

**THE UNIVERSITY OF BRITISH COLUMBIA**  
**Curriculum Vitae for Faculty Members**

Date: March 20, 2015

Initials: F.S.

1. **SURNAME:** ABBOTT **FIRST NAME:** Frank  
**MIDDLE NAME(S):** Slade
2. **DEPARTMENT/SCHOOL:** University of British Columbia
3. **FACULTY:** Pharmaceutical Sciences
4. **PRESENT RANK:** Professor and Dean Emeritus
5. **POST-SECONDARY EDUCATION**

| University or Institution  | Degree | Subject Area                    | Dates |
|----------------------------|--------|---------------------------------|-------|
| University of Saskatchewan | B.S.P. | Bachelor of Science in Pharmacy | 1959  |
| University of Saskatchewan | M.Sc.  | Medicinal Chemistry             | 1962  |
| Purdue University          | Ph.D.  | Medicinal Chemistry             | 1966  |
|                            |        |                                 |       |

**Special Professional Qualifications**

Licensed Pharmacist, Province of Saskatchewan, January 1960.

6. **EMPLOYMENT RECORD**

(a) **Prior to coming to UBC**

| University, Company or Organization        | Rank or Title                                    | Dates     |
|--|--|-----------|
| Saskatoon Drug and Stationery              | Apprentice & Licensed Pharmacist                 | 1959-1960 |
| College of Pharmacy, Univ. of Saskatchewan | Sessional Lecturer in Pharmaceutical Chemistry   | 1961-1962 |
| Pharmacy, Purdue University                | Graduate Teaching Assistant in Organic Chemistry | 1962-1963 |

(b) **At UBC**

| Rank or Title  | Dates        |
|--|--------------|
| Assistant Professor, Faculty of Pharmaceutical Sciences  | 1966-1978    |
| Associate Professor, Faculty of Pharmaceutical Sciences  | 1978-1987    |
| Professor, Faculty of Pharmaceutical Sciences            | 1987-2002    |
| Associate, Department of Pediatrics, Faculty of Medicine | 1988-2002    |
| Dean, Faculty of Pharmaceutical Sciences                 | 1996-2002    |
| Professor and Dean Emeritus                              | 2002-present |



**(c) Graduate Students Supervised**

| Student Name           | Program Type | Year  |        | Principal Supervisor | Co-Supervisor(s) |
|------------------------|--------------|-------|--------|----------------------|------------------|
|                        |              | Start | Finish |                      |                  |
| James E. Coates        | Ph.D.        |       | 1972   | Dr. F. Abbott        |                  |
| Katsuji Haya           | Ph.D.        |       | 1973   | “                    |                  |
| Chun-Cheung Leung      | Ph.D.        |       | 1978   | “                    |                  |
| Gun-Il Kang            | M.Sc.        |       | 1977   | “                    |                  |
| Gun-Il Kang            | Ph.D.        |       | 1981   | “                    |                  |
| Andrew A. Acheampong   | M.Sc.        |       | 1982   | “                    |                  |
| John Greg Slatter      | M.Sc.        |       | 1983   | “                    |                  |
| Jeanine Kassam         | M.Sc.        |       | 1985   | “                    |                  |
| Andrew A. Acheampong   | Ph.D.        |       | 1985   | “                    |                  |
| Sukhbinder Panesar     | M.Sc.        |       | 1987   | “                    |                  |
| Kelem Kassahun         | M.Sc.        |       | 1987   | “                    |                  |
| Ronald Lee             | M.Sc.        |       | 1987   | “                    |                  |
| J. Greg Slatter        | Ph.D.        |       | 1988   | “                    |                  |
| Kuldeep Singh          | Ph.D.        |       | 1988   | Dr. James Orr        | Dr. F. Abbott    |
| Anthony Borel          | M.Sc.        |       | 1990   | Dr. F. Abbott        |                  |
| Kelem Kassahun         | Ph.D.        |       | 1991   | “                    |                  |
| Ron Lee                | Ph.D.        |       | 1991   | “                    |                  |
| Jiaojiao Zheng         | M.Sc.        |       | 1993   | “                    |                  |
| Sukhbinder Panesar     | Ph.D.        |       | 1993   | “                    |                  |
| Anthony Borel          | Ph.D.        |       | 1994   | “                    |                  |
| Jan Palaty             | Ph.D.        |       | 1995   | “                    |                  |
| John Gordon            | Ph.D.        |       | 1995   | Dr. Wayne Riggs      | Dr. F. Abbott    |
| Wei Tang               | Ph.D.        |       | 1996   | Dr. F. Abbott        |                  |
| Janice Moshenko        | M.Sc.        |       | 1996   | “                    |                  |
| Sashi Gopaul           | Ph.D.        |       | 1998   | “                    |                  |
| Ali Tabatabaei         | Ph.D.        |       | 1998   | “                    |                  |
| Vincent Tong           | M.Sc.        |       | 2000   | “                    |                  |
| Vincent Tong           | PhD          |       | 2005   |                      | Thomas Chang     |
| Tony Kiang             | PhD          |       | 2009   |                      | Thomas Chang     |
| Jayakumar Surendradoss | PhD          |       | 2014   | Thomas Chang         | Frank Abbott     |

**Research and/or thesis Committee memberships at University of British Columbia  
Pharmaceutical Sciences**

|               |       |  |      |  |  |
|---------------|-------|--|------|--|--|
| M. Moldowan   | Ph.D. |  | 1972 |  |  |
| L. Stephanson | Ph.D. |  | 1972 |  |  |
| S. Wang       | Ph.D. |  | 1972 |  |  |
| S. Wallace    | Ph.D. |  | 1973 |  |  |
| P. Haugen     | Ph.D. |  | 1974 |  |  |
| S.J. Kazmi    | Ph.D. |  | 1974 |  |  |
| B. Virgo      | Ph.D. |  | 1973 |  |  |
| B.S.R. Sastry | M.Sc. |  | 1972 |  |  |
| T. Martinez   | M.Sc. |  | 1975 |  |  |
| P. McOrmond   | M.Sc. |  | 1975 |  |  |
| M. James      | Ph.D. |  | 1977 |  |  |
| E. Quist      | Ph.D. |  | 1975 |  |  |

