



SIR FRASER
STODDART

"He is a young man of energetic and painstaking habits, is methodical in his work, and is possessed of more than the average endowment in grit and determination. These attributes, combined with his sound theoretical and practical knowledge, mark him out as one well fitted for a responsible position in agriculture and dairying."

ROLE
MODELS



**SIR FRASER
STODDART**

„ I grew up during the 1940s and 1950s in a post-World War II society coping with the rationing of food, clothes, and petrol (gas), and without access to modern-day conveniences in the home and workplace that we take for granted these days.“

MODESTY

HARDSHIP

GRATITUDE



**SIR FRASER
STODDART**

„The consequences for me were that I had to live out a very simple lifestyle, and I also had to find ways of amusing myself in a home where only a few rooms through the winter months were habitable“.

**TURN
CHALLENGE
INTO
OPPORTUNITY**

CREATIVITY



**SIR FRASER
STODDART**

„ As I expected, nothing of significance happened. On bringing the second pair of wires together, however, there was blinding flash and much of the house was ablaze with light for the first time. There was a lot of noise. My mother was beside herself.“

**FORBIDDEN
FRUIT**

CURIOSITY

RISK TAKING



SIR FRASER
STODDART

„The whole episode brought out the daredevil side of my character. I discovered on the farm that defying regulations and breaking rules was a way to achieve distant goals on a shorter time-scale and, while there might be a price to pay, there would always be supporters, even secret admirers, and after the deed had been done there was no going back.“

FAME

RESPONSIBILITY

ANARCHY

INNOVATION



SIR FRASER
STODDART

„ From a young age, I was addicted to solving jigsaw puzzles and would stack them up when completed between sheets of newspaper. I ascribe my early fascination in stereochemistry and topology to this addiction, which was to give way gradually to one of the more sophisticated of toys in Britain in the 1950s, namely ‘Meccano’.,,

LOVE

PASSION

PLAYFULLNESS



SIR FRASER
STODDART

„The opportunity to construct a gadget I had designed myself and then put it to work after a fashion was to find expression later on when my passion for the chemical synthesis of unnatural products began to develop. There is also little doubt that my ‘Meccano’ set whetted my appetite many years later for constructing artificial molecular machinery from the bottom up.“

INNOVATION

INSPIRATION



SIR FRASER
STODDART





**SIR FRASER
STODDART**

**„ Not all change was seen to be desirable:
right up to the last days of the farm in 1968,
my mother remained a strong advocate of
producing eggs from free-range hens. With
the onset of mechanization, collaboration
between farmers was commonplace.“**

COLLABORATION

ROLE MODELS

**CRITICAL
THINKING**



**SIR FRASER
STODDART**

„ We were left free to run wild around the farm and also to roam the countryside at will on our homemade buggies and old bicycles. Creativity and risk-taking came into our play on the grandest of scales in a playground we fashioned to changing circumstances.“

FREEDOM

CREATIVITY

RISK TAKING



**SIR FRASER
STODDART**

„ My mother recalled that when she collected me from the school at noon on the first day and inquired as to how I had got on, my answer was to ask if I could go the next day for the whole day.“

FLOW

**INTEREST IN
LEARNING**



**SIR FRASER
STODDART**

„ In this rapidly changing educational environment, where the older pupils helped to look after the younger ones.....“

CHANGE

MENTORING



**SIR FRASER
STODDART**

„I was blessed with some really outstanding primary school teachers – Miss Christie and Miss Pratt come to mind, both of them now in their nineties and still going strong today. They recall a very shy little boy, shyness being a trait that was to take me more than three decades to overcome.“

**PERSONAL
DEVELOPMENT**

**STEPPING OUT
OF COMFORT
ZONE**



**SIR FRASER
STODDART**

„ In my final year, the Headmaster appointed me to be the Second Prefect of the School, a position that gave me adequate opportunities to develop leadership skills. This experience was to prove invaluable when I became Head of the School of Chemistry at Birmingham – and later, the Director of the California NanoSystems Institute.“

LEADERSHIP

**SKILLS
DEVELOPMENT**



**SIR FRASER
STODDART**

„ Here was my opportunity, I thought, to apply the multitasking skills I had acquired from working on a mixed-arable farm for a couple of decades. I used this experience and finished the course inside seven weeks, gaining a mark close to 100%.“

DETERMINATION

MULTITASKING

**TRANSFERABLE
SKILLS**



**SIR FRASER
STODDART**

„ This achievement earned me my first visit to the office of Sir Edmund who told me that Dr. Anderson would like to offer me a paid position in his research group during the following summer. I jumped at the opportunity.“

OPPORTUNITY

ACHIEVEMENT



**SIR FRASER
STODDART**

„I was to continue researching these biomacromolecules well beyond a fourth-year research project into the pursuit of a PhD degree as a postgraduate student. My main contribution to the field was to challenge the “main-chain” hypothesis,“

**CHALLENGE
THE CURRENT
KNOWLEDGE**

**PASSION FOR
TOPIC**



**SIR FRASER
STODDART**

„ For my part, Sir Edmund sprung into action and did not take long to arrange for me to go to Queen’s University in Kingston, Ontario as a National Research Council of Canada Research Fellow.„

MOBILITY



SIR FRASER
STODDART

„ with Sir Edmund's words ringing in my ears, “ *Whatever you do in research, Stoddart, make sure you work on a big problem.*” I was not at all sure what he meant by a ‘big problem’ but I was determined to heed his advice to the best of my limited ability..”

