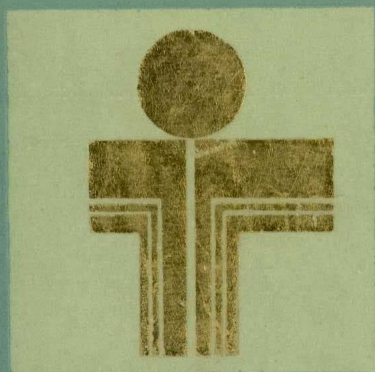


CUSPEA 十年

A DECADE OF CUSPEA

吴 塘 吴崇试 郭 萍 编



北 京 大 学 出 版 社

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内 容 简 介

中国-美国联合招考物理研究生项目(China-U. S. Physics Examination and Application Program), 这是一个由中美学者共同发起和组织执行的项目, 并得到我国政府的支持。自 1980 年以来, 十年中共有 900 多名中国学生通过这个项目赴美攻读博士学位。本书收录了有关人士对这个项目的总结、回顾等文, 同时收录了 CUSPEA 项目的全部物理试题及其解答, 读者可从中了解 CUSPEA 项目的全貌。

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前 言

时光荏苒，转瞬就是十年。

CUSPEA 项目，从开始实行到今年胜利结束，已经经历了整整十个年头。十年的时光，对于我们每个人来说都是十分珍贵的，而对于一个青年学者的成长来说，尤为可贵。十年中，国家通过这个项目派出九百多位同学出国留学。再有一个十年，我们可以期待，大家会学有所成，为祖国的四化大业和世界科学技术的进步做出新的建树。

三年前，科学出版社曾经出版过一本《CUSPEA 纪念册》，其中刊载了我们党和国家领导人及教育部、中国科学院的负责同志与李政道教授的一些往来信件，还有几篇文章。从中可以使我们对这个项目有一个清晰的了解和认识。因而，当今天出版《CUSPEA 十年》时，似乎已没有必要为此再说些什么话了。在那本小册子中，我曾经说过这样几句话：“邓小平同志说：‘四个现代化，关键是科学技术的现代化。没有现代科学技术，就不可能建设现代农业、现代工业、现代国防。没有科学技术的高速度发展，也就不可能有国民经济的高速度发展。’他还特别强调，‘科学的未来在于青年。’因此，如果说我国老一代的科学家曾经期望以科学救国，而现在青年们面临的任务，则是用所学的科学技术和科学管理的知识来建设祖国，或者说以科学建国，科学富国，科学强国。”今天，我仍愿以这几句话奉献给所有 CUSPEA 同学和广大的青年朋友们！

我作为这个项目的主持人之一，对于十年来为 CUSPEA 项目付

出过艰苦劳动的朋友们和同志们，表示诚挚的谢意。尤其是李政道教授，他倡导了此事，并且为此付出了比我们都要大得多的精力和时间。几乎可以这么说，如果没有李政道教授坚持不懈的努力，CUSPEA项目便不可能有今天这样的成就。在此，我们对他应该致以更加深切的感谢！

我一直相信：尽管今天我们的国家在改革的进程中出现了一些暂时的困难，或者在今后还会遇到一点什么风风雨雨，而我们中国一定会以一个强国屹立于世界之林。我们中华民族的青年总是爱国的。祖国是我们的母亲，中华儿女是不会忘记报效自己的祖国的，他们是会为祖国的振兴富强而献身的。这一点，也就是我们大家十年来所以一直热心于此的一个坚定信念。

1989年2月12日

FOREWORD

Yan Jici

Time has slipped by and now ten years have vanished! It has already been a decade since the beginning of the CUSPEA program to its successful completion this year. To each one of us, ten years is a precious period of time; to a growing young scholar, it is even of greater value. In the last ten years, China has sent more than nine hundred students to study abroad through the CUSPEA program. It is our hope that in ten years these students will be professionally established and will make outstanding contributions to the development of science and technology of the whole world as well as to the cause of the four modernizations of their motherland.

Three years ago, the Science Press published a commemorative album 《CUSPEA 纪念册》, in which were included some of the correspondence between Professor T. D. Lee and leaders of the Chinese Communist Party and the Chinese Government, some officials of both the Ministry of Education and the Chinese Academy of Sciences, together with some articles about this program. This book gives a clear picture and thorough understanding of the CUSPEA program; therefore, it seems unnecessary for me to say more in the new book, 《A DECADE OF CUSPEA》. In the Preface for the previous commemorative album, I wrote: "Deng Xiaoping recently said, 'The crux of the four modernizations lies in the modernization of science and technology. Without advanced science and technology, it is impossible to modernize agriculture, industry, and national defense; and without speedy development of science and technology, it is impossible to make further and rapid advances in the national economy.' He emphasized on several occasions that the future of science lies with the young. Therefore, if we say that the older generation of scientists expected to save

the nation through science, then the task of today's young people is to use their scientific knowledge and knowledge of scientific management to construct China. In other words, science constructs the nation, science enriches the nation, and science strengthens the nation." Today, I want, once again, to present these words to all the CUSPEA students and to all my friends of the younger generation.

