A. BIOGRAPHICAL INFORMATION

1. PERSONAL

- Name: Patrick T. Gunning
- University address: 3359 Mississauga Rd. North, Mississauga, L5L 1C6
- Office phone: 905-569-4588
- Email: patrick.gunning@utoronto.ca
- Webpage: www.chem.utoronto.ca/staff/pgunning/index.html

2. DEGREES

- B.Sc. (hons) - 2001 - University of Glasgow, UK

- Ph.D. - 2005 - University of Glasgow, UK

Ph.D. Thesis:
"Mimicking Enzymes with Bioinorganic Reaction Centres"

Supervisors: Prof. Robert D. Peacock & Prof. Andrew C. Benniston

3. EMPLOYMENT

05/2005-05/2007
- Post-Doctoral Research Associate, Hamilton's Laboratory, **Yale University**, Department of Chemistry, U.S.A

07/2007 – 06/2012
- Assistant Professor (tenure track), **University of Toronto, Mississauga**
Department of Chemical & Physical Sciences and Department of Chemistry (Graduate Department)

07/2012 – present
- Associate Professor, **University of Toronto, Mississauga**
Department of Chemical & Physical Sciences and Department of Chemistry (Graduate Department)

04/2013 – present
- Canada Research Chair in Medicinal Chemistry, Tier II, **University of Toronto, Mississauga**
Department of Chemical & Physical Sciences and Department of Chemistry (Graduate Department)

4. HONOURS

06/2015 - 2015 McLean Award, Connaught Foundation, University of Toronto.

06/2015 - 2015 Honorary Member of the Golden Key International Honour Society, York University Chapter (UK)

02/2015 - Rose Winer Levin Lectureship, Dana-Farber Cancer Institute, Harvard Medical School (USA)

03/2015 – Natural Sciences Engineering Research Council (NSERC) Accelerator Award (Canada)

07/2015 – Canada Research Chair in Medicinal Chemistry, Tier II (Canada)

01/2013 – 2013 Baird of Bute Scottish Innovation Award – Baird of Bute Society (UK)

04/2013 – 2013 University of Toronto Inventors of the Year – University of Toronto Innovations and Partnership Office (Canada)

04/2013 – 2013 CSC Ichikizaki Fund for Young Chemists Award – Canadian Society for Chemistry (Canada)

01/2013 – 2013 Toronto Star's Top 10 people to watch in 2013

05/2012 – 2012 Royal Society for Chemistry's *MedChemComm* Emerging Investigator Lectureship Award (UK)

04/2012 – 2012 CSC Ichikizaki Fund for Young Chemists Award – Canadian Society for Chemistry (Canada)

04/2011 – 2011 CSC Ichikizaki Fund for Young Chemists Award – Canadian Society for Chemistry (Canada)

03/2011 – 2011 Dean's Research Excellence Award at University of Toronto Mississauga – UTM (Canada)

05/2010 – 2010 Boehringer Ingelheim Young Investigator Award – Boehringer Ingelheim (Canada)

10/2010 – 2010 University of Glasgow Young Alumnus of the Year, University of Glasgow (UK)

05/2010 – 2010 Early Researcher Award, Ministry of Research and Innovation, Province of Ontario

10/2008 - Awarded the David Rae Memorial Award for Innovative Research in the field of Leukemia and Lymphoma Research by the Leukemia and Lymphoma Society of Canada.

07/2004 -Royal Society Chemistry, Dalton Transactions National Meeting, University of Edinburgh, Presentation Award (1^{st})

01/2003 - Royal Society Chemistry, Macrocyclic and Supramolecular Chemistry, University of York, Presentation Award (1^{st}).

5. PROFESSIONAL AFFILIATIONS AND ACTIVITIES

2009-present Member, American Association for Cancer Research

2008-present Member, Canadian Society of Biochemistry, Molecular and Cellular Biology

2008-present Member, Canadian Society of Chemistry

2002-present Member, American Chemical Society

2002-present Member, Royal Society of Chemistry

B. ACADEMIC HISTORY

6 A RESEARCH ENDEAVOURS

- Designing site-specific covalent warheads for improving binding potency and protein target residence time.

- Design and synthesis of excimer forming compounds for applications in early cancer diagnosis and pTau protein detection for drug discovery efforts.

- Design and synthesis of Stat3 protein inhibitors: developing rationally designed small molecule inhibitors of cancer promoting Stat3:Stat3 protein complexes – treatment of breast and pancreatic cancer.

- Design and synthesis of Stat5 protein inhibitors: developing rationally designed small molecule inhibitors of cancer promoting Stat5:Stat5 protein complexes – treatment of AML, CML, and MM.

- Design and synthesis of E1 enzyme inhibitors: developing rationally designed small molecule inhibitors of UBA5, UBA1, and UBA3 for treatment of human leukemias.

- Non-covalent prenylation of signal transducer proteins – inhibiting the nuclear translocation of transcriptionally active, cancer-promoting proteins: developing new approaches to medicinal therapeutics.

- Developing Lewis acidic metal-based Src Homology 2 (SH2) domain proteomimetics: the first application of Lewis acidic organometallic complexes as functional proteomimetics of a Stat3 SH2 domain. In an unprecedented therapeutic role, functionalized BDPA copper(II) complexes are shown to effectively disrupt oncogenic Stat3:Stat3 protein complexes in cancer cells.

- Developing small molecule Src Homology 2 (SH2) domain proteomimetics: developing small molecule mimetics of SH2 domains. Establishing more ‘drug-like’ mimetics of the SH2 domain.

- PNA-mediated self-assembly of hetero-dimetallic enzymatic reaction centres: Development of heterodimetallic reaction centres to mimic superoxide dismutase, establish novel bioinorganic materials.

