

CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA 91125

April 11, 1983

OFFICE OF THE PRESIDENT 340-32

TELEPHONE (213) 356-6301

Dr. Christopher E. Brennen
360 Olive Tree Lane
Sierra Madre, CA 91024

Dear Dr. Brennen:

I take pleasure in notifying you that the Executive Committee of the Board of Trustees, at its meeting on April 11, 1983, approved an increase in your salary to \$51,500 effective October 1, 1983, on an annual basis.

The Institute's contributions to your benefit programs will be adjusted in accord with your new salary and these will be detailed in the statement of benefits that you will receive later in the year.

We are fortunate to have the extraordinary faculty that we have, and the salary increase which has been approved for you represents only a part, but a tangible expression, of our appreciation of the contribution that you make to the Institute's continuing success.

Sincerely yours,



Marvin L. Goldberger

May 18, 1983

Dear Mum + Dad,

I guess I can't recall the last time I wrote - so I have even more to apologize for than usual. It seems that I am busier than ever and I find it hard to do anything when I come home except plod around the garden and do totally useless things like building my Jacuzzi. The last is virtually complete and in place. We have been cooling off in it lately and Patrick + his friends have been playing in it.

The kids Dana seems to be making a good adjustment to college. She has really enjoyed it - socially she has always been a live wire. The courses provided some shocks to her but she now seems to have adjusted quite well and we are very pleased with the way she is doing. Revell College of U.C.S.D. has a very rigorous and classical curriculum and she found ~~the~~ some difficulty initially in adjusting to the kinds of essays and reports required in the humanities courses. However she seems to have had little difficulty with the math + science courses. She also found a new boyfriend there - a very nice young pre-med - a senior. Kathy has also been doing well in school - she is not quite so naturally gifted as Dana but more than makes up for it in industry and tenacity. She was really excellent in the school musical, "Camelot" in which she had a speaking + singing part. We were quite surprised at how natural she was on stage - especially since she has always been the clumsy one. She also looked spectacular!!

I guess Patrick causes us a little more concern with his extreme high spirits + energy. Some fortunately, is now channelled into baseball and computers. He is one of the stars of his baseball team this year both as a pitcher and a batter. His pitching has been inspired at times but with occasional disastrous results. He is a better batter and leads the team in hits. His preoccupation with computers is fuelled by the fact that there is a small store in Sierra Madre which sells Personal Computers and the owner has the amazing patience to allow a small group of local kids to spend a great deal of time in the store programming the computers and playing video games on them. She (the owner) also instructs the kids. As a result Patrick spends a great deal

... never ...
D. is getting rather tired of her job as a bookkeeper and intends to back to university
to continue her M.E.A part-time but more of that below.

Next I have a confession and apology to make (not another one!). One of the best
undergraduate students I have had since I've been a professor is graduating (i.e.
getting a B.Sc) this year. She is a brilliant little girl called Beverly Robertson.
She is also a very nice girl who came to Caltech from the Yukon and has not ~~seen~~
seen too much else of the world. Her achievements have been such that she
won a number of ~~scholarships~~ scholarships to go to graduate school (toward a Ph.D.)
including a scholarship to Balliol College, Oxford. So the academic cycle
will complete itself when Bev goes over to Oxford this summer. Since she
doesn't know many people in Europe, I took the liberty of giving ~~the~~
her not only your address but also Mike's, Colin's, Jacques' + Christine's.
I thought perhaps that you or one of the others would be willing to put her
up for a few days should she visit Ireland during one of the vacations - I
suspect she might be rather lonely during some of the vacations. I assure
you that she is very easy to deal with socially - yet she is outstanding
academically and I expect great things of her.

Coincidentally Les Woods passed through here a few days ago during
on his way back home from New Zealand. It was amusing to talk
with him again.

Finally I come to the big news which motivated me to write to you.
Several months ago the Master of Students at Caltech decided to step down and I,
among other faculty members, were approached, interviewed and considered for this quite
influential and important job. Today it became official and I am to be the
next Master of Students at Caltech. Basically the job involves responsibility
for the housing, feeding and all other matters involving the students except
for academic matters which are handled by the Dean. The Master and the Dean
are jointly responsible for all undergraduate affairs and report directly to the
Vice-President. For the next few years this will take about one half of my
time - of course I will continue $\frac{1}{2}$ my research and a little teaching.
But I will spend the mornings in the Master's office overseeing a staff
of half-a-dozen pebs and the afternoon's in ~~the~~ my Professors office. It is
a major and singular responsibility and needless to say I am somewhat
apprehensive about it. But there was enormous support for me amongst

the students so I start from a good vantage point.

The job involves more than a change in what I will do at work. The Master's wife has also historically played a significant role and hence D's decision to quit her job. She is quite looking forward to her part in the job.

She is also looking forward to our moving. ~~The~~ The Master traditionally resides in a large house right next to Caltech (only the President and the Master enjoy such Institute housing). Therefore, we will be moving all our belongings into the Master's house about the end of July (in time for the next academic year). The house itself was donated to Caltech by a rich old lady many years ago. It is a rather attractive mansion with seven bedrooms, five bathrooms and a large living room, dining room, ballroom (with a monster pipe organ and billiard table), a swimming pool, lily pond, etc. Needless to say the kids and D. are really looking forward to the move. For the moment we intend to rent our present home ~~with~~ which should help financially since there will be no expenses for us in the Master's house (the Institute provides a maid and gardener).

For this reason I doubt that I will be able to go through with a trip to Europe this year. We had hoped that Dana (and perhaps Kathy) might be able to visit you this summer but a momentary shortage of funds may not make this possible.

Anyhow I've run out of news. A few other minor things. A group of students ~~has~~ under my direction ~~are~~ have completed a package of experiments which will fly on the Space Shuttle which is due to be launched on June 18 - so keep your fingers crossed for them.

Also I appeared again this year in the Caltech Student Musical. I played the old Scottish schoolmaster, Mr LUNDIE, in the musical ~~BRIDA~~ BRIGADOON which was fun but time consuming. Also my love to all - to Paula, Mike & Les (to whom I write next), Colin + Diane and all broods.

