiny of the SOM hiring committee. Thus, a considerable amount of SOM money is paid directly or indirectly for the activities of CDSNS. Yet, the CDSNS is not accountable to the School, nor does the Chair account for the CDSNS to the faculty, which by large majority are not associated with the CDSNS. Many SOM faculty feel that SOM subsidizes the CDSNS, at times at the cost of stagnation of their own enterprises or disciplines. Many faculty and visitors associated with CDSNS only teach advanced or special topics courses and are paid by SOM for their performance. The undergraduate and service courses must then be covered by the remaining faculty. Decisions on how to support the CDSNS activities are made entirely by Dr. Chow, who normally cannot be considered impartial to the activities of the CDSNS.

Since Dr. Chow's own area of expertise is in dynamical systems and because he came to Tech as the first Director to initiate CDSNS, his ability to serve as an Autonomous Chair of SOM is subject to question. Some faculty allege that loyalty to the two separate units is eroding his good judgment on what is best for SOM. He must take greater care to communicate to the SOM faculty the full extent of what is involved in the interaction between the two units and the conduct of what is required to do it. The SOM-CDSNS relationship needs greater exposure to the "light of day," so that SOM faculty can somehow understand and become more comfortable with this important relationship.

E. Possible Erosion

SOM lost perhaps its two best new hires: Dr. Bruno, a Presidential Young Investigator, and Dr. Xia, a Blumenthal Prize winner and the youngest full professor in SOM history. They both accepted attractive offers from better universities and so it is unclear whether their departure is indicative of any dissatisfaction with SOM. That such faculty are present at SOM is an indication of successful hiring and an indication of Dr. Chow's leadership in this regard.

Scholarly Activities

It is clear that Dr. Chow is a well respected member of the research community in his area. His research record is commendable and he is very active on editorial boards. Eval-Com would encourage Dr. Chow to participate more actively in the mathematical life of SOM, especially via teaching an elementary course from time to time and sharing his research results with other faculty and graduate students through seminars, colloquia, and special topics courses. Eval-Com would also encourage Dr. Chow to seek ways of representing the School more broadly by, for example, involvement with the administration and election to high office in national and international professional societies in the mathematics field.

Overall Conclusion

The School of Mathematics has recently come a long way in its reputation and professional output. Eval-Com finds that a vast majority of the 23 respondents of the mathematics faculty are generally satisfied with Dr. Chow as Chair, that the School has improved in stature, that infrastructure difficulties have been virtually eliminated and that SOM functions reasonably well. Dr. Chow deserves credit for overseeing the transition to this improved state. At the same time the Committee finds opportunity for improvement on the part of both Dr. Chow and the School faculty which should not go unheeded. Adopting more collective and inclusive procedures, and improvement of various operational procedures and Chair-Faculty relationships would result in considerable benefit to the overall health and vitality of the School. If these issues, discussed above, are addressed in the near future, Eval-Com feels that the School can continue to grow in stature and become even more of an asset to Georgia Tech. With a commitment to open communication, inclusiveness and to a faculty advisory committee, it looks as if SOM is about to embark upon its next phase of its growth, at the same or greater level of productivity as has already been achieved during the past decade.

CHOWREV