- PNA-hydrolysis catalyst conjugates - sequence specific hydrolysis: conjugation of organometallic hydrolysis catalysts to PNA sequences: sequence specific cleavage.

- Mitsunobu Purines: Facile and efficient access to 2,6, 9-trisubstituted purines through sequential N9, N2 Mitsunobu reactions. Development of new molecular therapeutics for Myc/Max disruption.

B. RESEARCH AWARDS. (35 Awards in 5 years)

MITACS Accelerate Award. PDF Cluster Award 09/2015-01/2018, "Identification of STAT3/5 Advanced preclinical Candidates" Award amount = $360,000. Role: PI.

Canadian Cancer Society, Innovation to Impact Grant, 04/2015-04/2018, "Investigating the UBA5 enzyme in cancer proliferation and as a promising target for adjuvant therapy." Award Amount = $450,000. Role = PI.

Mclean Award, Connaught Foundation, University of Toronto, 06/2015 – 06/2020, Award Amount = $125,000. Role = PI.

Canadian Foundation for Innovation, Innovation Fund, "Centre for Cancer Stem Cell Therapeutics" Award Amount = $2,382,000. Role = PI.

Ontario Research Foundation, Innovation Fund, "Centre for Cancer Stem Cell Therapeutics" Award Amount = $2,382,000. Role = PI.

Canadian Institutes for Health Research, Operating Grant, "Developing STAT5 protein inhibitors for treatment of Leukemia." 06/2014 – 06/2019, Award Amount = $607,500. Role = PI. **Ranked #1 in panel**

Natural Sciences Engineering Research Council, Accelerator Award, "Controlling Protein Complexation and Cellular Localization using Novel Molecular Therapeutics." 03/2014 – 03/2017, Award Amount = $120,000. Role = PI.

Natural Sciences Engineering Research Council, Discovery Grant, "Controlling Protein Complexation and Cellular Localization using Novel Molecular Therapeutics." 03/2014 – 03/2020, Award Amount = $420,000. Role = PI.

Stem Cell Research Network, SCN Drug Discovery Program, "Targeting STAT5 protein in leukemia-initiating stem cells for treatment of myelogenous leaukemias" 01/2014 – 01/2015, $100,000. Role = PI.

Stem Cell Research Network, SCN Commercialization Impact Grant, "Improving the clinical efficacy of a novel STAT3 inhibitor for GBM therapy" 01/2014 – 01/2015, $44,000. Role = PI.

Canadian Foundation for Innovation, John Evans Leader's Fund, "Developing a Knowledge Transfer Centre for Identifying Inhibitors of

Protein-Protein Interactions." 07/2014 – 01/2019, Award Amount = $405,006. Role = PI.

Ontario Research Foundation, for Small Infrastructure Funds, "Developing a Knowledge Transfer Centre for Identifying Inhibitors of Protein-Protein Interactions." 07/2014 – 01/2016, Award Amount = $405,006. Role = PI.

National Institutes of Health, R21 Operating Grant, "Developing Novel STAT5 Protein Inhibitors for treatment of leukemias." 09/2014 – 09/2016, Award Amount = $170,000. Role = Co-PI.

Canadian Institutes for Health Research, Operating Grant, "Identification and In vivo characterization of Trace Amine Associated Receptor 1 (TAAR1) Antagonists." 05/2014 – 05/2019, Award Amount = $150,000. Role = Collaborator.

Leukemia and Lymphoma Society, Screen-to-Lead Program, "Hematologic Malignancies." 01/2014 – 12/2015, Award Amount = $420,000. Role = Co-PI.

Canada Research Chair in Medicinal Chemistry, Tier II, "Developing inhibitors of STAT5 protein." 08/2013 – 08/2018, Award Amount = $500,000. Role = PI.

Canadian Institutes for Health Research, Operating Grant, "Silencing Stat3 signaling in multiple myeloma: identifying potent small molecule inhibitors of Stat3." 05/2013 – 05/2017, Award Amount = $483,200. **Ranked #1** Role = PI.

Alberta Innovates, Health Challenges Operating Grant, "Targeting the STAT3 Signalling Pathway in Glioblastoma." 3/2013 – 3/2016, Award Amount = $759,800. Role = Co-PI.

Stem Cell Research Network, Drug Discovery Grant, "Validating a target specific small molecule STAT3 inhibitor for GBM brain tumour stem cells." 01/2013 – 01/2014, Award Amount = $75,000. Role = Co-PI.

Canadian Cancer Society (CCSRI), Innovation Grant, "Structural optimization and mechanistic characterization of a novel and selective class of ubiquitin activating enzyme-selective inhibitor." 07/2012 – 07/2014, Award Amount = $200,000. Role = PI.

Canadian Breast Cancer Foundation, Operating Grant, "Developing potent, non-phosphorylated, orally bioavailable small molecule inhibitors of Stat3 protein function for treatment of breast cancer." 07/2012 – 07/2015, Award Amount = $450,000. Role = PI.

Stem Cell Research Network, Drug Discovery Grant, "Optimization of a small molecule STAT3 inhibitor for targeting of brain tumour stem cells." 01/2012 – 01/2013, Award Amount = $75,000. Role = Co-PI.

Centre for Probe Development and Commercialization, ISRP program, "Preparation of novel Tc or Re radiopharmaceuticals." 05/2011 – 05/2013, Award Amount = $300,000. Role = PI.

The Leukemia & Lymphoma Society of Canada, Operating Grant – 01/10/2011 – 01/10/2013, "Induced STAT3 protein localization: novel treatment of leukemia and Lymphoma." Award Amount = $120,000. Role = PI.