| Student Name      | Program Type | Year  | Principal | Co-Supervisor(s)<br>Supervisor |
|-------------------|--------------|-------|-----------|--------------------------------|
|                   |              | Start | Finish    |                                |
| F. Jamali         | Ph.D.        |       | 1976      |                                |
| C. Chung          | M.Sc./Ph.D.  |       | 1979      |                                |
| A. Polanin        | M.Sc.        |       | 1979      |                                |
| R. Venkataramanan | Ph.D.        |       | 1979      |                                |
| P. Longhurst      | M.Sc.        |       | 1979      |                                |
| P. Soja           | M.Sc.        |       | 1980      |                                |
| R.S.V. Vadlamundi | M.Sc.        |       | 1989      |                                |
| Y.K. Tam          | M.Sc./Ph.D.  |       | 1980      |                                |
| D. Au             | Ph.D.        |       | 1981      |                                |
| C. Akeyampon      | M.Sc.        |       | 1981      |                                |
| L. Gontovnick     | Ph.D.        |       | 1981      |                                |
| R. Suryanarayanan | M.Sc.        |       | 1981      |                                |
| B. Warren         | Ph.D.        |       | 1982      |                                |
| W. Riggs          | M.Sc.        |       | 1982      |                                |
| B. Desta          | M.Sc./Ph.D.  |       | 1982      |                                |
| L. Brown          | M.Sc.        |       | 1982      |                                |
| M. Finlayson      | Ph.D.        |       | 1983      |                                |
| C. Sekar          | M.Sc./Ph.D.  |       | 1983      |                                |
| G. Pillai         | M.Sc./Ph.D.  |       | 1984      |                                |
| E. Kwong          | Ph.D.        |       | 1984      |                                |
| G. Sunahara       | Ph.D.        |       | 1984      |                                |
| R. Kapil          | M.Sc./Ph.D.  |       | 1985      |                                |
| L. Embree         | M.Sc.        |       | 1986      |                                |
| R. Wong           | M.Sc.        |       | 1986      |                                |
| L. Embree         | Ph.D.        |       | 1988      |                                |
| D. Kwok           | M.Sc.        |       | 1987      |                                |
| L. Igwemezie      | M.Sc.        |       | 1986      |                                |
| Hong Xiang        | M.Sc.        |       | 1987      |                                |
| R. Bhattachargee  | M.Sc.        |       | 1987      |                                |
| K. Wang           | Ph.D.        |       | 1989      |                                |
| Sun Dong Yoo      | Ph.D.        |       | 1989      |                                |
| Wayne Riggs       | Ph.D.        |       | 1989      |                                |
| David Kwok        | Ph.D.        |       | 1991      |                                |
| Linus Igwemezie   | Ph.D.        |       | 1990      |                                |
| Zhen Yu           | M.Sc.        |       | 1990      |                                |
| Jing Wang         | M.Sc.        |       | 1991      |                                |
| George Tonn       | M.Sc.        |       | 1991      |                                |
| Seema Gadkari     | M.Sc.        |       | 1991      |                                |
| J. Gordon         | M.Sc.        |       | 1991      |                                |
| Thomas Chang      | Ph.D.        |       | 1991      |                                |
| Matt Wright       | Ph.D.        |       | 1992      |                                |
| J. Orbay          | M.Sc.        |       | 1992      |                                |
| K. Yeleswaram     | Ph.D.        |       | 1992      |                                |
| Marian Wong       | Ph.D.        |       | 1993      |                                |
| M. Zheng          | M.Sc.        |       | 1993      |                                |
| Subodh Verma      | M.Sc.        |       | 1993      |                                |
| Hong Li           | M.Sc.        |       | 1994      |                                |

| Student Name | Program Type | Year | Principal | Co-Supervisor(s) |
|--------------|--------------|------|-----------|------------------|
|--------------|--------------|------|-----------|------------------|

|                    |       | Start      | Finish   | Supervisor      |  |
|--------------------|-------|------------|----------|-----------------|--|
| John Kim           | M.Sc. |            | 1994     |                 |  |
| G. Tonn            | Ph.D. |            | 1995     |                 |  |
| Rajesh Krishna     | M.Sc. |            | 1995     |                 |  |
| Susan Holsmer      | M.Sc. |            | 1995     |                 |  |
| Angela Lo          | M.Sc. |            | 1995     |                 |  |
| David Janz         | Ph.D. |            | 1995     |                 |  |
| Subodh Verma       | Ph.D. |            | 1997     |                 |  |
| Michael Gentleman  | M.Sc. | Incomplete |          |                 |  |
| Lilian Clohs       | M.Sc. |            | 1997     |                 |  |
| Ming Zheng         | Ph.D. |            | 1997     |                 |  |
| Martin Palmer      | M.Sc. | Incomplete |          |                 |  |
| Laura Alcorn       | M.Sc. |            | 1997     |                 |  |
| Sanjeev Kumar      | Ph.D. |            | 1998     |                 |  |
| Eddie Hamidi       | M.Sc. |            | 1996     |                 |  |
| Jacqueline Waliser | Ph.D. |            | 1999     |                 |  |
| Patrick Franchini  | Ph.D. |            | 1999     |                 |  |
| Richard Liggins    | Ph.D. |            | 1998     |                 |  |
| Anne Wong          | M.Sc. |            | 1996     |                 |  |
| Rajesh Krishna     | Ph.D. |            | 1998     |                 |  |
| Jason Nugui        | M.Sc. |            | 1997     |                 |  |
| Swamy Subramaniam  | M.Sc. |            | 1997     |                 |  |
| Harvey Wong        | Ph.D. |            | 2000     |                 |  |
| Robbin Burns       | Ph.D. |            | 2000     |                 |  |
| John Kim           | Ph.D. |            | 2000     |                 |  |
| Kathy Peteherych   | M.Sc. |            | 2000     |                 |  |
| Ruiwen Shi         | Ph.D. |            | 2003     |                 |  |
| Mona Kwong         | M.Sc. |            | 2002     |                 |  |
| Caly Chien         | Ph.D. |            | 2004     |                 |  |
| Sam Au Yeung       | Ph.D. |            | 2003     |                 |  |
| Eddie Kwan         | PhD   |            | 2004     |                 |  |
| Anand Deo          | PhD.  |            | 2009     |                 |  |
| Maher Qadoura      | PhD   |            | Withdrew | Committee Chair |  |
| Antonia Tsallas    | MSc   |            | 2010     | Committee Chair |  |
| I Fan Kuo          | MSc   |            | 2014     | Committee Chair |  |

Chemistry

|                     |       |  |      |  |  |
|---------------------|-------|--|------|--|--|
| W. Philips          | Ph.D. |  | 1971 |  |  |
| C.K. Lau            | Ph.D. |  | 1978 |  |  |
| A. Maxwell          | Ph.D. |  | 1983 |  |  |
| S. Ayer             | Ph.D. |  | 1985 |  |  |
| Eoin Fahy           | Ph.D. |  | 1986 |  |  |
| David Kuo           | Ph.D. |  | 1987 |  |  |
| Zamas Lam           | Ph.D. |  | 1988 |  |  |
| C. Spino            | Ph.D. |  | 1988 |  |  |
| Bernard Daigle      | Ph.D. |  | 1990 |  |  |
| Douglas Wirst       | Ph.D. |  | 1990 |  |  |
| Terence Jarvis      | Ph.D. |  | 1991 |  |  |
| David L. Burgoyne   | Ph.D. |  | 1992 |  |  |
| T.J. Lewis          | Ph.D. |  | 1993 |  |  |
| C.G. Gill           | Ph.D. |  | 1994 |  |  |
| Ellen Chui-Kwan Lai | Ph.D. |  | 1994 |  |  |
| Kang Han            | Ph.D. |  | 1995 |  |  |

|                   |       |  |      |                      |  |
|-------------------|-------|--|------|----------------------|--|
| Renata Oballa     | Ph.D. |  | 1995 |                      |  |
| Anurag Sharadendu | Ph.D. |  | 1996 |                      |  |
| Jennifer Campbell | Ph.D. |  | 1999 | Thesis Defense       |  |
| Brett Sharp       | Ph.D. |  | 2001 | Thesis Defense Chair |  |
| Bradley Schneider | PhD   |  | 2002 | University Examiner  |  |

Botany

|            |       |  |      |  |  |
|------------|-------|--|------|--|--|
| D. McKenna | Ph.D. |  | 1984 |  |  |
| Lynne Yip  | Ph.D. |  | 1993 |  |  |
| Jon Page   | Ph.D. |  | 1998 |  |  |

Pharmacology & Therapeutics

| Student Name      | Program Type | Year  | Principal | Co-Supervisor(s)<br>Supervisor |  |
|-------------------|--------------|-------|-----------|--------------------------------|--|
|                   |              | Start | Finish    |                                |  |
| Don Webster       | M.Sc.        |       | 1990      |                                |  |
| Ting Zhou         | M.Sc.        |       | 1990      |                                |  |
| Mohamed Youseffi  | M.Sc.        |       | 1993      |                                |  |
| Troy Sarich       | Ph.D.        |       | 1997      |                                |  |
| Leo Smyrnis       | Ph.D.        |       | 1999      |                                |  |
| Gitanjali Adalaka | Ph.D.        |       | 1999      |                                |  |
| Sandro Yong       | Ph.D.        |       | 2000      |                                |  |

Physiology

|                 |       |  |      |  |  |
|-----------------|-------|--|------|--|--|
| C-A.M. Courneya | Ph.D. |  | 1987 |  |  |
|-----------------|-------|--|------|--|--|

Obstetrics & Gynaecology

|             |       |  |      |  |  |
|-------------|-------|--|------|--|--|
| Weiping Tan | Ph.D. |  | 1997 |  |  |
|-------------|-------|--|------|--|--|

**(d) Continuing Education Activities**

Facilitated the organization and presentation of the IT course, Herbs to Homeopathy, 2000-2001.