Love

Chris

ME 19 ABC

FLUID MECHANICS AND GAS DYNAMICS

C. BRENNAN

9 units (3-0-6) - first, second, third terms

responses received:	9	11	5
number enrolled:	30	28	26
lecture attendance:	96%	90%	98%
homework completed:	100%	99%	100%

hours per week spent on this course:

1-3	4-6	7-9	10-12	13-15	16-18	19<	nr	mean
0	3	22	0	0	0	0	0	7.9

	1	2	3	4	5	6	7	nr	mean
challenge	-	1	3	11	7	2	1	-	4.4
interest	-	-	-	1	3	14	7	-	6.1
text	-	-	-	-	-	-	-	25	-
homework	-	-	-	-	4	14	7	-	6.1
TA	-	1	1	3	3	5	-	12	4.8
recommendation	-	-	-	-	1	10	14	-	6.5
value	-	-	-	-	-	14	11	-	6.4
prof org	-	-	-	-	3	3	19	-	6.6
prof clarity	-	-	-	-	1	5	19	-	6.7
class rapport	-	-	-	-	-	7	18	-	6.7
prof questions	-	-	-	-	2	7	16	-	6.6
indiv rapport	-	-	-	-	-	11	14	-	6.6
prof enthusiasm	-	-	-	-	-	12	13	-	6.5
recommend prof	-	-	-	-	-	5	19	1	6.8

classes: SO:5 JR:15 SR:5
 options: AE:1 BI:2 ENG:22
 grades: A:5 B:4
 A:1 B:9 P:1
 A:3 B:2

8 comments, 5 comments, 4 comments

11 responses

5 responses

This was an excellent course (4)(2)(2), interesting material (2)(1)(0). Professor Brennan was a great lecturer (6)(4)(2), clear (1)(3)(1), organized (1)(2)(2), cared about students (2)(2)(1), was very receptive to questions (1)(0)(0). The homework was instructive (2)(2)(0). The tests were reasonable (0)(1)(0). Grading was fair (0)(0)(1).

It would be a good idea to include computer applications to analyzing fluid flows (1)(0)(0). The material was covered too fast (0)(1)(1). The midterm was too easy (1)(0)(0) and the final was too difficult (1)(0)(0).



Caltech's musical, *Brigadoon*, will finish off with four shows this weekend: Friday at 8:00 pm, Saturday at 2:30 and 8:00 pm, and Sunday at 2:30.

Brigadoon — A Mixed Review

Editor's note—I neglected to note in last week's paper that Gordon Smith's article concerning the musical was, like any preview, necessarily based on a dress rehearsal. What follows is a review of last Sunday's performance.

While one can get a sense of security by empathizing with actors in well-performed dramatic plays, last weekend's opening of *Brigadoon* gave one the feeling of watching a puppet show. The flashy costumes and energetic singing are most impressive. The acting is jubilant, the dancing enthusiastic (though still poor), and the story line complete. The entire production actually turns out to be quite a pleasant tidbit of sensory input that attempts to overwhelm but only succeeds in entertaining.

The production is interesting in that the orchestra is behind the stage. Though there seem to be no alternatives, this arrangement is bad in almost every major point. The music is occasionally good, but

whelmed by the occasional on stage instruments, especially the bagpipes. The singers and dancers can only see the conductor through a television monitor in the front row, though there do not seem to be any problems with timing. The play becomes noticeably less enjoyable with the quiet music, and this is quite disconcerting considering that the music itself is excellent.

The acting excels, though bumpy at times. Jacquie Fernandez as Meg and James Garvey give wonderful performances, and the scene that involves those two, "The Love of my Life," is really very good. Candi McCoy made a wonderful fantasy-like bride as Jean McLaren. Combined with Kim Cao as Fiona McClure, who looked exactly like Snow White, one felt he was laughing with a Disney flick.

When Don Fossgreen leaps around the stage in his dances with gusto, his continual pounding of the hollow stage floor

deed, the whole production suffered because of poor dancing. The choreography was good, but the dancers tended to be out of sync with each other and, in some cases, quite lost. But it certainly was not too poor to admire. The dancers load the stage with energy throughout their dances. In many case the enthusiasm gets to be too much to emotionally handle, and one must break down and cry to the world the dancing is actually not bad.

Overall, the play's pretty good. Go see it.

—Richard Doherty

CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA 91125

OFFICE OF THE PRESIDENT 204-31

June 8, 1983

TELEPHONE (213) 356-6301

Professor Chris E. Brennen
325 South Los Robles Avenue
Apartment 4
Pasadena, California 91101

Dear Chris:

Jim Morgan and I are very pleased that you are willing to serve as Master of Student Houses. It is an important job, and I am sure you will be the right person to work with the students.

For the record, the appointment is for five years, effective September 1, 1983, and carries an additional salary increment of \$7,000 per year which will be added to your salary as Professor of Mechanical Engineering.

If Robbie or I can be helpful to you, please let us know.

Sincerely,

A handwritten signature in cursive script, appearing to read "Murph", which is likely a shorthand for Marvin L. Goldberger.

Marvin L. Goldberger

November 1, 1983

Hello!

As soon as the Caltech News hit Palo Alto the phones were busy with Kent Hoester calling Art to tell him about the "Master from Magherafelt". Then Jay Kim told Art to read the Caltech News and everybody was so excited to know this great personality... we had a mini-reunion!! Congratulations, Chris - I hope there is remuneration involved in direct proportion to the number of students you have to deal with...!!! The article and picture were interesting.. and now we all know what you and the children are doing. That about your wife of twenty years? I trust that her life is getting easier and that she'll write a few lines at Christmas.

2.
Kent is now self-employed. He told Art that he earns \$100,000/year now. I'll believe that when he gets a new car, a new airplane or a sofa set on! Kent is a free man. His daughter married in the States and lives in Australia. Dawn never finished high school - a real disappointment to Kent and his parents. Dawn took a new mother; I hope her life is more stable. I see the Kims frequently. Eunice and Frederick are in the same class ^(4th) at school. Sarah and Janice are in second grade but for the first time different teachers. They still together a lot and are on the soccer team. Janguk quit in last January. My job continues to be boring but the personalities

(Barbara A. Peters, MD)

3.
work for are a fascinating lot.
My newest client is a young
woman doctor (29 yrs old), magna
cum laude from Yale, head of
ob-gyn residents at Stanford
after going through Stanford Medical
School with honors. She just
set up practice in July and the
money is rolling in & booked
solid until January. Barbara's
parents are both MD's. They
chose academic medicine and
I believe they are both at
UC San Diego where Dana is.
Parents were horrified when
their daughter opened a private
practice. I set up bookkeeping and
advise on financial matters.

I have eleven such accounts.

Am also selling tons of pearls
and 14K gold chains, earrings etc.
Someone ordered a '14K Rolls Royce
car key for Christmas. Imagine.
Art is fine - nothing exciting at
Lockheed. Ex car, Martha

Holywell Manor
Manor Road
Oxford England OX1 3UH
October 17, 1983

Dear Dr & Mrs Borenstein,

First, please excuse the terrible writing paper, but I have a bit of time at my desk and this is ALL I could find. I was sitting here thinking of you and decided I should write and let you know how everything is going.

Well - what a culture shock, to begin with in many little ways! I quickly learned to stay calm and open-minded, but I can see how one could very quickly become frustrated & disillusioned here, if one didn't make an effort to adapt. Anyhow, now my most serious problem is riding my bike in the rain - very unpleasant I think! I just let most things that could bother me just whiz by and try to ignore the bad points - seems to have worked, except, of course, for the damn rain!!! I knew it would rain a lot here, but it's still quite amazing to actually see it and to have to function in it. Oh well, I've always wanted to make like a duck... what a terrific opportunity.

We matriculated last Saturday - I think I was more dressed up here than I was at Caltech's commencement! Aside from the boring speeches from Dean, Masters, Bursar & Reverend, it was quite fun - there were lots of drinks parties afterwards! Guess what the weather was like? Right! We were photographed in pouring rain & high winds... Looks good and Oxford-ish!