The Leukemia & Lymphoma Society of Canada, Operating Grant – 07/2009–07/2011, *"Inhibiting Oncogenic STAT3 Protein Complexes with SH2-Domain Proteomimetics."*Award Amount = **$118,000**, Role: PI

Early Researcher Award, Operating Grant – 04/2010–04/2014, "Developing novel Uba1 Molecular Therapeutics:Suppressing the Side-Effects of Aggressive Chemotherapy." Operating Grant – 04/2010–04/2014, Award Amount = $150,000 ($37,500/Yr for 4 Years) Role: PI

Boehringer Ingelheim Young Investigator Award, unrestricted operating grant – 07/2010–07/2013, Award Amount = $60,000 ($20,000/Yr for 3 Years)

The Leukemia & Lymphoma Society of Canada, Operating Grant – 07/2008–07/2010, *"Induced Stat3 protein localization as a novel approach to leukemia and lymphoma cancer therapy"* Award Amount = **$120,000** ($60,000/Yr for 2 Years – renewal option for further 2 years), Role: PI

The National Institutes of Health (U.S.A.), Operating Grant – 10/2008–10/2012, *"Therapeutic Application of Novel Stat3 Inhibitors in Breast and Pancreatic Cancers"* Award Amount = **$136,000** ($34,000/Yr for 4 years), Role: Joint PI

NSERC Discovery Grant, Operating Grant – 04/2009–04/2014, "*Development of Novel Molecular Therapeutics*" Award Amount = **$150,000**. ($30,000/Yr for 5 years), Role: PI

The National Institutes of Health (U.S.A.), Operating Grant – 02/2009–02/2010, *"Targeting STATs as a Novel Approach to Cancer Therapy"* Award Amount = **$35**,**000**, ($35,000/Yr for 1 year) Role: PI

Canadian Foundation for Innovation, Infrastructure Grant – 03/2008–03/2012, "*Developing Small Molecule Modulators of Protein-Protein Interactions"* Award Amount = **$131**,**890**, Role: PI

Ontario Research Fund, Infrastructure Grant – 03/2008–03/2012, "*Developing Small Molecule Modulators of Protein-Protein Interactions"* Award Amount = **$131**,**890**, Role: PI

Connaught New Staff Matching Grant, Operating Grant – 08/2008–08/2009 *"Selective Suppression of Cancer-Promoting Proteins through Functionalized Small Molecule Protein Recognition Agents"* Award Amount = **$30**,**000**, Role: PI

Connaught Start-Up Grant, Operating Grant – 06/2008–06/2009
"Manipulating protein-protein interactions" Award Amount = **$10**,**000**, Role: PI

TOTAL AWARDED = ~$13 M

C. SCHOLARLY AND PROFESSIONAL WORK

7. Refereed publications

Published or In Press (66 Publications in press or published)

2015 (13 papers in 2015)

65. Arpin, C. C., Mac, S., Cheng, H., Jiang, Y., Page, B. D. G., Kamocka, M. M., Haftchenary, S., Su, H., Ball, D., Rosa, D., Lai, P-S., Gómez-Biagi, R. F., Ali, A. M., Kerman, K., Fishel, M. L., and Gunning, P. T. "Rationally Designed STAT3 Protein Inhibitors as Pancreatic Cancer Therapeutics." *Mol. Cancer Ther.* **2015** *accepted.* IF = 6.107. MS# MCT-15-0003

64. Duodu, E., Kraskouskaya, D., **Gunning, P. T.** "A tool for the selective sequestration of ATP and PPi to aid in-solution phosphopeptide detection assays." *Analyst* **2015** AN-COM-07-2015-001414 *in press.*

63. da Silva, S. R., Paiva, S-L., Bancerz, M., Geletu, M., Lewis, A. M., Chen, J., Cai, Y., Lukkarila, J. L., Dhe-Paganon, S., Li, H., **Gunning, P. T.** 'A selective inhibitor of the UFM1-activating enzyme, UBA5.' *BMCL* **2015** *in press. Manuscript # MCL_BMCL-D-15-00846. DOI:10.1016/j.bmcl. 2015.10.015*

62. Shouksmith, A. E., **Gunning, P. T.** "Targeting Signal Transducer and Activator of Transcripion (STAT) 3 with Small Molecules." Book chapter for Royal Society of Chemistry Book, 'Small Molecule Transcription Factors in Oncology.' **2015**, *in press*.

61. Lai, P.L., Rosa, D. A., Ali, A. M., Gomez-Biagi, R. E., Ball, D. P., Shouksmith, A. E., **Gunning**, **P**. **T**. "A STAT inhibitor patent review: progress since 2011." *Ex. Opin. Ther. Pat.* **2015**, *22*, 1-25. IF = 3.441.

60. Haftchenary, S, Jouk, A. O., Aubry, I., Lewis, A. M., Landry, M., Ball, D. P., Shouksmith, A. E., Collins, C. V., Tremblay, M. L.,***** **Gunning, P. T.*** "Identification of Bidentate Salicylic Acid Inhibitors of PTP1B" *ACS Med. Chem. Lett.* **2015**, *6*, 982–986. IF = 3.120.

59. Singh, M., Garg, N., Venugopal, C., Hallett, R., Tokar, T., McFarlane, N., Arpin, C. C., Page, B. D. G., Haftchenary, S., Todic, A., Rosa, D. A., Lai, P-S., Gómez-Biagi, R., Ali, M., Lewis, A., Geletu, M., Mahendram, S., Bakhshinyan, D., Manoranjan, B., Vora, P., Qazi, M., Murty, N. K., Hassell, J. A., Jurisica, I., **Gunning**, **P**. **T**., Singh, S. K. "STAT3 pathway regulates lung-derived brain metastasis initiating cell capacity through miR-21 activation." *Oncotarget* **2015**, *6*, 27461-27477. IF = 6.63.