**(e) Visiting Lecturer (indicate university/organization and dates)**

Ministry of Health, People's Republic of China, Shanghai First Medical College, October 1986.  
Shanghai Institute of Materia Medica Chinese Academy of Sciences, October 23, 1986.  
Shanghai Society of Chemistry and Chemical Engineering, October 25, 1986.  
Hangzhou Pharmacists Association, Hangzhou, October 20, 1986.

**(f) Other**

Postdoctoral Fellows and Visiting Scientists

Stoyan Karagiozov, Research Associate, 2000 – 2009

Xiaowei Teng, PhD., Postdoctoral Fellow, July, 2003 –2007. Currently Research Scientist with BRI Contract Laboratories, Vancouver, BC

Ping-Chuen Ho, Ph.D., Postdoctoral Fellow, October, 2000 to 2002. Currently Research Associate, Hong Kong University.

Reza Anari, Ph.D., Postdoctoral Fellow, 1997-1999. Currently Research Scientist with Merck Laboratories, West Point. PA.

Abdul Mutlib, Ph.D., Postdoctoral Fellow, 1989-91. Currently Associate Director of PDDM, Wyeth Pharmaceutical, New Jersey.

RNDr. Zelmira Bezakova, C.Sc. MRC European Exchange Scholar, Faculty of Pharmacy, Comenius' University, Bratislava, CSFR, 1991-1992. Dr. Bezakova developed GCMS assay methods for drug metabolites applicable to patient studies.

Dianchen Yu, Visiting Research Scientist from the Institute of Applied Ecology, Academia Sinica, Shenyang, China, 1990-1993. His research was to develop a GC/MSD method for valproate metabolites applicable to placenta transfer studies in pregnant sheep.

Jiaojiao Zheng, Visiting Chinese Scholar from Shanghai Medical University - September 1988 - August 1989. Her research was to compare electron impact and negative chemical ionization methods of mass spectrometry analysis for drug metabolites.

Ting-Hui Sun, Visiting Chinese Scholar from Hangzhou from January 1980 to December 1981. His research work consisted of metabolic and pharmacokinetic studies of the anticonvulsant, valproic acid and synthesis and pharmacokinetics of the analgesic zomepirac.

Neal Hamon, Visiting Associate Professor from July 1/82 - July 1/83.

## **9. SCHOLARLY AND PROFESSIONAL ACTIVITIES**

### **(a) *Areas of special interest and accomplishments***

#### **1. Drug-receptor interaction studies**

Research in the early stages of my career dealt with the synthesis and testing of compounds designed to elucidate mechanisms of drug receptor interactions. These studies focussed on narcotic analgesics and narcotic antagonists whereby conformationally restricted analogues of diphenylpropylamine analgesics were synthesized to test how these flexible drugs combined with their receptors. These studies were done with novel chemicals known as thietane 1,1-dioxides and several papers on their synthesis and chemical properties were published. Thietanes were also synthesized to explore the chemical requirements for monoamine oxidase (MAO) inhibition. This interest in MAO inhibitors led to a collaboration with botany in which  $\beta$ -carbolines and tryptamines from hallucinogenic plants were tested for MAO inhibition. More recently quantitative structure activity studies of anticonvulsant structures related to valproic acid and its metabolites have been explored. The work has relevance to the mechanism of action of valproic acid and several promising leads of potentially useful new anticonvulsants that have reduced toxicity were discovered.

#### **2. Analytical methods for application to drug metabolism, pharmacokinetics and drug interaction studies**

Current research interests are the development of analytical methods for sensitive and specific quantitation of drugs or metabolites from biological tissues with applications to pharmacokinetics, pharmacodynamics, toxicology, drug disposition and drug interaction studies. The methods used are chromatographic, i.e. gas chromatography (GC), high performance liquid chromatography (HPLC), gas chromatography-mass spectrometry (GCMS), and more recently liquid chromatography - mass spectrometry (LCMS) and tandem LCMS. Stable isotope labelled drugs have been synthesized to act as tracer substances to obtain metabolic profiles using GCMS and LCMS. New metabolites have been confirmed spectroscopically and by synthesis. Selected ion monitoring (SIM) methods using GCMS and LCMS and MRM using LCMS/MS have provided

highly sensitive drug and metabolite assays useful for pharmacokinetics studies in animals and in man. More specifically these projects are summarized briefly as follows:

i) Saliva drug levels:

In order to investigate the suitability of using saliva for therapeutic drug monitoring sensitive assays using GCMS were developed for the acidic anticonvulsant valproic acid and for the basic narcotic analgesic methadone. In the case of valproic acid saliva levels are very pH dependent and vary with the method of collection. Metabolite levels in saliva may also predict relative tissue distribution of some highly protein bound metabolites.

ii) Drug metabolism studies:

A very large project is the investigation of the anticonvulsant, valproic acid. This drug is extensively metabolized in man and the metabolites are thought to contribute to the pharmacological effect and to cause a rare but fatal liver toxicity. Mitochondrial and microsomal metabolism of valproic acid make for a complex profile of metabolites. Research objectives include the detection and identification of trace metabolites, metabolic profiles in children, pharmacokinetics of metabolites, pharmacodynamics, synthesis and evaluation of new analogues as anticonvulsants, mechanisms of formation and elimination of toxic metabolites, mechanisms for the hepatotoxicity, interactions with drugs that either inhibit or induce valproate metabolism, and the evaluation of toxicity using lymphocytes. The characteristics of the induction of VPA metabolism by other drugs and the cyt-P450 profile responsible for the induction are part of the antiepileptic drug project. Recent work has established that the mitochondrial pathway of VPA metabolism to 2,4-diene VPA is critical to the hepatotoxicity. The reactivity of this metabolite with GSH is now thought to be part of the toxicity mechanism. LCMS methods for the analysis of thiol conjugates have been critical for the progress of this research. The generation of reactive oxygen species during the metabolism of VPA is a potential contributing factor to the hepatotoxicity and LCMS has been used to monitor metabolites of probes for the in vivo presence of reactive oxygen species.

Formamide metabolites and analogues of analgesics and cholinergics are of interest for their toxic effects to the liver. Isocyanates are suspected reactive intermediates. Conjugates derived from these reactive species are being characterized and mechanisms for their formation investigated. Dissociation of the thiol conjugates to release the reactive species may also contribute to toxicity. An extension of this work is our investigation of the nitrosourea anticancer drugs that are known to form isocyanates in vivo. These isocyanates may well be responsible for the pulmonary toxicity that is frequently associated with these drugs.

iii) Drug metabolite analysis using selected ion monitoring methods:

The importance of drug metabolites to the activity and toxicity of a drug frequently requires quite selective and more often very sensitive methods of analysis. This is particularly true for the anticonvulsant valproic acid. An assay has been developed for seventeen of these metabolites using SIM techniques and stable isotope analogs as internal standards. The assay is now being applied to patient studies, placental transfer studies in sheep, and metabolite kinetic studies in both animals and man.

iv) Placental transfer of drugs and drug metabolism in the fetus:

The instrumented pregnant sheep model serves to evaluate the placental transfer of drugs used in pregnancy. Such drugs include antihistamines, anticonvulsants, antihypertensives and tocolytic agents. Mass spectrometric methods together with stable isotope labelled drugs are being used to study the kinetic and disposition properties of drugs both in the mother and in the fetus. Stable isotope methodology is being tested for its application to the simultaneous determination of pharmacokinetic parameters in mother and fetus. GCMS, LCMS and stable isotopes also assist in the identification of drug metabolites thought responsible for unwanted and toxic side effects. Collaborators in this research include experts in pediatric



neurology, Dr. Kevin Farrell, and in fetal physiology, Dr. Dan Rurak, in the Faculty of Medicine, and from pharmacokinetics, Dr Wayne Riggs of this Faculty.

v) Drug interaction studies:

Much of this research was done in collaboration with Dr. Kevin Farrell in the Department of Pediatrics, Faculty of Medicine at UBC.