I've made lots of friends at Holywell Manor - mostly students reading for their second degrees, but many of these are reading 2-year BA's since they are Rhodes Scholars (tons of these fellows here!). The Canadians in the Manor are most strongly represented (what a change!), followed by Americans, Australians, New Zealanders, South Africans (very touchy political debates about, and with, them, continuously), Germans, French, South Americans, Mexicans, Indians, and more - plus a few token(!) English & Scottish, and I haven't yet met an Irish person in the Manor... but there is a girl in medicine (graduate) in Balliol, from Belfast. Anyhow, it's quite like a little United Nations, what with all the nationalities, and all the politicians, economists, philosophers, lawyers, etc... Argue, debate, discuss - I feel overwhelmed by some of these people and their incredible ideas! But all this said, my favorite female friend, Gaynor Field, is reading for her D.Phil. in

I've made some good friends as well at Magdalen, where I also finally met the Molly Brennan (remember that party we had, and I gave you an invitation, Dr. B.?) She's very normal (aside from being Olympic-caliber in track, an honours engineer, and Rhodes Scholar studying Philosophy... brother!) The two new graduate students in my group are from St. Johns so I should be there sometimes. I apparently have a second cousin here (I haven't met him yet) in St. Antony's, as well as more friends in St. Anne's and New. I hope I can keep some of this up, as I wouldn't want to confine myself to the overseas manor students alone. I have been over to the College more than most people at the Manor & have made a few friends there - a couple of women engineers too!

I have been put in with an Engineering group emphasizing turbomachinery (and does work for Rolls Royce & Defence Dept.) Don Schultz is in this group, but my supervisor is Terry Jones (who asked about you.) I have an office & phone (246-561, ext. 29) but not in the main building on Parks Rd. It's the "annex" (more like a home for outcasts!) called Osney unofficially & I don't know the official name. It's (obviously) in Osney, other side of the railroad tracks & therefore a 25. min. walk from the manor or the Eng. Dept... So I bought a bike. This used to be the Oxford City Power generation Plant - big, noisy, dirty, one other girl (another grad student), where all the large, cumbersome equipment is used and/or kept. It sure seems like "practical" engineering - I asked for it! There are two groups who work over here: Turbo-machinery & Wind Engineering. Everybody is friendly and casual, and I think I'll quite enjoy working here. Once I get used to riding over here in the rain, I'll be positively content!

For the moment, my thesis topic is vague. It's called "Study of Fluid Injection Processes", and presumably I'll study the applications to cooling of turbine blades... They assumed I was here for a D.Phil., like almost all other graduates in Eng. Science. I told them right away that this may not be the case, but that if everything went well and I could "psyche myself up" to do a D.Phil. (a big decision in my mind), I would transfer to D.Phil. status instead of taking a Masters. Whatever I do, I've decided not to apply to other schools for a PhD for next year. If I decide to leave here with an M.Sc. ~~and~~ look for a job. I just don't want to get involved in the monumental hassle of grad school applications and lose out on precious time to be enjoyed at Oxford. I would, I believe, enjoy staying here longer than one year, in the non-academic sense, so if I can make a good go at research and enjoy it, I'll be happy. I'll be happy. I'll be happy.

This week I'm taking a Fortran course, 2-5 pm every day. I can say that I feel quite unqualified in this respect compared with the other new graduates and I'm happy Caltech is beginning to see the light in this respect. I'm attending two lectures that aren't thrilling, but there are better ones in a few weeks and next term. Right now I'm doing background reading - theses, reports, articles - but will soon begin working with another grad. student to learn how to operate the equipment he's using: isentropic light piston tunnel, complete with lots of fancy electronics that I'll need to understand thoroughly.

All in all, I think I'm going to enjoy myself in all respects, and secretly hope I turn out to be competent in research so I can happily stay on for a while - at least longer than one year.

I met Dr & Mrs Acosta in Berlin, and spent some very enjoyable time with them. Prof. Siekmann took me through his lab and spent time explaining about his work, and the Acostas kindly fed me a few times. It was great to see them! And I loved Berlin.

How are you enjoying being Master, Dr. Brennen? Do you both enjoy living in that almost-mansion (to me!) and always being so near to campus and all us crazy students, and so involved in everything that's going on in the houses? You must be putting so much time into it, and I hope you find it rewarding and not too exhausting, both of you.

I miss Joel a lot and most of the time... I really hope he made the right decision in staying at Caltech. It's strange to not have anybody around to share all the things that are happening with, both good & bad. I imagine I'll meet someone more special than the others here eventually, but I have a sneaking suspicion I'm using Joel as a yardstick, still, and most guys would have a hard time measuring up (both figuratively & literally!) Well, I guess time will heal it all... it's already four months that I've been gone though.

Please wish Donna well at school - hope everything is going well for her at UCSD. Being a university student really is lots of fun! And I hope Cathy & Patrick are well and happy too. It's been fun talking with you! Maybe one day soon you'll pay me a visit - it would be great to see you again in the not-too-distant future. Wishing you all the best,

Bev.

PS - It seems like the distant past to me, but I had

*"And we shall play a
game of chess,*

THE CALIFORNIA

TECH

VOLUME 85

PASADENA, CALIFORNIA / FRIDAY, DECEMBER 9, 1983

"Sing Noël"

A fine performance

The Caltech Glee Clubs, Chamber Singers, Chamber Orchestra and Double Brass Choir gave another fine performance in the annual "Sing Noël" at Beckman last weekend.

Both Glee Clubs have shown a definite improvement by concentrating more on the quality of their voices than the volume. Only the Hallelujah Chorus, inserted into the program as a "brief surprise," seemed unnecessarily weak. Perhaps if it had been part of the official program, it would have inspired more practice and greater enthusiasm. Of course, it is always hard to hear when everyone stands up in front of you.

Included in the evening were some excellent solo parts. Notably, Jacqueline Fernandez of the Chamber Singers sang a beautiful "Riu, Riu, Chiu." Also, Susan Cave was most impressive as the Shepard Boy, especially considering the difficulty of the aria.

Chris Brennan gave a very pleasant narration, although his part overburdened the second half. He never forced a word, instead inviting the audience to forget their surroundings and personally enjoy the little vignettes of song and play.

Unfortunately, the orchestra and brass choir did not match the voices in success. This was not so much due to quality of play, which was fine, but rather to the uneven distribution of instruments. There were far too many brass, especially trumpets, and these drowned out the much quieter strings. The violins in particular could barely be heard, which was a shame considering the beautiful string parts of the Hallelujah Chorus. Of course, more strings could not be added, as the stage was quite overcrowded already.

Also, although it is not fair to compare an annual event with its predecessors, a little more originality in the beginn-

ing and end seems appropriate. It is not always necessary for the combined voices to enter with those high-tech candles and conclude with "Silent Night" and a similar exit, although M.E. Caldwell's arrangement of Gruber's original "Still Nacht" is beautiful.