58. Linher-Melville, K., Haftchenary, S., **Gunning, P. T**., Singh, G.* "Signal transducer and activator of transcription 3 and 5 regulate system Xc- and redox balance in human breast cancer cells." *Mol. Cell. Biochem.* **2015**, *405*, 205-221. IF = 2.388.

57. Lewis, A. M., Rana, R., Park, J-S., Gomez, R., Shaheen, A., Rosa, D., **Gunning**, **P**. **T**. "Developing inhibitors of STAT proteins: Targeting downstream of the kinases for treating disease." Book chapter in "Kinomics: Approaches and Applications" by Wiley-VCH **2015**, *ISBN: 978-3-527-33765-1*

56. Zeidan, N., Su, H., Aitken, M., **Gunning**, **P**. **T**., Kerman, K.* "Magnetic bead-based electrochemical detection of interaction between epigallocatechin-3-gallate and STAT proteins." *Anal. Methods*, **2015**, *7*, 3566-3569. IF = 1.938.

55. Arabzadeh, A., Dupaul-Chicoine, J., Breton, V., Haftchenary, S., Yumeen, S., Turbide, C., Saleh, M., McGregor, K., Greenwood, C. M. T., Akavia, U. D., Blumberg, R. S., **Gunning**, **P**. **T**., Beauchemin, N. "Carcinoembryonic Antigen Cell Adhesion Molecule 1 long isoform modulates malignancy of poorly differentiated colon cancer cells." *Gut* **2015**, gutjnl-2014-308781. IF = 13.319.

54. Duodu, E., Kraskouskaya, D., Campbell, J., Graca-Lima, G., **Gunning**, **P**. **T**. "Selective detection of tyrosine-containing proximally phosphorylated motifs using an antenna-free Tb3+ luminescent sensor." **2015***, 51,* 6675 - 6677. IF = 6.718.

53. Eiring, A. M., Page, B. D. G., Kraft, I. L., Zhang, T. Y., Vellore N. A., Reynolds, K. R., Senina, A., Pomicter, A. D., Khorashad, J. S., Gu, Z., Anderson, D. J., Zabriskie, M. S., Arpin, C. C., Cologouri, R., Ahmad, S., Moriggl, R., Baron, R., O'Hare, T., **Gunning**, **P**. **T**.,* Deininger, M. W.* "Combined STAT3 and BCR-ABL1 Inhibition Induces Synthetic Lethality in Therapy-Resistant Chronic Myeloid Leukemia." *Leukemia* **2015**, *29,* 586-597. IF = 9.379.

2014 (6 publications in 2014)

52. Resetca, D., Haftchenary, S., **Gunning**, **P**. **T**., Wilson, D. J.* "Changes in Signal Transducer and Activator of Transcription 3 (STAT3) Dynamics Induced by Complexation with Pharmacological Inhibitors of Src Homology 2 (SH2) Domain Dimerization." *J. Biol. Chem.* **2014***, 289,* 32538-32547. IF = 4.600.

51. Cumaraswamy, A.A., Lewis, A. M., Geletu, M., Todic, A., Diaz, D. B., Cheng, X. R., Brown, C. E., Laister, R. C., Muench, D., Kerman, K., Grimes, L. H., Minden, M. D., **Gunning**, **P**. **T**.* "Nanomolar-Potency Small Molecule Inhibitor of STAT5 Protein." *ACS Med Chem Lett.* **2014**, *19*, 1202-1206. IF = 3.073.

50. Xu, G. W., Toth, J. I., daSilva, S., Paiva, S. L., Lukkarila, J. L., Hurren, R., MacLean, N., Sukhai, M. A., Bhattacharjee, R., Goard, C. A., **Gunning**, **P**. **T**., DhePaganon, S., Petroski, M. D.,* Schimmer, A. D.* "Mutations in UBA3 Confer Resistance to the NEDD8-Activating Enzyme Inhibitor MLN4924 in Human Leukemic Cells." *PLOSone* **2014**, *e93530. doi: 10.1371*. IF = 3.534.

49. Lai, A. Z., Cory, S., Zhao, H., Gigoux, M., Monast, A., Guiot, M. C., Huang, S., Tofigh, A., Thompson, C., Naujokas, M., Marcus, V. A., Bertos, N., Sehat, B., Perera, R. M., Bell, E. S., Page, D. G. B., **Gunning**, **P**. **T**., Ferri, L.E., Hallett,

M.L., Park, M. “Dynamic reprogramming of signaling upon Met inhibition reveals pathways for cell proliferation and negative feedback in gastric cancer.” *Science Signaling* **2014**, *7, p. ra38 [DOI: 10.1126/scisignal.2004839]*. IF = 7.648.

48. Kraskouskaya, D., Bancerz, M., Soor, H. S., Gardiner, J. E., **Gunning**, **P**. **T**.* “An excimer-based, turn-on fluorescent sensor for the selective detection of di-phosphorylated proteins in aqueous solution and polyacrylamide gels.” *J. Am. Chem. Soc.* **2014**, *136*, 1234–1237. IF = 11.444.

47. Martic, S., Rains, M. K, Haftchenary, S., Shahani, V. M., Kraskouskaya, D., Ball, D. P., **Gunning**, **P**. **T**., Kraatz, H-B.* “Electrochemical detection of the Fc-STAT3 phosphorylation and STAT3–Fc-STAT3 dimerization and inhibition.” *Mol. Bio. Syst.* **2014**, *10,* 576-580. IF = 3.183.

2013

46. Haftchenary, S., Luchman, H. A. Jouk, A. O., Veloso, A. J., Page, B. D. G., Cheng, X. R., Dawson, S. S., Grinshtein, N., Shahani, V. M., Kerman, K., Kaplan, D. R., Griffin, C., Aman, A. M., Al-awar, R., Weiss, S.* **Gunning**, **P**. **T**.* “Potent Targeting of the STAT3 Protein in Brain Cancer Stem Cells: A Promising Route for Treating Glioblastoma.” *ACS Med. Chem. Lett*. **2013**, *4*, 1102-1107. IF = 3.441.