An interaction between acetylsalicylic acid (ASA) and valproic has been found to occur in studies of pediatric patients. The interaction occurs at antipyretic doses of ASA. Salicylate causes an increase in the serum free fraction of valproic acid by displacement of bound valproic acid from serum albumin. A decrease in clearance of valproic acid was also seen to occur suggesting that salicylate may also inhibit valproic acid metabolism. This interaction has important considerations with respect to the use of valproic acid in prophylaxis of febrile seizures. More recent work has confirmed that salicylate does inhibit valproic acid metabolism and the pathway involved has been identified.

Since one or more of valproic acid metabolites may be implicated in the fatal liver toxicity of this drug the influence of comedication on the metabolism of valproic acid is a most important consideration. Carbamazepine is one such drug and metabolite profiles are being examined in pediatric patients that are on this combination with a view to describing a greater exposure of these patients to potentially reactive metabolic intermediates.

In order to characterize the molecular nature of the carbamazepine induction of valproic acid, studies in rats have investigated the time course of induction and the profile of induction of carbamazepine by characterizing the P450 enzymes that are induced in microsomes. Comparisons have been made to carbamazepine epoxide, phenobarbital and clofibrate. This basic research was carried out in collaboration with Dr. Stelvio Bandiera of this Faculty.

vi) Drug toxicity:

Methods are being developed using human lymphocytes to assess drug and metabolite toxicity. The objectives are to investigate whether such tests would reliably predict idiosyncratic reactions to a drug and thus avoid potentially serious toxicity reactions in patients, who for genetic reasons, are particularly susceptible. Initial results indicate that lymphocytes from pediatric patients who have experienced severe liver toxicity while on valproic acid do indeed show an enhanced sensitivity to apparent reactive metabolites of valproic acid. The mechanisms of this toxicity are currently under investigation using modern fluorescent probes for measuring cell toxicity and to measure physiological parameters that would help describe a potential mechanism of the toxicity. The formation of reactive oxygen species has been implicated from early experiments of the toxicity of VPA to lymphocytes. This research is done in collaboration with Dr. Kevin Farrell of the Epilepsy Clinic and Dr. Thomas Chang of this faculty.

**(b) Research or equivalent grants (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC)). (Last 10 years)**

| Granting Agency | Subject   | COMP | \$ Per Year | Year      | Principal Investigator | Co-Investigator(s)                |
|-----------------|---|------|-------------|-----------|------------------------|-----------------------------------|
| CIHR            | Valproic acid analogues: glutathione dependent metabolism and mechanisms of toxicity. | C    | \$115,796   | 2005-2010 | Dr. F. Abbott          | Drs. K. Farrell and Thomas Chang. |
| CIHR            | Replacement of multiuser LC/MS/MS   | C    | \$500,000   | 2005      | Wayne Riggs            | Frank Abbott                      |
| CIHR/POP        | CNS-active valproic acid analogues with improved safety profiles.                     | C    | \$100,000   | 2004      | Frank Abbott           | Stoyan Karagiosov                 |
| CIHR            | Valproic acid analogues:  | C    | \$116,110   | 2002-     | Dr. F. Abbott          | Drs. K. Farrell and               |

|                        | glutathione dependent metabolism and mechanisms of toxicity.   |             |                    | 2005        |                               | Thomas Chang.                     |
|------------------------|--|-------------|--------------------|-------------|-------------------------------|-----------------------------------|
| <b>Granting Agency</b> | <b>Subject</b>   | <b>COMP</b> | <b>\$ Per Year</b> | <b>Year</b> | <b>Principal Investigator</b> | <b>Co-Investigator(s)</b>         |
| MRC/CIHR               | Valproic acid analogues: glutathione dependent metabolism and mechanisms of toxicity.                              | C           | \$81,500           | 1999-2002   | Dr. F. Abbott                 | Drs. K. Farrell and Thomas Chang. |
| MRC                    | Developmental Disposition and Effects of Diphenhydramine and Valproic Acid in Sheep.                               | C           | \$71,400           | 1997-2000   | Dan Rurak                     | Drs. Abbott, Riggs.               |
| MRC                    | Formamides, nitrosoureas and valproic acid analogues: glutathione dependent metabolism and mechanisms of toxicity. | C           | \$51,024           | 1996-99     | Dr. F. Abbott                 | Drs. K. Farrell and R. Thies.     |
| MRC                    | Pharmacokinetics, Metabolism and Drug Interactions of Valproic Acid Metabolites                                    | C           | 52,128             | 1995-98     | Dr F. Abbott                  | Drs. K. Farrell and W. Riggs      |
| MRC                    | Formamides, nitrosoureas and valproic acid analogues: glutathione dependent metabolism and mechanisms of toxicity  | C           | 25,000             | 1995-96     | Dr. F. Abbott                 | Drs. K. Farrell and R.Thies       |

**(c) Research or equivalent contracts (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC)).**

| <b>Granting Agency</b>                                     | <b>Subject</b>  | <b>COMP</b> | <b>\$ Per Year</b> | <b>Year</b> | <b>Principal Investigator</b> | <b>Co-Investigator(s)</b> |
|--|---|-------------|--------------------|-------------|-------------------------------|---------------------------|
| Forbes Medi-Tech   | Collaborative Research: Synthesis of FM-VP13  | NC          | \$10,125           | 2004        | Frank Abbott                  | Stoyan Karagiosov         |
| Biopharmaceutical Research Inc.:                           | Discovery and development of CNS-active valproate analogues with improved safety profiles               | NC          | \$10,000           | 2003        | Frank Abbott                  | Stoyan Karagiosov         |
| Biopharmaceutical Research Inc.                            | Discovery and development of CNS-active valproate analogues with improved safety profiles- Space rental | NC          | \$4,110            | 2003        | Frank Abbott                  | Stoyan Karagiosov         |
| BC Ministry of Advanced Education, Training and Technology | Discovery and development of CNS-active valproate analogues with improved safety profiles               | NC          | \$7,000            | 2003        | Frank Abbott                  | Stoyan Karagiosov         |
| Abbott Laboratories  | QSAR of Unsaturated Analogues of Valproic Acid  | NC          | \$111,000          | 1998-2000   | Frank Abbott                  |                           |