At the conclusion of Saturday night's performance, the entire stage received a well-deserved applause, especially Don Caldwell and Chris Brennan. It is a shame that Monica Roegler, conductor of the Women's Glee Club, did not appear to acknowledge the applause which was just as much directed towards her.

As a note on upcoming events, Preethi de Silva will be performing this Sunday in Dabney lounge at 3:30 pm. This free concert is a rare chance to hear the fortepiano, a beautiful sounding keyboard instrument almost entirely forgotten. This performance marks the beginning of the thirty-fourth season of chamber music concerts in Dabney lounge.

—Chris Meisl

Baske

Two wins; Lo

by Ath Man a

The Caltech Basketball team raised its stunning four win losses with victories and Pacific Christian sandwiched around loss to the Alumni.

The Beavers, ported by an enth crowd, defeated LI day, 65-58, pulling the victory after LI within one point at

Jim Helgren led with 17 points, enough to make him leader in the NAIA scoring race. Steven netted 13 points. Kyriakakis added Zanelli, slowed by a nevertheless comb Peebles and John some late free thro the victory.

The next day, fell to the Alumni, Zanelli scored 16 p Peebles and Helgre each. Bill Gustafs seven rebounds, and Dave Werntz s each, but for the th

Supercomputers at Tech

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Dan Ayk-
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and then
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ke sure it

SADENA
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MA 2 — The
EMA 3 —
Again (PG)
(PG).
EMA 4 —
ment (PG).

Pageantry, music enjoyed in Beckman Auditorium

By ROBERT D. THOMAS

Pageantry and music — two magical elements in Christmas — are on display at Beckman Auditorium this weekend as the Caltech Glee Clubs, Chamber Singers, Chamber Orchestra and Brass Choir present their annual "Sing Noel" Yuletide program.

On Friday night, Conductor Donald Caldwell and Assistant Conductor Monica Roegler led their forces in a stylishly conceived but unevenly presented program combining traditional music and unfamiliar — but pleasing — tunes with thoughtfully staged readings and sketches.

The memorable musical moments came from the soloists and choral forces, all of whom sang entirely from memory. The 12-member Chamber Singers, beautifully decked out in madrigal costumes, delivered highly polished, delightful renditions of several unfamiliar carols, including an anonymous 16th-century carol titled "Riu, Riu, Chiu" which featured a sprightly soprano solo by Jacqueline Fernandez.

The combined Glee Clubs offered clean, crisp renditions of the opening movement of Bach's

MUSIC REVIEW

"Magnificat," two selections from Daniel Pinckham's "Christmas Cantata," and two choruses from Handel's "Messiah."

Soprano Susan Cave delivered a powerful performance of the "Shepherd Boy" aria from M.E. Caldwell's "The Night of the Star."

As a counterpoint to the musical offerings, Rosana Gatti contributed a gentle, loving rendition of O. Henry's short story, "A Gift of Love," and a septet of children reminded the audience that Christmas is very much for the child in everyone. Chris Brennen's lilting narration and dramatic readings kept the program on a steady course.

The program's final performance is tonight at 8 p.m.

PASADENA
STAR NEWS

SUN, DEC. 4, 1983



Master from Magherafelt:

Irish-born Christopher Brennen heads Caltech's student houses

By Phyllis Brewster

Christopher Brennen credits unique circumstances for his being at Caltech — where he has just assumed the role of Master of Student Houses — rather than in County Derry, Northern Ireland, where, he says, he would probably have been a surgeon like his father.

However, a look at the facts indicates that the 41-year-old professor of mechanical engineering has had considerably more input into the direction of his life than have circumstances, no matter how unique. Among the contributing factors, in addition to scholastic aptitude, are an engaging personality, high spirits, a fine sense of the dramatic, good humor, and a sincere regard for other people.

Admittedly, it is unique that his relatives are the only *en* Brennens in the Ulster phone book of two million names. But that isn't one of the circumstances that brought him to southern California and the Institute.

Brennen's earliest memory is — at the age of two — hiding under the

dena High School, where their second daughter, Katharine, is currently a junior. Son Patrick just finished the fourth grade at Loma Alta Elementary School.

From Magherafelt to Oxford University, where Brennen studied for six years, is a journey of about 400 miles; but psychologically it was much further for a young man from the Irish countryside. "I was just an Irish yokel," says Brennen, "and I

the reason he was assigned to Balliol was that when he was asked to indicate the colleges of his choice in order, he didn't know about any of them, so he simply listed them alphabetically. "I was lucky to have inadvertently chosen one of such high academic standing," he says.)

Six years later, by 1966, Brennen had earned a BA (with First Class Honors), an MA, and a DPhil in engineering science from Oxford.

sometimes lose track of the importance of other aspects of a university education."

In addition to a commitment to preserve and enhance, what other reasons does Brennen have for agreeing to take on responsibility for the well-being of some 860 Caltech undergraduates?

"I think that the enjoyment I get from dealing with the 30 to 40 students I have each year in my introductory engineering classes can be extrapolated by an order of magnitude to include the entire student body."

Brennen also expresses the desire to "do something different" from his regular routine of teaching and research. He is very concerned to do what he can to improve the quality of life in the student houses, and one improvement he has in mind is sure to be popular among Caltech students. "A week's break at Christmas is really not enough," the new master believes. "After ten weeks of intensive study, students need a longer rest."

Brennen also hopes to see more undergraduate women on campus, though he is not sure how or how soon that might be accomplished. When he was an undergraduate he was engaged to Doreen Kerr (now his wife of 20 years), and although Doreen was attending Queens University in Belfast, they managed to see each other often.

From Oxford to Caltech was not a big a step as from Magherafelt to Oxford, though the mileage is many times greater. Brennen was working

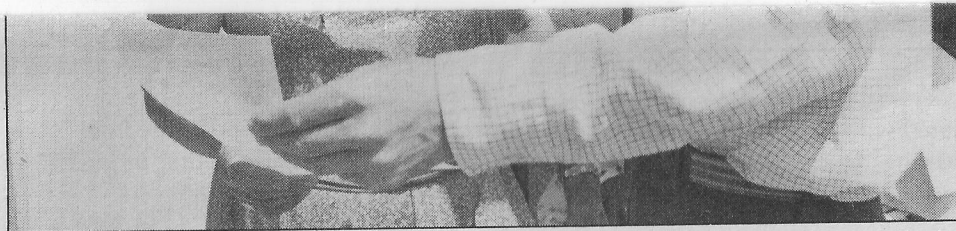


Initiating Chris Brennen into the rites of master of student houses is Carmela Kempton who has

...unitedly, it is unique that his relatives are the only *en* Brennens in the Ulster phone book of two million names. But that isn't one of the circumstances that brought him to southern California and the Institute.

Brennen's earliest memory is — at the age of two — hiding under the Anderson table in the living room when Belfast was being bombed, before he and his mother were evacuated to safety in the Northern Ireland countryside. It was 1942 and Germany was trying to break the British convoy system, of which Belfast was an important part.