BIG PROBLEM



**SIR FRASER
STODDART**

„ This totally unexpected piece of breaking news, although quite a shock for me at the time, was to work to my advantage in the long run.“

**TURNING
THREATS INTO
OPPORTUNITIES**



SIR FRASER
STODDART

„I found myself assisting Walter Szarek, a former graduate student in Ken’s group, who had returned to Queen’s from Rutgers University to take over its supervision. It was good early experience for me in helping Walter run and mentor a medium-sized research group.“

MENTORING



**SIR FRASER
STODDART**

„ Norma retired to a corner of the room sobbing her heart out. After a kiss and a cuddle, I sent her off to bed and then stayed up all night, retyping much of the thesis by the following morning. When disaster strikes, it is best to waste no time in putting the experience to rest.“

LOVE

**DISASTER
MANAGEMENT**



**SIR FRASER
STODDART**

„ During my stay at Queen’s I found it easy to interact with the faculty. Saul Wolfe, in particular, took me under his wing and transmitted to me the importance of being on top of the current literature.“

MENTORING

**INTERPERSONAL
SKILLS**



**SIR FRASER
STODDART**

“It had been my bible from my Edinburgh days and so I decided that I would approach Dr. Eliel at the end of his inspirational talk and ask him if he would be kind enough to look over and comment on my manuscript.”

EXPERT REVIEW

NETWORKING



**SIR FRASER
STODDART**

„I sent him the manuscript and within a very short space of time it came back plastered in red ink. This experience taught me that having my manuscripts scrutinized by experts wherever possible would save me no end of embarrassment in the fullness of time.“

EXPERT REVIEW



**SIR FRASER
STODDART**

„ This edict infuriated Norma, and I was not best pleased either, given the fact that we were heading to Scotland where New Year’s Day is a national holiday. The crossing of swords with Ollis would go on for the best part of two decades.“

**CONFLICT
MANAGEMENT**



**SIR FRASER
STODDART**

„ On my return to the chemistry department on 1st January it became apparent that I was not going to be allowed the independence to carry out the kind of research that was the fellowship's official remit.“

**MANAGING
DISAPOINTMENTS**



SIR FRASER
STODDART

„ In addition, when Ollis learned that I would be spending some of my time writing the final chapter of the book, he immediately expressed his displeasure, stating quite emphatically that “*people at my stage should not be writing books.*”

DEALING WITH
DISCOURAGEMENT



SIR FRASER
STODDART

„ If the welcome to Sheffield was muted from on high, Norma and I were made to feel very welcome by the postgraduate community, particularly by David (Dave) Brickwood (whom I was delegated to supervise), Stephen (Steve) Potter and Richard (Dick) Taylor. Little do they really know how much they helped us through those difficult times.“

FRIENDS

PEER
SUPPORT



**SIR FRASER
STODDART**

„ It was a tall order to hold their attention in lectures and laboratory classes, but I did my very best to engender their enthusiasm by introducing all sorts of innovations into my teaching.“

MOTIVATION

TEACHING

INNOVATION



**SIR FRASER
STODDART**

„ Once again, I found myself in the company of an eminent American chemist, who not only enthused about his own research, but also about mine, an experience for me that was uplifting beyond my wildest dreams.“

ENCOURAGEMENT



SIR FRASER
STODDART

„ If I had not spent those years at ICI's Corporate Laboratory, my role in the development of mechanically interlocked molecules, that has led to designing and synthesizing molecular machines, would either not have happened or would have taken a very different course.“

INDUSTRIAL
RESEARCH



**SIR FRASER
STODDART**

„ If I ever felt a little depressed from working in a department that was brim full of politics, I could take a walk up to the Edgar Allen Building and have a reassuring chat with Roger. He always had time for me, no matter how busy he was tending to other university business. I would leave his office with my spirits lifted and ready to take on the world.“

**LIFTING
SPIRIT**



**SIR FRASER
STODDART**

**„ As I moved from one university to another,
the importance of maintaining good and
close relationships with the talented
individuals in media relations remained with
me.“**

**SCIENCE
COMMUNICATION
AND MEDIA**

**NETWORKING
AND
RELATIONSHIPS**



**SIR FRASER
STODDART**

„ The 1980s represented a sea change for my group, as I began to realize that our level of research performance could be raised out of all recognition by welcoming postgraduate students and postdoctoral fellows from overseas. The cultural change also encouraged home-grown PhD students to raise their sights. “

MOBILITY

DIVERSITY



SIR FRASER
STODDART

„Norma was too ill for me even to share this news with her and I was in the throes of a complicated relocation. I assumed that my message to Ken declining his offer would be the last I would hear of the Winstein Chair at UCLA and that this tantalizing prospect had slipped out of my grasp. This assumption proved to be incorrect.“