**(d) Invited Presentations**

Invited Lectures on my research

- Dec. 9., 1985 Recent Developments of Tertiary Amine Drug Metabolism, as Alberta Heritage Foundation Speaker, University of Alberta, Faculty of Pharmacy and Pharmaceutical Sciences.
- Dec. 10, 1985 Pharmacokinetics, Metabolism and Drug Interactions of Valproic Acid, as Alberta Heritage Foundation Speaker, University of Alberta, Faculty of Pharmacy and Pharmaceutical Sciences.
- Jan. 8, 1986 Seminar to the Department of Pharmacology, Faculty of Medicine, U.B.C., "Metabolism and Drug Interaction studies of Valproic Acid."
- Apr. 24, 1986 Invited speaker on "GCMS Applications to Quantitative Analysis," Western Organic Trace Analysis Symposium, Vancouver, B.C.
- Mar./Apr. 1989 School of Pharmacy, Addis Ababa University "Pharmacy Education in Canada". "Medicinal Chemistry, Present and Future", "Valproic Acid, a Research overview".
- April, 1990 Invited speaker to a one day symposium on mass spectrometry applications held in Richmond, B.C. and hosted by Hewlett-Packard.
- July 16, 1990 School of Pharmacy, Memorial University of Newfoundland, St. John's, "Mechanistic studies of valproate hepatotoxicity: metabolism and lymphocyte toxicity"
- July 18, 1990 Invited speaker to Drug Metabolism and Analysis Symposium of the Medicinal Chemistry Division of the Chemical Institute of Canada meeting, Halifax. "Isolation and characterization of the thiol conjugates of reactive drug metabolites - toxicological significance".
- July 29, 1990 Seminar to the Department of Pediatrics, Dokkyo University School of Medicine, held in Omiya, Japan. "Valproic Acid Hepatotoxicity".
- August 2, 1990 Seminar to Yamaguchi School of Medicine, Ube, Japan. "Mechanistic studies of valproate hepatotoxicity: metabolism and lymphocyte toxicity".
- July 27, 1993 Seminar to the summer students in the Faculty of Pharmaceutical Sciences at UBC, "The complexities of metabolism on the actions of anticonvulsant drugs".
- August 4, 1993 McNeill Award presentation to the Association of Faculties of Pharmacy meeting in Vancouver, B.C., "The significance of metabolism to the pharmacodynamics and toxicity of anticonvulsant drugs".
- Feb. 10, 1997 Invited speaker, Faculty of Pharmacy, University of Toronto, "Insights into Valproic Acid toxicity.
- March 6, 1997 Seminar to Merck Frosst in Montreal, "Mechanistic Aspects of Valproic Acid Toxicity"
- Nov. 4, 1998 Seminar to School of Pharmacy, University of Sydney, Sydney Australia, "Idiosyncratic valproic acid toxicity – mechanistic aspects".
- July, 2000 Frank Abbott, Kevin Farrell, Jie Chen, Ali Tabatabaei, and Thomas Chang, "Elevated plasma concentration of 8-isoprostane, an in vivo marker of oxidative stress in rats administered valproic acid", invited oral presentation based on poster material, Biological Reactive Intermediates, Symposium, Paris, July, 2000.
- May, 2002 Frank Abbott, "A capsule of 20 years of valproic acid research", presented at the Visions In Pharmacy Research Day, Grouse Mountain, Vancouver.

**(e) Other Presentations**

1. Faculty of Pharmaceutical Sciences Presentation to London Drugs Annual Pharmacy Managers Conference, San Diego, April, 2000, Scottsdale, 2001 and San Antonio, 2002.
2. Summer student research presentation, June, 2000.
3. Frank Abbott and Colleen Metge, "A process for the production/validation of the patient information section of the product monograph (PM)", presented on behalf of the Association of Deans of Pharmacy of Canada to the Health Canada TPP Multi-stakeholder Consultation Workshop, Ottawa, September, 2000.
4. UBC Pharmacy Accelerated Degree program, presented to the Chain Drug Store Association in Vancouver, October, 2000 and updated January, 2002. Also presented to the BC Canadian Health Systems Pharmacists, April, 2001.
5. Presentation to Pharmacy Alumni at CEP conference at UBC, February, 2001 and February, 2002.
6. Presentation to the Ministry of Health Planning Reference Drug Program Consultation Panel, 29 January 2002
7. Co-Chair of session on Pharmaceutical Scientists in Canada-is the supply meeting the demand, as part of the program of the AFPC/CSPS Conference and Symposium, Vancouver, June 12, 2004.

**(f) Other**

N/A

**(g) Conference Participation (Organizer, Keynote Speaker, etc.)**

Association of Faculties of Pharmacy of Canada (AFPC)

AFPC Delegate from UBC, 1968-71.

Member of 1984 Organizing Committee for Vancouver Conference.

Coordinator of Research Conference, 1984.

Chairman for Poster Presentations AACP/AFPC, Portland, 1989.

Chairman of Selection Committee for the McNeil Award, UpJohn Young Investigator Award and Merck Frosst Fellowships, 1994.

Workshop leader (OSCE for Med. Chem.) for the Teacher's Conference in St. John's NFLD. May, 1998.

Executive Director, June 1, 2003 to September 31, 2010

Member of the 2004 and 2010 Organizing Committees for the AFPC Annual Conference.

Canadian Society for Pharmaceutical Sciences (CSPS)

Founding member, Treasurer, 1997-2000, Member at large, 2000-2003

Inaugural meeting, September, 1997, in Vancouver, BC., Invited Speaker, "An Academic viewpoint of the State of Canadian Pharmaceutical Research".

Conference co-planner and point person for 3<sup>rd</sup> Annual Symposium in Vancouver, June, 2000, "Technology Transfer from Bench to Market".

Conference co-planner and point person for joint AFPC-CSPS Conferences in Montreal (2007) and Richmond (2010).

Awarded Fellow status at the 2012 meeting in Toronto.

Served on planning committee of the CSPS Conference held in the Faculty of Pharmaceutical Sciences Building at UBC in Vancouver, June 11-14, 2013.

Member of the CSPS Board: President Elect, 2014, 2015.

International Society for the Study of Xenobiotics (ISSX):

Co-Chairman, planning committee for the 2004 meeting in Vancouver.

Scientific Advisory committee for meetings 1999 – 2006.

Other:

Invited speaker on “GCMS Applications to Quantitative Analysis”, Western Organic Trace Analysis Symposium, Vancouver, B.C., April 24, 1986.

Invited speaker to a one day symposium on mass spectrometry applications held in Richmond, B.C. and hosted by Hewlett-Packard, April 1990.

Invited speaker to Drug Metabolism and Analysis Symposium of the Medicinal Chemistry Division of the Chemical Institute of Canada meeting, Halifax. “Isolation and characterization of the thiol conjugates of reactive drug metabolites - toxicological significance”, July 18, 1990.

## 10. **SERVICE TO THE UNIVERSITY**

### (a) ***Memberships on committees, including offices held and dates***

#### i) **Faculty**

Chair Academic Review Committee, Faculty of Pharmaceutical Sciences, 2010 – 2014.

Chair CCAPP Accreditation Review Committee, 2011-2012.

Member of Equipment subcommittee 2013.

Member of Mass Spectrometry Analyst Selection Committee, 2007.

Member of Faculty/CDRD ADME Toxicology Position Selection Committee, 2007.

Dean of Faculty 1996 to 2002.

Chair of Faculty Executive Committee, 1996-1997.

Chair of Deans Advisory Committee (DAC) and Faculty Advisory Committee (FAC) 1998-2002.

Co-chair of Dawson Fund, 1998-2002.

Chair of Staff Performance Development Committee, 1999-2000.

Ex-officio Head of Accreditation Committee, 1999-2000.

Ex-officio Head of Promotion and Tenure Committee, 1996-2002.

Chair to Committee of Deans of Canada Research Chairs, 2000.

Hiring Task Force Committee, 1999-2002.

CFI Grants Committee, 1998, 1999-2000.

Pharmacogenetics Symposium and Workshop Committee, 1999-2000.

Chair of Faculty Strategic Planning Committee, 1996-1997 with annual review to 2002.

Chairman, Division of Pharmaceutical Chemistry and member of Faculty Executive, 1982-84, 1984-86, 1986-88, 1989-91, 1991-1994, 1994-1996.

Promotion and Tenure Committee 1987 - 1996.

Health Sciences Research Day Committee (1983-96) (judge during the competition, 1983, 1984, 1985, 1986, 1988).

Faculty of Pharmaceutical Sciences Renovation Committee, 1985, 1986: Space Committee, 1994/95.

Curriculum Review Committee 1985, 1986, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1998, 1999.

Curriculum Committee - 1968 – 1996. (Chairman, 1969-71).

Curriculum Overview Committee: 1979-1982.

Pharm. D. Degree Review Committee, 1985, 1986.

Selection Committee - Clinical Pharmacy Positions, 1986, 1990.

Selection Committee - Pharmacology Position, 1987.

Selection Committee, Pharmaceutical Chemistry Positions, 1986, 1989.

Selection Committee, Pharmaceutics Position, 1986, 1992, 1994.

Selection Committee, Radiopharmacy position, St. Paul's, 1988-89.

Squibb Teacher Award Committee, 1984.

Representative to Faculty of Science, 1972-1974, 1989-91, 1991-96.

Representative to Faculty of Medicine, 1988-1996.

Chairman, GCMS Selection Committee 1981-82.