45. Shahani, V. M., Ball, D. P., Ramos, A. V., Li, Z., Spagnuolo, P. A., Haftchenary, S., Schimmer, A. D., Trudel, S., **Gunning**, **P**. **T**.* “A 2,6,9-hetero-trisubstituted purine inhibitor exhibits potent biological effects against multiple myeloma cells.” *Bioorg. Med. Chem.* **2013**, *21*, 5618-28. IF = 3.205.

44. Page, B. D. G., Croucher, D., Li, Z. H., Haftchenary, S., Jimenez-Zepeda, V., Atkinson, J., Spagnuolo, P., Wong, Y. L., Colaguori, R., Lewis, A. M., Schimmer, A. D., Trudel, S.,* **Gunning**, **P**. **T**.* “Inhibiting Aberrant Signal Transducer and Activator of Transcription Protein Activation with Tetrapodal, Small Molecule Src Homology 2 Domain Binders: Promising Agents against Multiple Myeloma.” *J. Med.Chem.* **2013**, *56*, 7190-7200. IF = 5.480.

43. Haftchenary, S., Ball, D. P., Aubry, I., Landry, M., Shahani, V. M., Fletcher, S., Page, B. D. G., Jouk, A. O., Tremblay, M. L., **Gunning**, **P**. **T**.* “Identification of a potent salicylic acid-based inhibitor of tyrosine phosphatase PTP1B.” *RSC Med. Chem. Comm.* **2013**, *4*, 987-992. IF = 2.495.

42. Avadisian, M. A., **Gunning**, **P**. **T**.* “Extolling the Benefits of Molecular Therapeutic Lipidation.”*Mol. Bio. Syst.* **2013***, 9,* 2179-2188. IF = 3.183.

41. da Silva, S., Paiva, S-L., Lukkarila, J., **Gunning**, **P**. **T**.* "Exploring a new frontier in cancer treatment: Targeting the ubiquitin and ubiquitin-like activating enzymes." *J. Med. Chem.* **2013**, *56,* 2165–2177. IF = 5.480.

40. Camporeale, A., Marino, F., Papageorgiou, A., Carai, P., Fornero, S., Fletcher, S., Page, B. D. G., **Gunning**, **P**. **T**., Chiarle, R., Morello, M., Jenssen, O., Levi, R., Heymans, S., Poli, V. “STAT3 activity is necessary and sufficient for the development of immune-mediated myocarditis in mice and promotes progression to dilated cardiomyopathy.” *EMBO Mol. Med.* **2013**, *5*, 1-19. IF = 9.390.

39. Zhang, W., daSilva, S., Pavia, S. L., Lukkarila, J., Schimmer, A. D., **Gunning**, **P**. **T**.* "Targeting the ubiquitin E1 as a novel anti-cancer strategy." *Curr. Pharma. Design* **2013**, *19*, 3201-2209. IF = 3.288.

38. Kraskouskaya, D., Duodu, E., Arpin, C. C., **Gunning**, **P**. **T**.* "Progress towards the development of SH2 domain inhibitors." *Chem. Soc. Rev*., **2013**, *42*, 3337-3370. IF = 30.425.

37. Kraskouskaya, D., Drewry, J. A., Duodu, E., Burger, S., Eaton, J., **Gunning**, **P**. **T**.* "Exploring the structural determinants of selective phosphopeptide recognition using bivalent metal-coordination complexes." *Med. Chem. Comm.* **2013**, *4*, 289-292. IF = 2.626.

2012

36. Drewry, J. A., Duodu, E., Mazouchi, A., Spaganueulo, P., Burger, S., Gradinaru, C. C., Ayers, P., Schimmer, A. D., **Gunning**, **P**. **T**.* "Phosphopeptide Selective Coordination Complexes as Promising Src Homology 2 Domain Mimetics." *Inorg. Chem*, **2012**, *51,* 8284-8291. IF = 4.593.

35. Cumaraswamy, A., **Gunning**, **P**. **T**.* "Progress towards direct inhibitors of Stat5 protein." *Hormone Mol. Biol. Clin. Invest*. **2012**, *10*, 281-286.

34. Burger, S., Lacasse, M., Verstraelen, T., Drewry, J. A., **Gunning**, **P**. **T**., Ayers, P. W. "Automated Parameterization of AMBER force field terms from vibrational analysis with a focus on functionalizing a dinuclear zinc(II) scaffold." *J. Chem. Theory and Comput.* **2012**, *8,* 554-562. IF = 5.310.

33. Drewry, J. A., Duodu, E., Burger, S., Mazouchi, A., Ayers, P., Gradinaru, C. C., **Gunning**, **P**. **T**.* "Src Homology 2 Domain Proteomimetics: Developing Phosphopeptide Selective Receptors." *Med. Chem. Commun.* **2012**, *3*, 763-770. (LLSC, NSERC DG) (**front cover article**) IF = 2.626.

32. Mitra, R. N., Doshi, M., Zhang, Z., Tyus, J. C., Bengtsson, N., Fletcher, S., Page, B. D. G., Turkson, J., Gesquiere, A. J., **Gunning**, **P**. **T**., Walter G. A., Santra, S. "An activatable multimodal/multifunctional nanoprobe for direct imaging of intracellular drug delivery." *Biomaterials* **2012**, *33,* 1500-1508. IF = 8.312.

31. Zhang, X., Yue, P., Page, B. D. G., Li, T., Zhao, W., Namanja, A. T., Paladino, D., Zhao, J., Chen, Y., **Gunning**, **P**. **T**.,* Turkson, J.* "Orally bioavailable small-molecule inhibitor of transcription factor Stat3 regresses human breast and lung cancer xenografts." *P. N. A. S.* **2012**, *109*, 9623-9628. IF = 9.809.