After the war Brennen's family settled in the village of Magherafelt — the geographical center of Northern Ireland. There young Chris grew up, and there went from the first through the twelfth grades in the only school in Northern Ireland where Catholic and Protestant boys and girls were in school together. The experience gave Brennen a high regard for the mixtures that make up the public school system, a regard he continues to have. The Brennens' oldest daughter, Dana, now at UCSD, attended Pasa-



Initiating Chris Brennen into the rites of master of student houses is Carmela Kempton who has shared the responsibilities of that office with the past three masters — Sunney Chan, Jim Mayer, and David Smith.

surprised the heck out of everyone by getting a mathematics scholarship to Oxford."

Brennen gives credit for that to his high school math teacher, Dr. A. E. Gwilliam, who, he says, "gave us a tremendous amount of material," and who encouraged the 18-year-old Brennen to try for the Oxford scholarship and then tutored him for the competition.

Settling in at Balliol College was a culture shock of the first magnitude for the Irish outsider. "Most people barely understood what I said," Brennen remembers. (He claims that

And he had learned something else that he values highly. "There's a great deal more to education than being able to do the school work," he says. "When I look back on my undergraduate experience I realize just how much I learnt from my extracurricular activities — rugby, cricket, the Oxford University Dramatic Society, the Experimental Theater Club, and the Junior Common Room Committee (student government) of Balliol.

Love of acting influenced Brennen's college life considerably. He once toyed with the idea of becoming a professional actor, and he is still attracted to the stage. Last spring he dyed his hair white for the role of Mr. Lundie, the schoolteacher, in Caltech's production of *Brigadoon*. (Six years ago he played Lt. Brannigan in *Guys and Dolls*.)

"The values that can be derived from extracurricular activities are the qualities of education that we need to preserve and enhance at Caltech," says the new master. "We are so academically oriented here that we

wife of 20 years), and although Doreen was attending Queens University in Belfast, they managed to see each other often.

From Oxford to Caltech was not a big a step as from Magherafelt to Oxford, though the mileage is many times greater. Brennen was working for the National Physical Laboratory near London in 1967 when he met Caltech's Ted Wu. Wu invited Brennen to "come out for a year." That year was 1969, and the Brennens have been here ever since, though they make regular visits back to Northern Ireland where Brennen's two brothers, one sister, and parents are still living.

Brennen had been fascinated by life in the West a few years before he came to Caltech, however. In the summer of 1963 he worked his way across the country, with the help of a travel grant — an adventure which included living with a trade union agitator in Detroit and the owner of a chemical company in Chicago, as well as a two-week stint as a cowboy at Ft. Union Ranch in New Mexico.

At Caltech, Brennen was at first a postdoc, working with Professor Wu in biological fluid mechanics and on the behavior of tsunamis. Later he joined Allan Acosta in developing a lab for research on problems of pumps for space propulsion machinery — work they are still involved in together. "Chris has made a number of significant contributions in this area of research that are known around the world," Acosta says.

Brennen's current research also includes the problems of three-phase flows — mixtures of air, water, and solid material — problems that he is working on independently at Caltech and JPL. In 1978 he was awarded the R. T. Knapp Award by the Fluids Engineering Division of the American Society of Mechanical Engineering (ASME) for the outstanding paper in fluids engineering in 1976/77, and in 1981 he again received the Knapp Award for his paper on hydraulic systems. In 1982 he was chosen by the Caltech students as one of the seven members of the faculty to receive an award for teaching excellence.

Since the master's job is half-time, and Brennen intends to continue teaching his graduate course in Two Phase Flows, and, of course, to keep up his research, "... he's going to be busier than a one-armed paper-hanger," Acosta predicts.

So a new scene begins in the drama of masters at Caltech. Just as other acts bear the individual stamp of the men who were masters here, the new one will have traces of influence from Rainey Endowed School of County Derry, Balliol College, and even the stage of the Oxford Playhouse.

Curtain going up!

OCT. 1983

The New "Mosh Frosh"

Chris Brennan talks about his new job

by Biffalo

The tall, slender man spoke in a soft voice, with a distinct Irish accent, eyeing students with a warm facial feature, in a small dining hall of Camp Fox. As he told the story of an engineer's humorous experience he provoked numerous laughs and smiles in the audience. The man was Chris Brennan, the new Master of Student Houses, or the "Mosh Frosh" as he refers to the new position.

Prof. Brennan is originally from Belfast, Ireland, and graduated from the University of Oxford. After receiving his Ph.D., he worked at a government lab, the National Physical Laboratory located near London.

It was about this time that he came across Caltech professors working in his line of work, and got a general impression of the institute. When he was invited to Caltech by Prof. T. Wu, he accepted the offer and arrived here in 1969 as a research fellow.

Concerning his decision to come here, he explained, "It was the opportunity to do research with people who are at the very top of the field in the world and I was attracted by the highly intellectual and scientific atmosphere."

His stay, originally intended for one year, became a two year stay, then three...and as time drifted, he became a research associate, then a professor, and now a MOSH. He commented, "I became involved with students and developed personal relationships within Caltech and outside of Caltech

in the scientific community, which inevitably does happen over time. It would be very difficult for me to see moving somewhere else and starting all over again."

As a professor and a faculty advisor, he enjoyed the numerous contacts with students, and said he, "I derived a great deal of satisfaction in interactions with students, both in the context of the classroom and in social contexts. He added, "I've always had an interest in their [the students'] welfare."

When the opportunity of becoming the MOSH arrived, he accepted the position, hoping to do what he enjoyed doing at a larger scale. He stated, "I felt I could contribute to the welfare of the undergraduates here, and it was a challenge that I accepted. I also hope to help individuals in difficulties."

Concerning his job so far, he commented, "I'm still in a learning process, and a great deal of my efforts have gone into getting to know more students and getting to know what goes on within the social contexts of the students." He has done this through speaking to audiences and individuals, and by participating in Rotation.

Concerning the somewhat bizarre but fun atmosphere of Caltech, Prof. Brennan expressed approval, saying "I think high spirited students anywhere go beyond what would otherwise be called reasonable behavior." In fact, he recalls a rather embarrassing personal experience of his own

as a student:

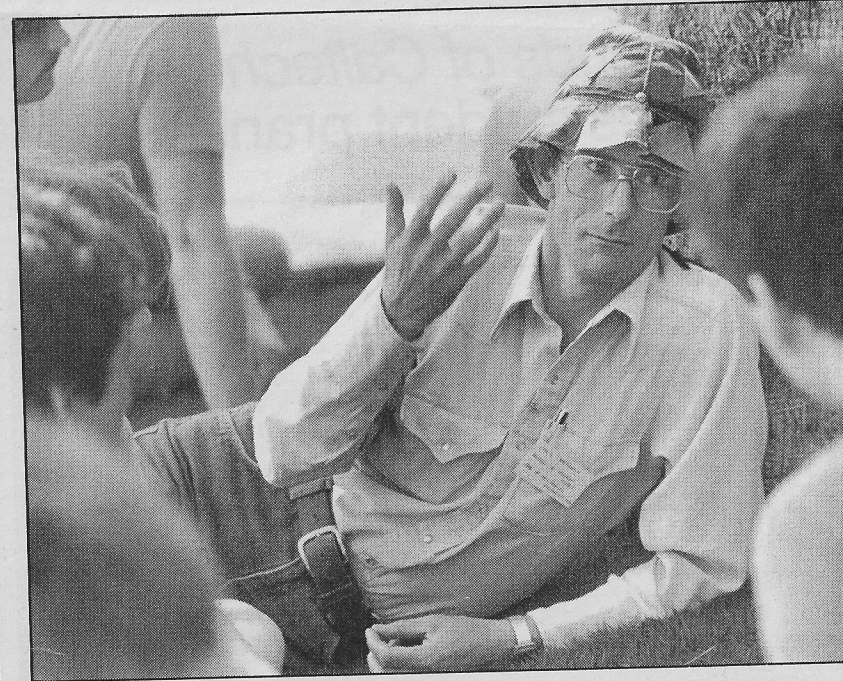
"After one particular lively party...there was this fire escape. But this was not a normal escape, and you would hang onto a handle attached to a rope outside the room and you're lowered four stories down. As I was going down, I heard a voice from below, 'This is not a particularly satisfactory way to meet, Mr. Brennan.' It turned out that it was the dean...I did receive a series of admonitions later on."

When asked if green was his favorite color, he responded, "politically, I ought to answer 'yes' but in fact, it's really not. Most of my shirts are blue, and I would have to say blue is my favorite color, judged by the facts."

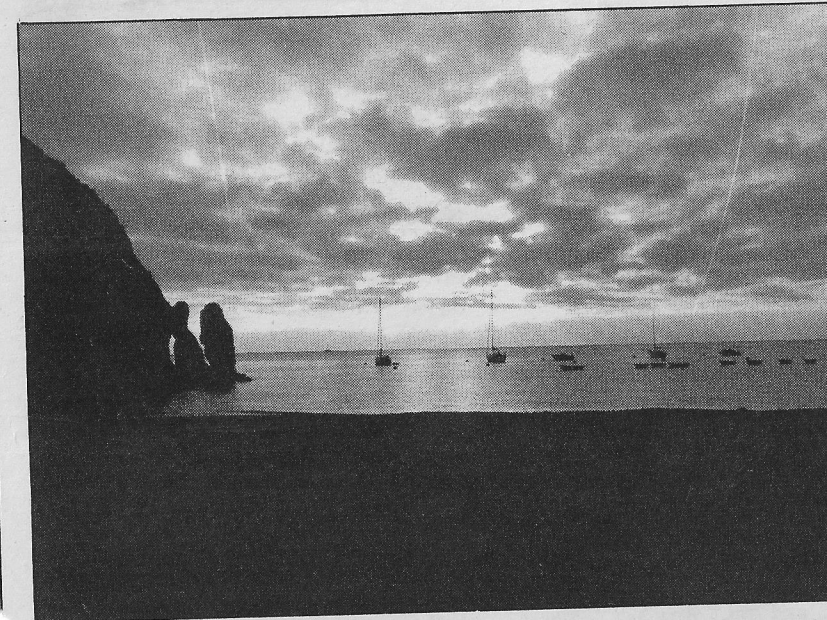
So far, Prof. Brennan has enjoyed the numerous contacts with students, in both new and old acquaintances. Yet he somewhat regrets not being able to interact on an individual level as frequently as he had in the past.

Regarding his goals as the MOSH, he stated, "One of my objectives is to try to encourage a wider spectrum of activities in Caltech. It's so easy here to work very hard indeed, in some cases too hard, in my opinion. For example, the breaks they get are inadequately short. Despite that, I'd like to do everything I could to offer a wider range of intellectual and cultural activities that are available to Caltech students. That's a general statement that is easy to state, but that summarizes my long-term objectives."

Freshman camp launches new student



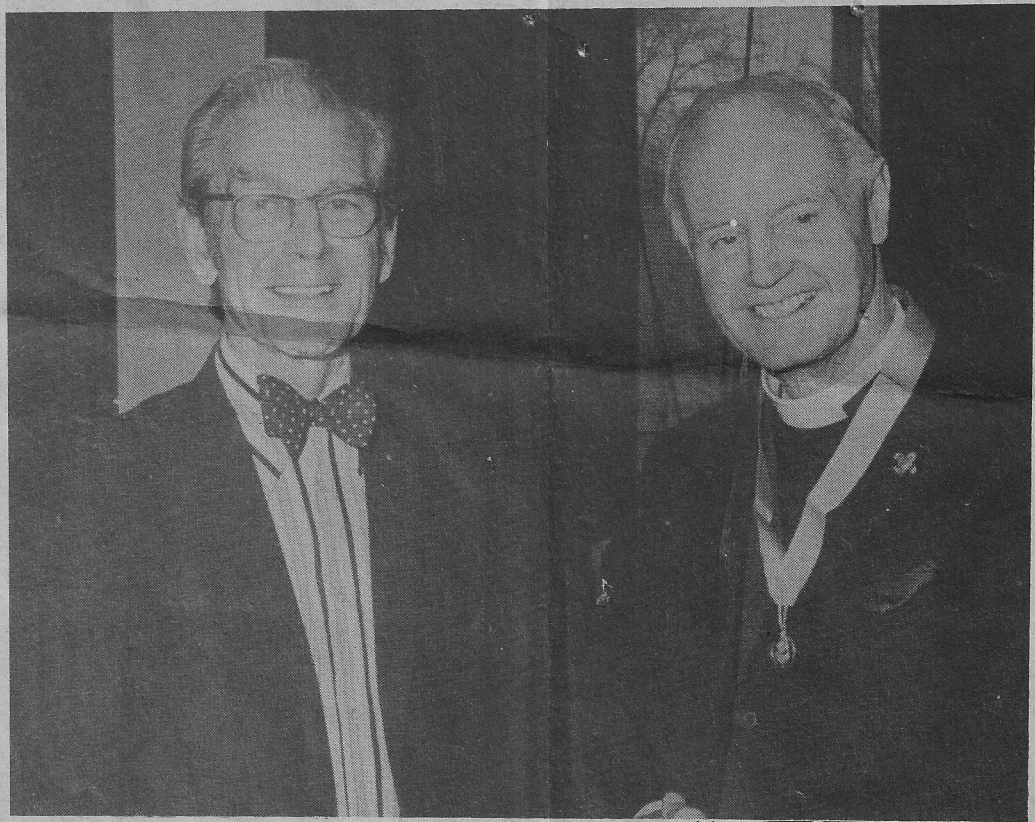
Catalina Island played its traditional role in the orientation of Caltech freshmen, met at Camp Fox with a wise core of Institute veterans consisting of upperclass students, faculty members, and administrators. Above: Christopher Brennan, master of student houses, with new freshmen. Below: Sunset creates a scene familiar to alumni of Freshman Camp.