Drug poison and information center staff advisory, 1979 and 1983.

Faculty advisor to Pharmacy Undergraduate Society, 1968-69; 1972-73, 1988-89.

Faculty Advisor to CAPSI, 1992.

Faculty of Pharmaceutical Sciences Building Committee, 1969-71.

Selection Committee for the University Teaching Prize in Pharmaceutical Sciences, 1991.

Participant in the Sir Charles Tupper Secondary School Science Program to interest students in the career of pharmacy, Karen Yan, 1993.

Member of the Faculty Mission Statement Committee, 1993.

Coordinator for the Faculty in the fund raising aspects and final selection of the LC/MS/MS instrument that was part of the World of Opportunity Campaign, 1991-1994.

Member of Faculty Network Advisory Committee, 1994-96.

Participated in case statement committees for the Chair in Toxicology and the Pharmaceutical Development Laboratory, 1994-95.

Committee member to develop award criteria for the David McDonald and Shoppers Drug Mart Professorships in Pharmacy, 1994.

Member of accreditation committee, 1993-94.

ii) **University**

(a) **Faculty Association Executive:**

Grievance Committee which was active in 1985, 1986  
Faculty Benefits Review Committee; 1985, 1986  
Treasurer; 1979, 1980, 1981  
Secretary; 1978  
Chairman Joint Committee on Group  
Life Insurance and Group Disability Plan, 1977  
Collective Bargaining Committee, 1975-1977

(b) Selection Committee for Dean of Pharmaceutical Sciences, 1984

(c) CUPE Negotiations Advisory Committee, 1984

(d) SENATE; to replace Dr. T. Brown as of Jan./87-Aug. 31/87; As Dean of Faculty, 1996-August, 2002.  
Subcommittees: Agenda and University Liaison Committee, July, 1996-August, 2002.

(e) CHEMISTRY; Mass Spectrometry Committee, 1991-97.

(f) Life Sciences Library Committee, 1993-96, Library Focus Groups 1994/95

(g) Health Sciences Coordinating Committee (Health and Human Services Council) July 1996-August 2002.

(h) **Committee of Deans**, July 1996 to August 2002.

(i) Dean's Retreat subcommittees: Tuition, Promotion and tenure, 1999-2000.  
Streamlining Administrative Processes, 2000-01.

(j) President's Advisory Committee, September, 1997 - August, 2002.

(k) Senior Appointments Committee, July 1996-1998.

(l) Academic planning committee, 1998-2000.

(m) Biomedical Research Centre – advisory committee, 2000-01.

(n) Dean of Dentistry review: 2000.

(o) CIHR Institutes planning subcommittee, 2000.

(p) Selection committee – Associate Vice-President Academic Programs, 1999.

(q) Presidents Service Award for Employees Committee, 2000-2002.

**(b) Other service, including dates**

MEDICINE; Medicine 2000 - member of the working committee, Institute for Child, Maternal and Youth Studies, 1991-92.

Strategic Planning for Applied Research and Knowledge (SPARK) Committee: of the Science Council of B.C., Pharmaceutical working group, 1991-1995.

ERDA; Member of steering committee and chairman of preclinical subcommittee struck to produce the BIRC proposal for federal and provincial government funding, 1994-95.

PHARMACEUTICAL FORUM, Vancouver, 1994; Speaker representing the Faculty of Pharmaceutical Sciences.

BC INSTITUTE FOR CHILD AND FAMILY HEALTH, 1996, Pediatric Pharmacology Research Centre Committee.

TZU CHI INSTITUTE, 1996, Chairman of the pharmacology and laboratory subcommittee of the Science Advisory Committee.

BCIT, 2002-2006, member of the Program Advisory Committee of Forensic Science Technology.

Chair of the review committee for the Department of Pharmacology and Therapeutics, Faculty of Medicine, UBC, December, 2002.

Health Canada Special Advisory Committee on Drug Induced Hepatotoxicity, 2004-2007

CIHR Doctoral Research Award review committee, 2006, 2007 and 2008. CIHR Canada Graduate Scholarships Masters Awards, 2007, 2008.

## 11. **SERVICE TO THE COMMUNITY**

### ***(a) Memberships on scholarly societies, including offices held and dates***

#### **Association of Faculties of Pharmacy of Canada (AFPC)**

AFPC Delegate from UBC, 1968-71

Curriculum Committee, 1967-68

Chairman of Curriculum Committee, 1968-71

Teachers Conference Chairman, 1970

Member of 1984 Organizing Committee for Vancouver Conference

Coordinator for Research Conference, 1984

Chairman for Poster Presentations AACP/AFPC, Portland, 1989

Chairman of Selection Committee for the McNeil Award, UpJohn Young Investigator Award, and Merck Frosst Fellowships, 1994.

**Executive Director**, 2003-2010

**Canadian Pharmaceutical Association:** Member since 1959 or earlier.

**Received Honorary Membership in CPhA in 2009 – Halifax meeting.**

**Saskatchewan Pharmaceutical Association, 1959-1984**

**Honored with 50 year Alumni Award in 2009.**

**British Columbia Pharmacists Society**

Chairman, Employment Relations Committee in 1979, 1980, 1981, 1982

**American Pharmaceutical Association, past member**

**American Chemical Society**

**Sigma Xi**

**American Society for Mass Spectroscopy**

**International Society for the Study of Xenobiotics (ISSX)**



Scientific Advisory committee for meetings 1999 – present.  
Program Chairman International Conference 2004 in Vancouver.  
Poster evaluation and judging committee, 2005  
Program Committee, Poster evaluation and Judging, 2007

**American Association of Pharmaceutical Scientists**

Nomination and reference letter of Ron T, Coutts for AAPS Fellow  
Nomination and reference for James Axelson for AAPS Fellow.

**BC College of Pharmacists:**

Member of Council, 1996-2002.  
Member of Executive Committee  
Member of Liaison Committee: University/College/Association

**BC Pharmacy Association.**

**Canadian Society for Pharmaceutical Sciences (CSPS) 1997-present.**

Founding member.  
Treasurer, 1997 – 2000.  
Conference planning committee, 3<sup>rd</sup> annual Symposium, Vancouver, June 2000.  
Member at Large, 2000 – 2002.  
Nomination and reference letter for Mo Jamali for Fellowship Award, 2009-2010.  
President Elect 2014.

**Association of Deans of Pharmacy of Canada (ADPC), 1996-2002.**

President 1997 – 1999.  
Delegate to the Canadian Council for Accreditation of Pharmacy Programs (CCAPP), 1997-2001.  
Annual Conference planning: 1998 – Ottawa, 1999 – Whistler.  
Prix Galien: Belleau/Nickerson Award Committee.  
Pharmacy Faculty Benchmark document development.  
Chair Drug Information/Drug Effectiveness Initiative.  
Associations first **Executive Director**, 2003 to 2010.

**American Association of Colleges of Pharmacy (AACP):**

Reviewer for New Investigators Program.  
Program Committee, Joint AACP/AFPC Conference, July 19-24, 2008, Chicago, Illinois.

**Canadian Council for the Accreditation of Pharmacy Programs (CCAPP):**

President, 1999-2000.  
ADPC representative, 1997 – 2001.

**Canadian College of Clinical Pharmacy, Past member.**

**Drug Information Association, Past Member.**

**(b) Memberships on other societies, including offices held and dates**

**British Columbia Pharmacists Society**

Chairman, Employment Relations Committee in 1979, 1980, 1981, 1982  
**Professional Societies:** Member of the B.C. Gas Chromatography - Mass Spectrometry Discussion Group - secretary/treasurer, 1992-1999

**(c) Memberships on scholarly committees, including offices held and dates**

Medical Research Council

Peer-review Committee/Pharmaceutical Sciences: 1987-1989  
University/Industry Fellowship Grants Committee, 1992  
Membership Review Committee of Pharmaceutical Sciences, 1996.