30. Page, B. D. G., Khoury, H., Laister, R. C., Fletcher, S., Vellozo, M., Manzoli, A., Yue, P., Turkson, J., Minden, M. D.,* **Gunning**, **P**. **T**.* "Small Molecule STAT5-SH2 Domain Inhibitors Exhibit Potent Anti-leukemia Activity." *J. Med. Chem.* **2012**, *55,* 1047-1055. IF = 5.480.

29. Cumaraswamy, A., Todic, A., Resetca, D., Minden, M. D., **Gunning**, **P**. **T**.* "Inhibitors of Stat5 protein signalling." *MedChemComm*, **2012**, *3*, 22-27. IF = 2.626.

2011

28. Page, B. D. G., Fletcher, S., Li, Z., Zhang, X., Yue, P., Sharmeen, S., Datti, A., Wrana, J. L., Trudel, S., Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**.* "Identification of a Non-phosphorylated, Cell Permeable, Small Molecule Ligand for the Stat3 SH2 Domain." *Bioorg. Med. Chem. Lett.* **2011**, *21,* 5605-5609. (**front cover article**) IF = 2.447.

27. Lukkarila, J., da Silva, S., Ali, M., Shahani, V. M., Wei, X., Berman, J., Roughton, A., DhePhaganon, S., Schimmer, A. D., **Gunning**, **P**. **T**.* "Identification of NAE inhibitors exhibiting potent activity in Leukemia cells: Exploring the structural determinants of NAE Specificity." *ACS Med. Chem. Lett.* **2011**, *2,* 577-582. IF = *3.073*.

26. Avadisian, M., Fletcher, S., Lui, B., Zhao, W., Yue, P., Badali, D., Xu, W., Schimmer, A. D., Turkson, J., Gradinaru, C. C., **Gunning**, **P**. **T**.* "Artificially Induced Protein–Membrane Anchorage with Cholesterol-Based Recognition Agents as a New Therapeutic Concept." *Angewandte Intl. Ed.* **2011**, *50, 6248-6253* (**front cover article**) IF = 13.734.

25. Fletcher, S., Page, B. D. G., Zhang, X., Yue, P., Li, Z-H., Sharmeen, S., Singh,J., Zhao, W., Schimmer, A. D., Trudel, S., Turkson, J.,* **Gunning**, **P**. **T**.* "Antagonism of the Stat3-Stat3 protein dimer with salicylic acid based small molecules." *ChemMedChem.* **2011***, 6*, 1459-1470. IF = 3.046.

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8. Non-Refereed Publications

n/a

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67. Barbara Maurer, Harini Nivarthi, Bettina Wingelhofer, Michaela Prchal-Murphy, Doris Chen, Susanne Winkler, Olaf Merkel, Michaela Schlederer, Jana Prochazkova, Ana-Iris Schiefer, Elisabeth Gurnhofer, Maximilian Hofbauer, Ha Thi Thanh Pham, Birgit Hochgatterer, Eva Bauer, Gregor Hoermann, Andrea Hoelbl-Kovacic, Abbarna A. Cumaraswamy, Andrew M. Lewis, Johanna Eder, Melitta Kitzwoegerer, Xionan Han, Peter Valent, Dagmar Stoiber, Thomas Kolbe, Joanna I. Loizou, Florian Grebien, Lukas Kenner, Patrick T. Gunning, Robert

Kralovics, Veronika Sexl, Mathias Mueller, Thomas Rülicke, and Richard Moriggl "An activating Mutation in STAT5 is sufficient to drive Peripheral T-Cell Lymphoma." *BLOOD*, **2015** *submitted* MS ID#: BLOOD/2015/674630 IF = 10.452

66. Daniel P. Ball, Andrew M. Lewis, Declan Williams, Diana Resetca, Derek J. Wilson, **Patrick T. Gunning** "Exploring the Signal Transducer and Activator of Transcription 3 (STAT3) Inhibitor S3I-201's Alkylating Potential." *Oncotarget.* **2015** *submitted*. Paper #: 008988. IF = 6.63.

10. Papers presented at meetings and symposia.

2016

106. "Ufm1 mediated protein modification pathway as drug target in the human protozoan parasite *Leishmania donovani."* Gannavaram, S., Ismail, N., da Silva, S. R., Paiva, S-L., Bancerz, M., **Gunning**, **P**. **T**., Nakhasi, H. L. CTTDDR-2016 **2016** Lucknow, India

2015

105. 1202 "The Discovery of a Novel Inhibitory Mechanism for an Ubiquitin-like Activating Enzyme, UBA5." da Silva S. R., Paiva S-L., Bancerz, M., Geletu, M., Lewis, A. M., Chen, J., Cai, Y., Lukkarila, J. L., Dhe-Paganon, S., Li, H., **Gunning**, **P**. **T**. **2015** 98th Canadian Society for Chemistry conference, Ottawa

104. 1656 "Isoform Selective Inhibitors of the STAT5 Protein." Rana, R., Cummaraswamy, A. A., Lewis, A. M., Wingelhofer, B., Geletu, M., Morrigl, R., **Gunning**, **P**. **T**. 98th Canadian Society for Chemistry conference, Ottawa

103. 1646 "Elucidating the Mechanism of Activity for Historically Significant and Current STAT3 Inhibitors." Ball, D. P., Lewis, A. M., **Gunning**, **P**. **T**. **2015** 98th Canadian Society for Chemistry conference, Ottawa