DIFFICULT
DECISIONS



**SIR FRASER
STODDART**

„Some 15 members – including first-year graduate students Stuart Cantrill, David Fulton, Sarah Hickingbottom, James Lowe and Anthony (Ant) Pease – of my research group made the transition from the middle of England to the West Coast of America, with postdoctoral fellow Francisco Raymo acting out the role of the scout.“

**RECOGNITION
OF THE TEAM**



SIR FRASER
STODDART

„Coming to grips with the very different way American academia operates compared with that in the UK, together with getting my mind round the funding system from the federal agencies and beyond, constituted a baptism of fire for a 55-year-old. We simply rolled up our sleeves and got on with it. “

ADAPTATION

TEAM WORK



**SIR FRASER
STODDART**

„ One of the most rewarding and fulfilling collaborations was with Jim Heath in the field of molecular electronics.“

**INTERDISCIPLINARY
COLLABORATION**



SIR FRASER
STODDART

„ Negotiations with the then President Henry Bienen at NU began in February 2007 and proceeded at such a pace that an announcement of my move could be made in August of that same year, allowing a few members of my group to start relocating a month later into newly refurbished laboratories in the Technological Institute.“

NEGOTIATION
SKILLS



SIR FRASER
STODDART

„ This discovery in turn has led to the establishment of a start-up company, PanaceaNano, in 2010 with Youssry Botros as its Chairman and Chief Executive Officer (CEO).“

DISCOVERY

START-UP



SIR FRASER
STODDART

„A start-up company, Cycladex, was launched in 2014 with Roger Pettman, one of my early postgraduate students from my Sheffield days, as its CEO. The company is offering the opportunity to the goldmining industry to abandon the use of cyanide and mercury in the isolation of gold from ore and to adopt a much less expensive environmentally friendly way of achieving a better outcome.“

IMPACT



SIR FRASER
STODDART

„The reason that the laissez-faire approach to supervising graduate students and postdoctoral scholars in the Northwestern chemistry department thrives so well is because it is an approach that is endorsed to the full by the vast majority of the faculty.“

LEADERSHIP
STYLE

CULTURE OF
TRUST



**SIR FRASER
STODDART**

„The experimentally and computationally active members in different research groups interact with each other so well – more often than not from the bottom up – that it has led to the comment that we hunt in packs in the Department of Chemistry at Northwestern.“

**GROUP
CULTURE**

**TEAM
WORK**

COLLABORATION



**SIR FRASER
STODDART**

„ The fact that the laissez-faire approach is the dominant practice in the Northwestern Chemistry Department despite the presence of rules and regulations that would dictate otherwise, has rendered it possible for my research group and many others, to collaborate with their counterparts “

**GROUP
CULTURE**

**TEAM
WORK**

COLLABORATION



**SIR FRASER
STODDART**

EPILOGUE

In reflecting upon my peripatetic journey, which started with my valuable early experiences at the 'University of Life' on the farm, I can look back with feelings of pleasure interspersed with times of personal and professional hardships. There have been occasions marked by joy and others by sorrow. There have been periods that were characterized by success and others by failure, which I did my best to mitigate. Through all my life's experiences, the aim has always been the same: to emerge from life's roller coaster better informed and more knowledgeable about the ways of the world.



**SIR FRASER
STODDART**

EPILOGUE

Putting all the ups and downs aside, I have been immensely privileged to be able to practice my hobby almost every day of my life in the presence of highly intelligent and outstandingly gifted young people, roughly aged between 18 and 32 drawn from nearly all quarters of the globe – and to do the things I love doing with them as a result of the generosity of those institutions and people, often without my being able to put a label or face to them, who have lent their support to my vision and mission from the Athens of the North (Edinburgh University) to the Windy City beside Lake Michigan (Northwestern University) with interludes on the edge of the Canadian Shield beside Lake Ontario (Queen's University), in the Socialist Republic of Yorkshire (University of Sheffield), on the Plains of Cheshire beside the Wirral (ICI Corporate Laboratory), in the Heartland of Albion (University of Birmingham) and in the City of Angels alongside the Peaceful Sea (University of California, Los Angeles). My journey is far from over: it will continue as long as family and friends fail to raise a red card telling me that I have reached my sell-by date.



**SIR FRASER
STODDART**

EPILOGUE

Science is global and there's no going back: scientists the world over live in a global village. There are no better words to catch this sentiment than those of the Scottish poet Robert Burns. In an epic poem, he emphasizes that "we're all the same under the skin." It is a statement of egalitarian sentiments. The poem reads –

.....



SIR FRASER
STODDART

EPILOGUE

*Then let us pray that come it may
(As come it will for all that)
That Sense and Worth over all the earth
Shall have pre-eminence and all that
For all that, and all that,
It's coming yet for all that
That man to man the world over
Shall be brothers for all that.*

Oh, that people who exercise power and influence in the world over we ordinary mortals might be guided by these sentiments. What a wonderful world it would be for all humankind if there were no borders – and rejoice at the thought, no countries.



SIR FRASER
STODDART

EPILOGUE

***THANK YOU FOR
SHARING YOUR
INSPIRING STORY!***