British Columbia Health Care Research Fund

Health Development Fund, Major Equipment Competition, Grants Review Committee, 1991

**(d) Memberships on other committees, including offices held and dates**

N/A

**(e) Editorships (list journal and dates)**

Journal of Pharmacy and Pharmaceutical Sciences, Editorial Board, 1997-present.

**(f) Reviewer (journal, agency, etc. including dates)**

Manuscript Reviews: Canadian Journal of Pharmaceutical Sciences, Journal of Pharmaceutical Sciences, Canadian Journal of Physiology and Pharmacology, Journal of Pharmacological and Toxicological Methods, Canadian Journal of Chemistry, Xenobiotica, Canadian Pharmaceutical Journal, Pharmaceutical Research, Biochemical Pharmacology, Chemical Research in Toxicology, Journal of Chromatography, Chirality, Journal of Pharmacology and Experimental Therapeutics, Journal of Medicinal Chemistry, Journal of Mass Spectrometry, Epilepsia, Epilepsy Research, Drug Metabolism Disposition.

Grant Application Reviews: Canadian Institutes for Health Research (formerly MRC), Natural Sciences and Engineering Research Council of Canada, Alberta Heritage Foundation, Manitoba Research Foundation, Heart and Stroke Foundation, Science Council of British Columbia, Research Grants Council of Hong Kong, Bi-national Science Foundation – US/Israel. Saskatchewan Health Services Research. MITACS.

MRC Site visit - Development Grant - Pharmacy, University of Manitoba, 1990.

BCHRF Health Development Fund Major Equipment subcommittee, 1992.

MRC Site visit – Multi-user Major Equipment Grant, University of Montreal, 1994.

Book Review for Journal of Pharmacological Methods, A.F. Harms, Innovative Approaches in Drug Research, Elsevier, 1986, 481 pp.

Book review to CRC Press 1990.

Reviews for promotion and tenure of faculty in Alberta, Manitoba, Saskatchewan, Halifax, Toronto, and North Carolina, California.

Reviews for promotion of Scientists in the Pharmaceutical Industry.

Member of a Review Committee: To examine research and related matters in the Pharmaceutical Chemistry Division and the Chemical Standards Division of the Drug Research Laboratories, Health Protection Branch, Health and Welfare Canada Ottawa, 1979.

**(g) External examiner (indicate universities and dates)**

External Examiner, Ph.D. theses: W. Taylor, University of Saskatchewan (1973), A.M. El-hawari, University of Alberta (1974), Ossama El-Badry, University of Alberta (1985), Nalisha Bannerjee, University of Toronto (2014).

**(h) Consultant (indicate organization and dates)**

Invited consultant to the School of Pharmacy, Addis Ababa University, Addis Ababa, Ethiopia, regarding the development of a graduate degree program in Pharmacy and on the establishment of a drug research centre of traditional Ethiopian medicines, 1989.

Consultant to the Zhejiang Research Institute of Traditional Chinese Medicine, Hangzhou, P.R.C., 1990.

**Consultancies:**

Member of the Medical/Scientific Advisory Board of Forbes Meditech Inc. Vancouver, 2003-

Consultant to BRI, Vancouver, 2000-2003.

Consultant to Syva Company, California; Evaluation of "EMIT" free valproate assay, 1981 and in 1999.

Consultant to Neuromedica Inc., John Armstrong, Pres., 1990-91.

Consultant to AK Research, 1991-1995.

Consultant to Microgenics, Concord, California, 1991/92.

Consultant to Biotrack Inc., Mountain View, California, 1993.

Consultant to Elemental Research Inc., N. Vancouver, 1994-97.

Consultant to Viridae Clinical Sciences Inc., 1994-97.

**Commissions:**

Assistant author to F.A. Morrison, "A Submission to the Commission on Pharmaceutical Sciences", by the Association of Faculties of Pharmacy of Canada, 1969.

**(i) Other service to the community**

**Other public service:**

1985-1986 Consultant to the Coroner and Health Protection Branch on GCMS drug analysis

Previously licensed for "street drug" analysis

1980 Seminar on LSD analysis to the Department of Justice, Vancouver Drug identification (Mexican drugs, herbal remedies, etc.) for physicians, pharmacists and the public where possible.

**12. AWARDS AND DISTINCTIONS**

**(a) Awards for Teaching (indicate name of award, awarding organizations, date)**

1976-1977 First recipient of the UBC Pharmaceutical Sciences Master Teacher Award.

1982-1983 Pharmaceutical Sciences Master Teacher Award.

1988-1989 Pharmaceutical Sciences Teaching Appreciation Award.

1994 Recipient of the UBC teaching prize for the Faculty of Pharmaceutical Sciences.

- 1995            Graduating class Master Teacher Award.
- 1995            Bristol-Myers Squibb Award for excellence in teaching.
- 1996            Graduating class Master Teacher Award.

**(b)    Awards for Scholarship (indicate name of award, award organizations, date)**

- 1991    Kelem Kassahun, my Ph.D. student, received the AAPS Graduate Symposium Award in Pharmacokinetics, Pharmacodynamics, and Clinical Sciences, for our paper entitled, "Mechanistic studies of valproic acid hepatotoxicity, identification and characterization of thiol conjugates".
- 1993    Undergraduate student, Dharminder Dhandra received the Wyeth Prize for the best graduating thesis entitled "Fluorescence labelling with BCECF as a means of assessing *in vitro* lymphocyte toxicity".
- 1993    Recipient of the Association of Faculties of Pharmacy of Canada, McNeil Award in recognition of a significant contribution to pharmaceutical research.
- 2012    Awarded Fellow of the Canadian Society for Pharmaceutical Sciences

**(c)    Awards for Service (indicate name of award, awarding organizations, date)**

- 1983    Service Award from the B.C. Pharmacists Society
- 2002    Len Marks Pharmacy Advancement Award, Canadian Association of Chain Drug Stores, Montreal Conference, October, 2002.
- 2009    Honorary Life Membership, Canadian Pharmacists Association.

**(c) Other Awards**

- 1996    Just Desserts Award, Undergraduate Pharmacy Students

**13.    OTHER RELEVANT INFORMATION (Maximum One Page)**

N/A

**THE UNIVERSITY OF BRITISH COLUMBIA**  
***Publications Record***

**SURNAME:** ABBOTT

**FIRST NAME:** Frank  
**MIDDLE NAME(S):** Slade

**Initials:** F.S.  
**Date:** March, 2015.

**1. REFEREED PUBLICATIONS**

**(a) *Journals***

J.N. Wells and F.S. Abbott, Thietane 1,1-Dioxides, *J. Med. Chem.*, 9, 489-492 (1966).

F.S. Abbott, J.E. Coates and K. Haya, "2,4-Diaryl-3-dimethylaminothietane 1,1-Dioxides, Synthesis, Configuration and Stability", *J. Org. Chem.* 22, 3502-3506 (1977).

J.E. Coates and F.S. Abbott, "2,4-Diarylthiete 1,1-Dioxides: Synthesis, Thermolysis Studies, and Addition Reactions", *J. Org. Chem.* 22, 3506-3514 (1977).

F.S. Abbott and K. Haya, "Synthesis of Substituted Thietanes and Thiolanes from  $\alpha$ - and  $\beta$ -Chloroepoxides and their oxidation to 1,1-Dioxides", *Canadian Journal of Chemistry*, 56, 71-79 (1978).

G.D. Bellward, P. Warren, W. Howald, J.E. Axelson and F.S. Abbott, "Methadone Maintenance: Effect of Urinary pH on renal clearance in chronic high and low doses", *Clin. Pharmacol. Ther.*, 22, 92-99 (1977).

G. Kang, F.S. Abbott and R.W. Burton, "Synthesis and Mass Spectrometry of Deuterated Methadone and Methadone Metabolites", *Biomedical Mass Spectrometry*, 6, 179-186 (1979).

Y.K. Tam, D.S.-L. Au, F.S. Abbott, "An Improved GLC-FID Assay of Acetylsalicylic and Salicylic Acid", *J. Chromatog.*, 174, 239-244 (1979).