102. 1624 "Designing Small Molecule Inhibitors of Protein Tyrosine Phosphatases." **Lewis**, **A**. **M**., Ball D. P., Collins, C., Shouksmith, A., **Gunning**, **P**. **T**. **2015** 98th Canadian Society for Chemistry conference, Ottawa

101. 1623 "The Selective Detection of Phosphorylated Proteins with the Use of Pyrene Based, turn on Fluorescent Sensors." Soor, H. S., Kraskouskaya, D., **Gunning**, **P**. **T**. 98th Canadian Society for Chemistry conference, Ottawa

100. 1617 "The Development of a Robust Assay for Quantification of Adenylating Enzyme Activity." **Qureshi**, **H**. **I**., Kraskouskaya, D., **Gunning**, **P**. **T**. **2015** 98th Canadian Society for Chemistry conference, Ottawa

99. Abstract 1615 "Optimization of Potent Small-molecule Inhibitors of STAT3 Proteins." Park, J., Lai, P. S., Rosa, D., Lewis, A. M., Geletu, M., **Gunning**, **P**. **T**. **2015** 98th Canadian Society for Chemistry conference, Ottawa

98. Abstract 1610 "Using a Peptidomimetic Strategy in Targeting the SUMO Activating Enzyme." Paiva, S. L., daSilva, S. R., **Gunning**, **P**. **T**. **2015** 98th Canadian Society for Chemistry conference, Ottawa

97. Abstract 1604 "Designing Novel, Selective Inhibitors for PTPs to Accelerate Nerve Regeneration Following Spinal Cord Injury." Collins, C. V., Lewis AM, Audic B, **Gunning**, **P**. **T**. **2015** 98th Canadian Society for Chemistry conference, Ottawa

96. Duodu, E., Kraskouskaya, D., Campbell, J., **Gunning**, **P**. **T**. "Selective detection of tyrosine-containing proximally phosphorylated motifs using an antenna-free Tb^{3+} luminescent sensor." Molecular Medicine Tri-Conference (TRI-CON **2015**). San Francisco, US.

95. Kraskouskaya, D. **Gunning**, **P**. **T**. "Development of ProxyPhos sensors." Molecular Tri-medicine conference, (TRI-CON **2015**), San Francisco, USA.

2014

94. Abstract P5-07-05: "Regulation of system Xc-by signal transducer and activator of transcription 3 and 5 in human breast cancer cells." Linher-Melville, K., Fazzari, J., **Gunning**, **P**. **T**., G Singh. Cancer Research 75 (9 Supplement), P5-07-05-P5-07-05 Thirty-Seventh Annual CTRC-AACR San Antonio Breast Cancer Symposium; December 9-13, **2014**; San Antonio, TX

93. Duodu, E., Vi, C., **Gunning**, **P**. **T**. "The Development of Terbium (III)- Zinc (II)-Based Agents for Sensing Phosphotyrosine-Containing Peptides and Proteins. 41st International Conference on Coordination Chemistry." **2014** (ICCC41). Singapore.

92. Kraskouskaya, D., **Gunning**, **P**. **T**. "A fluorescent dual emission sensor for the detection of proximal di- and poly-phosphorylated protein sites for application in solution and gel-based assays." 41st International Conference on Coordination Chemistry, **2014**, Singapore. Oral Presentation (July, 2014)

91. Paiva, S.L.; da Silva, S.R.; Lukkarila, J.L.; Xu, G.W.; Schimmer, A.D.; Gunning, P.T. (**2014**) The Development of Novel Small-Molecule Inhibitors of the Ubiquitin Activating Enzyme (UAE). *26th EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics.* Barcelona, Catalonia, Spain. International Conference (Poster)

90. 02249 "An excimer-based, turn-on fluorescent sensor for the selective detection of diphosphorylated proteins." Bancerz, M., Kraskouskaya, D., Harjeet, S. S., Gardiner, J. E., **Gunning**, **P**. **T**. 97th Canadian Chemistry Conference and Exhibition, Vancouver, June 1-5, **2014**

89. 01585 "Selective inhibition of the Syk Tyrosine Kinase through a site-specific photocontrolled tyrosine bioconjugation strategy." Ball, D. P., **Gunning**, **P**. **T**. 97th Canadian Chemistry Conference and Exhibition, Vancouver, June 1-5, **2014**

88. 01568 "Fluorescent based assay for the High-Throughput screening of STAT3 and STAT5 inhibitors." Todic, A., **Gunning**, **P**. **T**. 97th Canadian Chemistry Conference and Exhibition, Vancouver, June 1-5, **2014**

87. 01516 "The development of small molecule inhibitors of protein tyrosine phosphatase sigma." Lewis, A. M., Ball, D. P., Haftchenary, S., **Gunning**, **P**. **T**. 97th Canadian Chemistry Conference and Exhibition, Vancouver, June 1-5, **2014**

86. 00030 "Targeting UBA5 for use in combination therapies in cancer treatments." Paiva, S-L., da Silva, S. R., **Gunning**, **P**. **T**. 97th Canadian Chemistry Conference and Exhibition, Vancouver, June 1-5, **2014**

85. 00025 "Structure-based design of small molecule inhibitors for the Stat5 protein." Lewis, A. M., Geletu, M., Laister, R., Todic, A. A., Diaz, D. B., Brown, C. E., Minden, M., Gunning, P. T. 97th Canadian Chemistry Conference and Exhibition, Vancouver, June 1-5, **2014**

84. 01546 "Artificially Inducing Protein-membrane Anchorage via Lipidation." Fletcher, S., Liu, B., Gradinaru, C. C., Gunning, P. T. 97th Canadian Chemistry Conference and Exhibition, Vancouver, June 1-5, **2014**

83. Linher-Melville, J Fazzari, P Gunning, and G Singh, "Regulation of system Xc- by signal transducer and activator of transcription 3 and 5 in human breast cancer cells." **2014** The 37th Annual San Antonio Breast Cancer Symposium, San Antonio, Texas.

