Louise Johnson, biophysicist and structural biologist, died on 25 September after a
13-month illness which she bore with quiet fortitude and grace. Her life and work
affected very many people worldwide, due both to her scientific activities in protein
crystallography and enzymology, and her tireless interest and effort in supporting
and encouraging scientists in developing countries to establish effective research
laboratories as far apart as South America, the Middle East and Pakistan.

I am one of those whose life course was pivoted changed by a chance conversation
with Louise, whom I first met in 1987 when I was tutoring physics at Somerville
College where Louise was then a Fellow. Over lunch, she asked me what I was
going to do when my fixed-term contract at Somerville expired and since there was
still a whole year to go, I threw away the comment “Oh, I don’t know, I will probably
have to change fields since nuclear physics (my then research area) is no longer being
funded in Oxford”. She visibly brightened
and said: “We are looking for someone with
just your skills at the moment to look after
our new cutting-edge X-ray equipment for
protein crystallography which is about to
arrive”. As a result of my rash statement
and Louise’s quiet persuasiveness, I visited
her the very next day at the Laboratory of
Molecular Biophysics (LMB) where she
and her research group were then working
on the mechanism of action of glycogen
phosphorylase, a large protein (842 amino
acids) present in muscle which turns inert
glycogen into the sugar needed to power
physical activity. They had succeeded in
obtaining a structure and showed how
the enzyme was regulated by reversible
phosphorylation and allosteric effects. In the
early 1980s, her group was at the vanguard
of those using synchrotron radiation for
macromolecular crystallography at the
Daresbury Laboratory near Runcorn. Louise’s lifelong interest in applying new
techniques to structural biology questions
came to the fore much later when she
became Life Sciences Director of Diamond
Light Source in 2003. There she oversaw
the building and development of this highly
effective national facility which is now
bearing great fruit for the UK physical and
biological sciences research community.

As a result of my visit to LMB that
day, I started working there a few months
later, and when Louise was appointed to
the David Phillips Chair in Molecular
Biophysics in 1990, I worked under her until
her retirement in 2007. Her management
style was ‘hands off’ but ‘attention on’
in that she was always there if advice or
guidance was needed, but did not offer
it unless it was requested. She encouraged
a highly co-operative working environment
among the different groups and PIs in
LMB which was extremely productive.
Since synchrotron data collection time
was allocated in aliquots of 24 or 48 hours
and was much more efficient as a team
effort, we regularly had the opportunity
to work together closely with colleagues,
thus developing a highly effective research
effort. Although Louise did not normally
accompany us on these trips to the
synchrotron, during one of her sabbatical
terms, she asked to be brought up to speed
in using the current X-ray equipment
and software for crystallography. She
determinedly and methodically worked her
way through our usual training programme
for new researchers, asking penetrating
and pertinent questions at every stage.
This was a great example to us of how a
senior scientist should keep in touch with
what the daily research really involved,
so that challenges faced by students and
postdocs could then be better appreciated
and overcome.

Her book, Protein Crystallography,
written with Tom Blundell and published
in 1976, although now a collector’s item
judging by the price of a second-hand copy
on Amazon, is a classic text in the field
worthy of attention today: I still regularly
consult my well-thumbed copy. Louise,
with Wolfgang Baumeister, Alasdair C.
Steven, and Richard Perham, had just
completed work on a book, Molecular
Biology of Machines and Assemblies, before
she became ill; it will be published in 2013.

Louise was very modest and unassuming
about her many achievements and honours,
and this quality was brought home to me
forcefully on one occasion in June 2010
when she very kindly offered to substitute
for me in giving a conference lecture. At
the time my husband was critically ill and
I was unable to deliver it. We were trying
to work out over the phone if she could
give it on a Tuesday afternoon, and she
mentioned she had to go to Cambridge
on Sunday evening, would be there for the
whole of Monday and would then travel
to London on Tuesday morning, but that
she might be free later in the afternoon.
I assumed that the Cambridge trip was to
visit her twin granddaughters, and asked
after them, upon which she hesitantly told
me that actually she was going to collect
an honorary ScD degree from Cambridge.
After some more convoluted discussion,
it gradually transpired that the London
engagement was at Buckingham Palace at a
garden party given by the Queen, and that

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getting to Cardiff in time to give the conference lecture was unfortunately just not going to be possible. I was left wondering what her Wednesday commitments might be! Her schedules were punishing, and her energy amazing.

When Louise's death was announced, I received many e-mails from ex-LMB members expressing their appreciation for Louise's role in their lives, and retrospective realization of the positive atmosphere she nurtured: e.g. “After working in other places, only now do I realize what a special place it was under her leadership.”, “A great lady”, and “Such a big presence within the field”.

Because of Louise I am a protein crystallographer and no longer a nuclear physicist. She had an enormous and lasting influence on my life, as she also had on the lives of many others. Along with her numerous colleagues throughout the world, I will miss her inspiration both scientifically and personally. I feel privileged indeed to have known her and worked with her. ■

Elspeth Garman (University of Oxford)

References

Career

1959–1962 University College, London. Graduated with BSc (Hons) Physics
1966–1967: Department of Biophysics, Yale University, Post-doctoral research assistant in Professor F.M. Richards’ Laboratory
1967–1973: Departmental Demonstrator in the Zoology Department, University of Oxford and Janet Vaughan Lecturer in Biophysics at Somerville College, Oxford
1973–1990: University Lecturer in Molecular Biophysics, University of Oxford and Additional Fellow and Janet Vaughan Lecturer, Somerville College, Oxford
1990–2007: David Phillips Professor in Molecular Biophysics, University of Oxford and Professorial Fellow, Corpus Christi College, Oxford
2003–2008: Director Life Sciences, Diamond Light Source
2007–2012: Emeritus Fellow of Corpus Christi College, Oxford
2008–2011: Diamond Fellow

Major Honours

1990: Elected a Fellow of the Royal Society
1992: Honorary DSc University of St Andrews
2000: Associate Fellow Third World Academy of Science
2002: Dame of the British Empire
2004: Honorary DSc University of Bath
2009: Honorary DSc Imperial College, London
2010: Honorary ScD University of Cambridge
2011: Foreign Associate of the US National Academy of Sciences

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