To mark the fact that the Beaver Scouts have been recognised as part of the National Scout Movement, Richard Savage (left), and Garth Duncan, members of Three Spires Beaver Scouts are pictured making a presentation of a painting to Chief Scout Commissioner, Mr. Brennan. Mr. Brennan was a founder of the Beavers in Magherafelt and was a strong instigator behind the Beavers being recognised as part of the National Movement.

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Mr. W. M. Brennen, Chief Commissioner of Scouts for Northern Ireland (left) who presented Canon H. A. E. Egan with a silver acorn in recognition of his services to the Boy Scout Movement.

CALTECH'S ANNUAL MUSICAL
RAMO AUDITORIUM

Brigadoon

by ALAN JAY LERNER and FREDERICK LOEWE

FRIDAY, APRIL 8 / 8 PM
SATURDAY, APRIL 9 / 2:30 PM*
SUNDAY, APRIL 10 / 2:30 PM
FRIDAY, APRIL 15 / 8 PM
SATURDAY, APRIL 16 / 2:30 PM & 8 PM
SUNDAY, APRIL 17 / 2:30 PM

\$8.50 Reserved Seating 8.00
CIT/JPL Faculty & Staff: \$7.50 7.00
CIT Students: \$5.50 5.00
Other Students: \$7.50 6.00
Group Rates Available

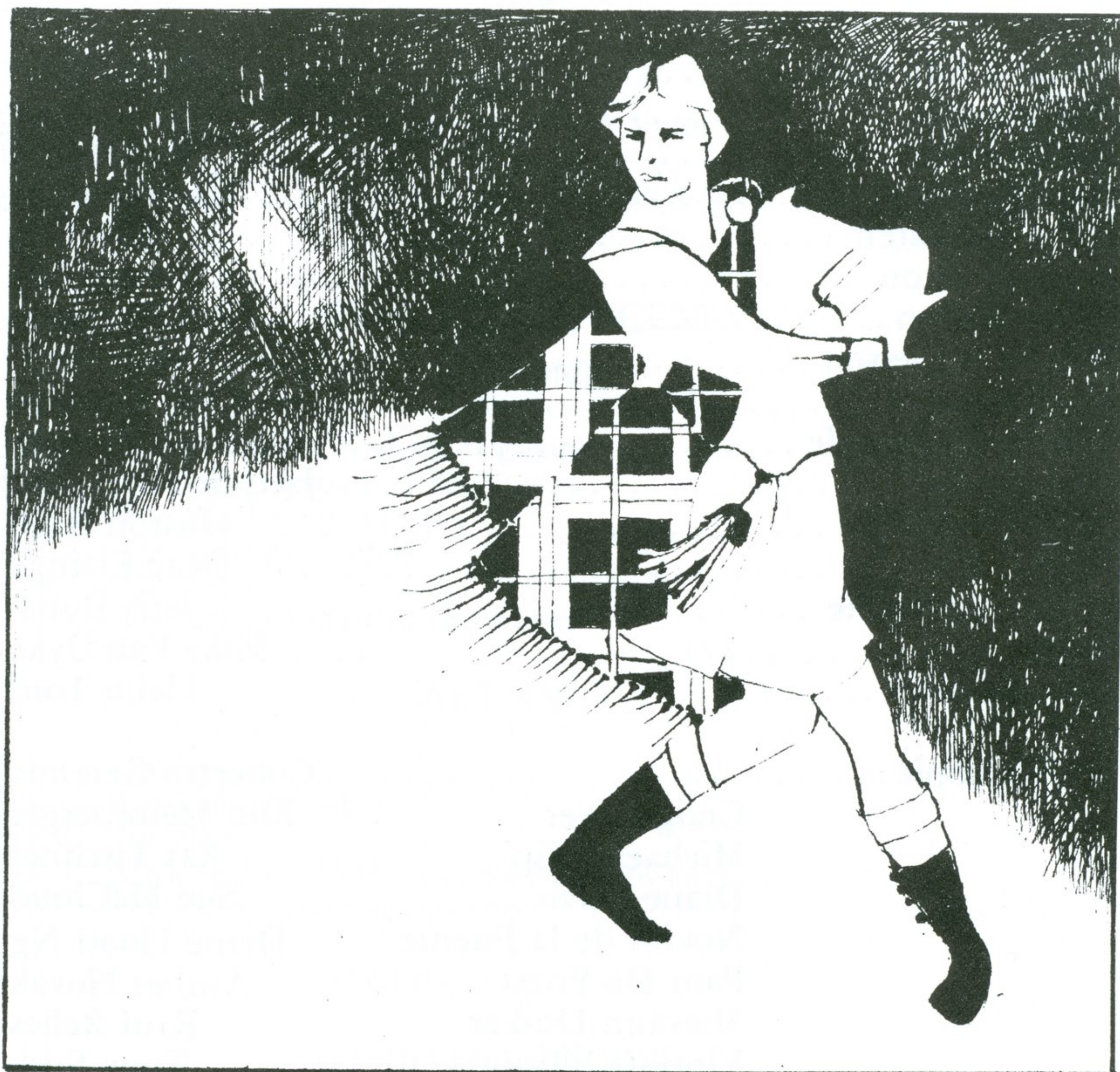
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OR WRITE: TICKET OFFICE,
CALTECH (332-92), PASADENA, CA 91125

*(The April 9th performance will be interpreted for the
hearing-impaired)

Sponsored in part by the Caltech Committee on Institute Programs





Brigadoon

Music by Frederick Loewe
Book and Lyrics by Alan Jay Lerner

This musical show is produced by special arrangement with and the music and dialogue material furnished by TAMS-WITMARK MUSIC LIBRARY, Inc., 560 Lexington Avenue, New York, N.Y. 10022.

CAST

Tommy Albright	Peter Felker
Jeff Douglas	James Garvey
Andrew MacLaren	Colin Gordon
Jean MacLaren	Candi McCoy
Fiona MacLaren	Kim Cao
Archie Beaton	Al Hibbs
Harry Beaton	Don Fossgreen
Maggie Anderson	Pat Houseworth
Mr. Lundie	Chris Brennen
Charlie Dalrymple	Kenneth Graham
Meg Brockie	Jacquie Fernández
Angus McGuffie	Huston Horn
Sandy Dean	Dean Elzinga
Stuart Dalrymple	Jerry Burch
Frank	Mike Van Dyke
Jane Ashton	Elaine Ford

Townspeople	Concetto Geremia
	Erin Helmberger
	Ray Lischner
	Sue McCloud
	Diane Hood Ng
	Amber Novak
	Raul Relles
	Tony Stirk
	Karen White
	Craig Boyer
	Michael Crisp
	Diane Davis
	Noemi de la Puente
	Pam De Priest
	Shevaun Duiker
	Virginia Ellison
	Kathy Eriksen
	Ron Franz

Dancers	Jerry Burch
	Michael Crisp
	Kathy Eriksen
	Elaine Ford
	Ray Lischner
	Karen White

Sword Dance	Don Fossgreen
Funeral Tribute Dance	Pat Houseworth
Fishmonger	Kathy Eriksen