D. S.-L. Au, J.O. Runikis, F.S. Abbott and R.W. Burton, "GLC Analysis of Hydrocortisone, Triamcinolone Acetonide and Desonide in Culture Media of Mouse and Human Dermal Fibroblasts Using Flame-Ionization Detection", *J. Pharm. Sci.*, 70, 917-923 (1981).

Frank S. Abbott, James Orr, Roland Burton, Diana Wladichuk, Sheila Ferguson and Ting-Hui Sun, "Valproic acid analysis in saliva and serum using selected ion monitoring (EI) of the tertiarybutyldimethylsilyl derivatives", *J. Chromatog.*, 227, 433-444 (1982).

Raman Venkataramanan, Frank S. Abbott and James E. Axelson, "Metabolism of Tocainide in the Rat", *J. Pharm. Sci.*, 71, 491-494 (1982).

Gun Il Kang and Frank S. Abbott, "Analysis of methadone and metabolites in biological fluids with gas chromatography-mass spectrometry", *J. Chromatog.* 231, 311-319 (1982).

Orr, J.M., Abbott, F.S., Farrell, K., Ferguson, S., Godolphin, W.J., "Interaction between valproic acid and aspirin in epileptic children: Serum protein binding and metabolic effects", *Clin. Pharmacol. Therap.*, 31, 642-649 (1982).

J.M. Orr, K. Farrell, F.S. Abbott, S. Ferguson, W. Godolphin, "The effects of peritoneal dialysis on the single dose and steady state pharmacokinetics of valproic acid in a uremic epileptic child", *European Journal of Clinical Pharmacology*, 24, 1-4 (1983).

Farrell, K., Orr, J.M., Abbott, F.S., Ferguson, S., Sheppard, I., Godolphin, W., Bruni, J., "The effect of acetylsalicylic acid on serum free valproate concentrations and valproate clearance in children", *J. Pediatrics*, 101, 142-144 (1982).

T-H. Sun, F. Abbott, R. Burton and J. Orr, "Synthesis of Deuterium Labelled Zomepirac", *Journal of Labelled Compounds and Radiopharmaceuticals*, 19, 1043-1050 (1982).

A. Acheampong, F. Abbott, and R. Burton, "Identification of Valproic Acid Metabolites in Human Serum and Urine using Hexadeuterated Valproic Acid and GCMS Analysis", *Biomedical Mass Spectrometry* 10, 586-595 (1983).

A. Acheampong, F. Abbott, J. Orr, S. Ferguson and R. Burton, "Use of Hexadeuterated Valproic Acid and Gas Chromatography - Mass Spectrometry to Determine the Pharmacokinetics of Valproic Acid", *J. Pharm. Sci.*, 73, 489-494 (1984).

R.P. Kapil, F.S. Abbott, C.R. Kerr, D.J. Edwards, D. Lalka, and J.E. Axelson, "Simultaneous Quantitation of Disopyramide and its Mono-dealkylated metabolite in Human Plasma by Fused-Silica Capillary Gas Chromatography using Nitrogen-Phosphorous Specific Detection", *J. Chromatog.*, 307, 305-321 (1984).

D.J., McKenna, G.H.N. Towers and F.S. Abbott, "Monoamine Oxidase Inhibitors in South American Hallucinogenic Plants: Tryptamine and  $\alpha$ -Carboline Constituents of Ayahuasca", *J. of Ethnopharmacology*, 10 (2), 195-223 (1984).

D.J. McKenna, G.H.N. Towers and F.S. Abbott, "Monoamine Oxidase Inhibitors in South American Hallucinogenic Plants Pt. II: Constituents of Orally-Active Myristicaceous Hallucinogens", *J. of Ethnopharmacology*, 12, 179-211 (1984).

F.S. Abbott, J.G. Slatter, R. Burton and G-I Kang, "Methadone Metabolism in the Rat *In vivo*: Identification of a Novel Formamide Metabolite", *Xenobiotica*, 15, 129-140 (1985).

A. Acheampong and F.S. Abbott, "Synthesis and Stereochemical Determination of Diunsaturated Valproic Acid Analogs Including Its Major Diunsaturated Metabolite", *J. Lipid Research*, 26, 1002-1008 (1985).

Frank S. Abbott, J. Gregory Slatter and Gun Il Kang, "Characterization of New Oxidation products of the Methadone Metabolite, ( $\pm$ )-2-Ethyl-1,5-Dimethyl-3,3-Diphenylpyrrolinium Perchlorate (EDDP), *Tetrahedron* 42, 245-248 (1986).

F.S. Abbott, J. Kassam, A. Acheampong, S. Ferguson, S. Panesar, R. Burton, J. Orr and K. Farrell, "Capillary GCMS of Valproic Acid Metabolites using Tertiary-butyldimethylsilyl Derivatives", *J. Chromatog.*, 375, 285-298 (1986).

F. S. Abbott, J. Kassam, J. Orr and K. Farrell, "The Effect of Aspirin on Valproic Acid Metabolism", *Clin. Pharmacol. Therap.*, 40, 94-100 (1986).

K. Farrell, F. Abbott, J. Orr, D. Applegarth, J. Jan and P. Wong, "Free and Total Valproate concentrations: Their relationship to Seizure Control, Liver Enzymes and Plasma Ammonia in Children," *Can. J. Neurol. Sci.*, 13, 252-5 (1986).

K. Farrell and F. Abbott, "Pharmacological Aspects of Valproic Acid Metabolites in Children" in *Valproic Acid in the Treatment of Epilepsy-An Update*, S.T.A. Communications Inc., 1987

G.L-Y Chan, J.E. Axelson, F.S. Abbott, C.R. Kerr and K.M. McErlane, "Determination of Propafenone in Biological Fluids by Fused Silica Capillary Gas Chromatography using Electron-Capture Detection", *J. Chromatog.*, 417, 295-308 (1987).

Kuldeep Singh, Frank S. Abbott and James M. Orr, "Capillary GCMS Assay of 2-n-propyl-4-pentenoic acid (4-ene VPA) in Rat Plasma and Urine," *Research Communications in Chemical Pathology and Pharmacology*, 56, 211 (1987).

F. Abbott and A. Acheampong, Quantitative Structure-Anticonvulsant Activity Relationships of Valproic Acid, Related Carboxylic Acids and Tetrazoles, *Neuropharmacology*, 27, 287-294 (1988).

Kuldeep Singh, James M. Orr, and Frank S. Abbott, Pharmacokinetics and Enterohepatic Recirculation of 2-n-Propyl-4-pentenoic acid (4-ene-VPA) in the Rat, *Drug Metab. Dispos.*, 16, 848-852 (1988).

J. Greg Slatter, Abdul E. Mutlib and Frank S. Abbott, "Biotransformation of arylaliphatic formamides I: Metabolites of (±) N-methyl-N-(1-methyl-3,3-diphenylpropyl) formamide in rats," *Biomed. Environ. Mass Spectrom.*, 18, 690-701 (1989).

S. Panesar, J. Orr, K. Farrell, R. Burton, and F. Abbott, "The Effect of Carbamazepine on Valproic Acid Disposition in Adult Volunteers", *Br. J. Clin. Pharmac.* 27, 323-328 (1989).

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**(c) Other**

N/A

**2. NON-REFEREED PUBLICATIONS**

**(a) Journals:** N/A

**(b) Conference Proceedings:** N/A

**(c) Other:** N/A

**3. BOOKS**

**(a) Authored:** N/A

**(b) Edited:** N/A

**(c) Chapters:**

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**4. PATENTS**

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5. **SPECIAL COPYRIGHTS**

N/A

6. **ARTISTIC WORKS, PERFORMANCES, DESIGNS**

N/A

7. **OTHER WORKS**

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8. **WORK SUBMITTED (including publisher and date of submission)**

N/A

9. **WORK IN PROGRESS (including degree of completion)**

**Abstracts and presentations, submitted: See above.**