As one of the sponsors of this program, I wish to express my heartfelt thanks to all of my friends and comrades who have contributed much of their time and energy to this program over the past decade. And, to Professor T. D. Lee, the person who initiated and designed this program and spent a lot more of his time and energy than any one of us for its implementation, I wish to extend my most sincere thanks. I may well say that without Professor T. D. Lee's unremitting efforts, the CUSPEA program could never have achieved so much.

It has always been my belief that even though at the present time there exist some temporary difficulties in the course of our country's reform and perhaps more twists and turns on our future path, we can be sure that China will be one among the giants in the forest of the world; and that because all sons and daughters of our nation are patriotic, they will not fail to live up to the expectations of their motherland, and will be sure to dedicate themselves to her prosperity and vitalization. It is for this unswerving belief that all of us on the CUSPEA Committee have devoted ourselves persistently to this program.

CUSPEA 十年

李政道

1988—1989年度考取 CUSPEA 的学生,现已都在美国的一些大学里安排就绪。为中国培养一代物理学家这一极其特殊的篇章,至此全部结束。

1979年,CUSPEA 项目开始选送了两批学生共18人赴美学习。这两次遴选是 CUSPEA 项目的雏型。受这两次成功经验的鼓舞,我在1980年展开了这个项目的全面招生计划,到目前为止,CUSPEA 学生共计有915人。参加 CUSPEA 的考生,大多数是通过客观性竞争考试预选出来的各大学毕业班的学生。由于中国政府和各大学的大力协助,以及美国一些大学的热情支持,尽管 CUSPEA 项目和中美两国的常规选派与招生方式截然不同,十年来进行得很顺利很成功。

现在回顾一下当时全面实施 CUSPEA 计划的情况或许是很有意义的事。1980年2月1日我向53所美国大学物理系发出过一封信,信上说:

“现特函商贵系参加为选录中国物理专业的研究生制定入学标准的工作。如您所知,中国尚未开始执行 GRE 考试,而大量中国学生愿来美国学习,无疑到明年人数还会增加。在这方面,哥伦比亚大学物理系已采取了一项临时性的招生措施,结果证明相当成功。如这项措施在美国大学里通用,可能也会比较有效。

我系采用的方法是自己命题,程度相当于研究生第一年的资格考试。……

我们所取得的成功经验令人相信,在中国执行 GRE 考试之前,我所谈的考试方法是可以在全国范围内推行的。参加今年秋季 CUS-

PEA 考试的学生,将来自1977年中国恢复了正规的高校四年制教育以来的首届毕业班。鉴于这一重要事实,我们深感我们物理系不应是唯一的能招收到中国高材生的单位。”

当时提出的该项方案原是临时性的,实际执行的期限比最初的设想要长得多。几年前中国开始了 GRE 和 TOEFL 两种考试。而且,过去十年里,在中、美两国,个人间与院校间的联系已大量建立起来。很自然,中华人民共和国的学生现在应该与其他外国学生办理同样的申请赴美入学手续。

诚然,由于 CUSPEA 所取得的成功,我们许多人都希望这个项目能继续为社会服务。但 CUSPEA 与中、美两国的常规招生方式均截然不同,使之延续进行,确需精心减少差异。最近几年,虽做过多方努力试图对这个项目加以调整,以期在1989年后仍能继续,遗憾的是,始终未能奏效。

回顾以往,我不禁想到 CUSPEA 项目与众不同的一些情况。有些已是众所周知,有些则不尽然。从美国方面说来,我们看到了美国一些大学的热情相助,为了使来自远方的异常优秀的学生入学,他们自愿放弃正规的招生方式。同时历年负责 CUSPEA 面试的教授们极其认真的工作态度给我们留下了深刻的印象。他们的工作使参加招生的学校准确地了解到学生的情况。不仅如此,他们每个人在面试中还特别注意考查了考生的个性特点。在中国方面,通过邓小平主席,方毅^①副主席,严济慈^②副委员长,以及黄辛白^③先生和吴塘^④先生,我们获得了中国政府的全面支持和中国高等院校的合作,从而持续长达十年之久。在这一期间,中国正经历着迅速的变革,CUSPEA 项目仍得以按计划顺利地进行,这是很可贵的。我个人认为,还应值得提及的是参加阅卷工作的中国物理学家们。每年在王竹溪^⑤、马大猷^⑥、沈克琦^⑦和赵凯华^⑧教授的带领下,六十多位中国物理学家参加了阅卷工作,考生就是由他们培养出来的。为了选拔最优秀的年轻人才使之得到国外很好的深造机会,尽管这意味着他们自己的学校有可能流