Special Appearances	Jim Morgan
	Ned Munger

RAMO AUDITORIUM

Fri. April 8 8pm

Sat. April 9 2:30pm

Sun. April 10 2:30pm

Fri. April 15 8pm

Sat. April 16 2:30 & 8pm

Sun. April 17 2:30pm

SYNOPSIS OF SCENES

ACT ONE

- SCENE 1. A forest in the Scottish Highlands
- SCENE 2. The village square of Brigadoon
- SCENE 3. The Brockie open shed
- SCENE 4. The MacLaren house
- SCENE 5. Mr. Lundie's
- SCENE 6. The village square of Brigadoon

ACT TWO

- SCENE 1. The forest
- SCENE 2. A road in Brigadoon
- SCENE 3. The glen
- SCENE 4. A bar in New York City, four months later
- SCENE 5. The forest—three nights later

The time is the present

MUSICAL NUMBERS

ACT ONE

Overture
Prologue
Brigadoon
Down on MacConnachy Square
Waitin' for My Dearie
I'll Go Home to Bonnie Jean
The Heather on the Hill
The Love of My Life
Jeannie's Packin' Up
Come to Me, Bend to Me
Almost Like Being in Love

Orchestra
Chorus
Chorus
Chorus
Fiona and Women
Charlie and Chorus
Tommy and Fiona
Meg
Women
Charlie
Tommy and Fiona

ACT TWO

Chase
There But for You Go I
My Mother's Weddin' Day
From This Day On
Finale

Men
Tommy
Meg and Chorus
Fiona and Tommy
Company

SYNOPSIS

Brigadoon is the story of the magical encounter of two 20th century Americans with a mysterious 18th century Scottish village which is fated to reappear in the real world one day every hundred years.

ACT ONE

Lost hunting in the highlands, Tommy Albright and Jeff Douglass stumble upon a village, not on the map, called "Brigadoon." At the village square that sunny May morning Tommy meets a pert and lovely lass named Fiona MacLaren, who is busy helping her sister, Jean, prepare for her wedding to young Charlie Dalrymple, which is to take place that evening. Fiona, the older, is not married but is, as she says, "waitin' for my dearie." Jeff catches the eye of Meg Brockie, the town flirt, and is immediately swept off for some refreshment at the local tavern. Tommy, intrigued by the talk of a miracle, the odd quaintness of the town and his sudden attraction to Fiona, joins her as she goes out in the hills to gather some heather for the wedding.

Returning to the MacLaren house later that day Fiona leaves Tommy while she helps Jean dress and Jeff appears recounting an unusual day spent in the company of Miss Brockie. Tommy's glance falls on the MacLaren family Bible which Charlie had signed earlier, and he is stunned to see the wedding date listed as 1782. When he presses Fiona for an explanation, she takes him to Mr. Lundie, the schoolmaster, who is the only one who can explain the mystery of Brigadoon to strangers. Lundie reveals that Brigadoon was miraculously blessed and will only appear one day in every hundred years. No villager is allowed to leave, or the enchantment will be broken and the town will disappear forever. A stranger may stay only if he falls in love with someone of Brigadoon.

All go to the wedding, and the celebration is disrupted when Harry Beaton, Jean's broken-hearted suitor, decides to leave Brigadoon and destroy the town.

ACT TWO

The men chase Harry and he is stopped from his terrible intention, but only when he falls to his death from a high cliff. The men decide not to tell the others, but to let them discover the truth the next day. They return to the Glen where the wedding celebration is in full swing. Tommy tells Fiona that he is in love with her and wishes to remain in Brigadoon. Mournful piping interrupts the festivities as Archie Beaton, Harry's father, appears carrying the body of his son. Tommy tells Jeff of his intention to remain, but then discovers that Jeff was the inadvertant killer of the runaway. The shock of his friend's confession, and Jeff's persuasion that the whole experience is a dream, makes him doubt Fiona and Brigadoon, and they decide to return to America.

Disenchanted and haunted by the memory of Fiona, Tommy spurns Jane, his New York City fiancée, and convinces Jeff to return to Scotland. . .

ACKNOWLEDGEMENTS

We would like to thank all of the staff of the Office of Public Events for their help and encouragement, with special thanks to: Jerry Willis, Tom Lehman, Dave Spellman, Chris Harcourt, Deborah Jo Fishler, Debbie White, Cara Stemen, Suzette Cummings, and Kitty Macdonnell.

We would also like to thank the following people and organizations for their generous support:

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Robert Gang
Greg van der Werff
Jan Glaviano
Ann Skipper for dance coaching
Sue McCloud
Caltech Y
Shirley Marneus and Theatre Arts
Duncan Mahoney
Marc Otto
Jim Morgan
David Mack
Don Browning
The California Tech
Pat Houseworth
Lyman Bonner
Christy Johnson

The Saturday April 9 matinee will be interpreted for the hearing-impaired.

Sponsored in part by the Caltech Committee on Institute Programs

ORCHESTRA

Violins

Michael Chwe
Elizabeth Harrington
Lisa Grubbs
Mark Ross

Viola

Dan Zirin

Cello

Steven Strand

Flute and Piccolo

Tom Skelton

Clarinets

Conrad Josias
Trudi Wreede

Oboe

Sarah Santoro

French Horn

David Hodge

Trumpets

Randy Tivens
Allan van Asselt
Carl Schultheisz

Trombone

George Pitt

Piano

Tetsuo Fukuchi

Percussion

Steve Thomas

Scottish Fiddler

Colin Gordon

Bagpipes

Richard Cook

Stage Crew

Matt Duiker
Steve Martin

Set Crew

Peter Felker
Don Fossgreen
Ron Franz
Jim Garvey
Jim Houseworth
Ray Lischner
Mike van Dyke

Light Crew

Kurt Andersen
Mike Hedblom

Properties Crew

Susan Berkley
Rennie Dudeck

Wardrobe Crew

Shevaun Duiker
Virginia Ellison
Dottie Weeden

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Jacquie Fernández

Director
Donald Caldwell

Music Director
Wendy Caldwell

Choreographers
Jimmie Lomath
Jane de Burlo Uliana

Production Coordinator
Business Manager
Jane de Burlo Uliana

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Promotion
Dean Elzinga
Jacquie Fernández
Kenneth Graham

Costume Mistress
Shevaun Duiker

Properties
Noemi de la Puente

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Scottish Country Dance
Rehearsal Coach
Ann Skipper

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Leslie Brandon

WE WOULD LIKE TO
ACKNOWLEDGE THE FOLLOWING

CAST

Child Rachel Moser

Special Appearances Loretta Novak

Lew Allen

Marvin Goldberger

David Morrisroe

Dwain Fullerton

Harry Gray

Abel Ramirez

ORCHESTRA

Cello

Kristi Wreede

Crew

Tom Skelton

Drew Cushman

Steven Trainoff

Phyllis Li

Bao Cao

Howard Johnson

David Schiller

Lights

Mark David Nielsen

Costumes

Susan Jones

Janet Preston

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