失人才，他们对 CUSPEA 项目始终如一给予无私帮助的精神是真正了不起的。这一点，会永远证实物理学家们之间的相互信任和友谊。

CUSPEA 学生的确代表了中国知识青年的精华，在全美国物理学界的帮助下，他们受到了第一流研究生教育的培养。在今后的十年或二十年，这些 CUSPEA 学者的贡献无疑将不仅对中国科学事业的发展，而且对国际物理学的发展会产生不可磨灭的影响。我们祝愿他们成功，并期待着这一独特项目的丰硕成果。

1989年3月于纽约

注：①方毅，现任全国政协副主席，曾任国务院副总理，兼中国科学院院长。

②严济慈，现任全国人民代表大会常务委员会副委员长，原中国科学院副院长，兼中国科学院研究生院院长。

③黄辛白，原教育部副部长，现任中国教育国际交流协会会长。

④吴塘，原中国科学院研究生院副院长，系 CUSPEA 办公室负责人。

⑤马大猷，曾兼任中国科学院研究生院副院长。

⑥王竹溪，原北京大学副校长。

⑦沈克琦，原北京大学副校长。

⑧赵凯华，北京大学物理系系主任。

A DECADE OF CUSPEA

T. D. Lee

The 1988—89 CUSPEA students have now all been placed at American universities. This then ends a very special chapter in the training of a generation of Chinese physicists.

The CUSPEA program began with two prototypes in 1979 which selected eighteen students from China. Encouraged by its success, I launched the full-scale operation the following year. By now, there are altogether 915 CUSPEA students. The CUSPEA candidates are pre-selected through an objective competitive examination while most are still in the last year of college. Thanks to the strong backing of the Chinese Government and universities, together with the enthusiastic support of the American schools, the CUSPEA system, though inherently different from the regular procedures in both countries, has functioned successfully for these ten years.

It may be of interest to remember the circumstances that started the full-scale CUSPEA program. A letter dated February 1, 1980 which I sent to a group of 53 American universities said:

“This letter is to invite the participation of your department in an effort to establish objective criteria for selecting graduate students in physics from the People’s Republic of China. As you

know, the GRE program has not so far been established in China. Yet there is a large number of Chinese college graduates who would like to come to the U.S. to study, and this number will undoubtedly increase by next year. During this interim period, the Columbia Physics Department has used a temporary procedure which has turned out to be quite successful, and which might work well as a general plan for American universities.

The method we have used is simply to provide our own examination, equivalent to the qualifying examination which our students take during the first year of their graduate work.

...Our good experience encourages us to believe that, for the period before the GRE program becomes available in the People's Republic of China, a system such as I have described might be useful on a nationwide basis. ...We feel this especially strongly in view of the important fact that the examination to be given this coming fall will be taken by the first class to complete the standard four-year college program since the re-establishment of regular university training in China in 1977."

Considering the provisional nature of that proposal, the program has lasted much longer than was originally envisioned. Both GRE and TOEFL became available in China several years ago. Furthermore a very large number of contacts between individuals and institutions have been established during the last decade. It is only natural that students from the People's Republic of China should now go through the same procedure as other foreign students applying to U.S. schools.

Of course, in view of the success of CUSPEA, many of us would like to see it continue to serve the community. Yet, because the CUSPEA

system differs in an essential way from the norm in both China and the U. S. , to maintain it on a steady course does require a substantial decrease of entropy. Over the past few years, several efforts have been made to restructure it so that it might extend beyond 1989. Unfortunately, none has worked out.

In looking back, several unusual aspects of the program come to my mind. Some are well known, some less so. From the American side, we have seen the enthusiasm and the willingness of the schools to waive their regular procedures in order to reach out to these exceptional students from a distant land. We have been impressed by the extremely careful work done by the successive CUSPEA interviewers so that accurate information about the students could be made available to all the participating universities; in addition, each of them made special effort to insure that the important human element was part of the process. From the Chinese side, through Chairman Deng Xiaoping, Vice Chairmen Fang Yi and Yan Jici, and Messers Huang Xinbai and Wu Tang, we were able to rely on the extraordinary assistance of an entire Government and the wholehearted support and cooperation of all Chinese institutions of higher education so that the CUSPEA program could be maintained without any compromise throughout a long period during which China underwent rapid change. On a personal note, it may be worthwhile to recall that each year the CUSPEA examination has been graded by a team of more than 60 Chinese physicists headed by Professors Wang Zhuxi, Ma Dayou, Shen Keqi and Zhao Kaihua. The college students who took the exams were trained by them. That these university professors would help unselfishly and consistently to select the very best young talent, to make it possible for them to receive the finest advanced training abroad, even though it means an inevitable draining of vitality from the home institutions, is truly remark-

able. This will always serve as a testimony to the mutual trust and fellowship between all physicists.

The CUSPEA students do represent the cream of intelligent youth from China and they have been helped by the entire U. S. physics community to obtain a first-class graduate education. Ten or twenty years from now, these CUSPEA scholars will undoubtedly make an indelible impact on the development of science in China as well as on physics internationally. We wish them success, and I am looking forward to the fruition of this unique program.

March 1989

New York