82. 282 "Membrane anchorage of Stat3 via artificial protein lipidation" Avadisian, M., Fletcher, S., Liu, B., Zhao, W., Turkson, J., Gradinaru, C. C., **Gunning**, **P**. **T**. European Journal of Cancer 50, 93 **2014** 26 EORTC – NCI – AACR Symposium on Molecular Targets and Cancer Therapeutics, Barcelona, Spain

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80. 285 "A nanomolar-potency small molecule inhibitor of the STAT5 protein." Cumaraswamy, A. A., Lewis, A. M., Geletu, M., Todic, A., Diaz, D. B., Cheng, X. R., **Gunning**, **P**. **T**. European Journal of Cancer 50, 94 **2014** 26 EORTC – NCI – AACR Symposium on Molecular Targets and Cancer Therapeutics, Barcelona, Spain

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76. Eiring, A. M., Kraft, I. L., Page, B. D. G., Anderson, D. J., Gu, Z., Khorashad, J. S., Pomicter, A. D., Reynolds, K. R., Zabriskie, M. S., Moriggl, R., **Gunning**, **P**. **T**.,* Deininger, M. W.* "STAT3 Inhibition Synergizes with BCR-ABL1 Inhibition to Overcome Kinase-Independent TKI Resistance in Chronic Myeloid Leukemia (CML)." 55th ASH Annual Meeting and Exposition, New Orleans, LA Dec 8th, **2013** Abstract 631 (oral).

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72. Yue, P., Haftchenary, S., **Gunning**, **P**. **T**., Turkson, J. "A novel small-molecule inhibitor of Stat3 induces antitumor cell effects in human glioma and breast cancer cells." AACR 104th Annual Meeting **2013**; Apr 6-10, 2013; Washington, DC. Abstract 3253

71. Kraskouskaya, D., Duodu, E., **Gunning**, **P**. **T**. "Exploring the structural and functional determinants of selective phosphopepti de recognition using bivalent Zn2+ coordination complexes." 96th CSC National Conference, Quebec City, 26/05/**2013**.

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69. Duodu, E., Kraskouskaya, D., **Gunning**, **P**. **T**. "The development of a Zn(II) based "tripodal' scaffold receptor for the recognition of di- phosphopeptides." 96th CSC National Conference, Quebec City, 26/05/**2013**.

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64. Avadisian, M., Fletcher, S., Liu, B., Zhao, W., Turkson, J., Gradinaru, C.C., **Gunning**, **P**. **T**. "Artificially inducing protein- membrane anchorage of oncogenic signalling proteins." 96th CSC National Conference, Quebec City, 26/05/**2013**.

63. D. P. Ball, S. Haftchenary, I. Aubry, M. Landry, V. M. Shahani, S. Fletcher, B. D. G. Page, A. O. Jouk, M. L. Tremblay, **P**. **T**. **Gunning**. "Identification of a potent salicylic acid-based inhibitor scaffold of tyrosine phosphatase PTP1B." 96th CSC National Conference, Quebec City, 26/05/**2013**.

62. P. S. Lai, C. Brown, A. Cumaraswamy, **P**. **T**. **Gunning**. "Synthesis of hetero-subsituted 1,4- benzodiazepine-2,5-diones." 96th CSC National Conference, Quebec City, 26/05/**2013**.

61. A.A.Cumaras wamy, D.Muench, C.Brown, B.D.G Page, R. Laister, M.D. Minden, H. Grimes and **P**.**T**. **Gunning**. "Design & development of small molecule inhibitors of Stat5 function." 96th CSC National Conference, Quebec City, 26/05/**2013**.

60. C. Brown, A. A. Cumaraswa my, R. Laister, S. Burger, B. D. G. Page, E. Muench, M. D. Minden, L. Grimes, **P**. **T**. **Gunning** "Design and Synthesis of Selective Stat5 Inhibitors." 96th CSC National Conference, Quebec City, 26/05/**2013**.

59. S. Haftchenary, A. Luchman, S. Dawson, B.D.G. Page, N. Grinshtein, A.J. Veloso, X.R. Cheng, D.R. Kaplan, K. Kerman, S. Weiss, **P**. **T**. **Gunning**. "Potent, selective and direct targeting of the STAT3 oncogene in brain cancer stem cells." 96th CSC National Conference, Quebec City, 26/05/**2013**.

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57. Paiva, S-L., daSilva, S., Lukarilla, J., Schimmer, A. D., **Gunning**, **P**. **T**.* "The Development of Novel Small-Molecule Inhibitors of the Ubiquitin Activating Enzyme (UAE)" 4th Ubiquitin Drug Discovery & Diagnostics Conference, Philidelphia, Poster # 84, July 23rd-25th, **2012**.

56. Drewry, J. A., **Gunning**, **P**. **T**.* "The development of functional mimetics of the Src homology 2 domain." Challenges in Organic Chemistry and Chemical Biology (ISACS7), Edinburgh University, UK. 12-15th June **2012**, P22.

55. Avadisian, M. A., Laister, R., Khoury, H., Minden, M. D., **Gunning**, **P**. **T**.* "Artificially inducing protein-membrane anchorage: a novel therapeutic modality." Challenges in Organic Chemistry and Chemical Biology (ISACS7), Edinburgh University, UK. 12-15th June **2012**, P22.

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53. Kraskouskaya, D., Drewry, J. A., Duodu, E., **Gunning**, **P**. **T**.* "Design, synthesis and evaluation of highly potent and selective phosphopeptide binding agents." Challenges in Organic Chemistry and Chemical Biology (ISACS7), Edinburgh University, UK. 12-15th June **2012**, P43.

52. Duodu, E., Drewry, J. A., **Gunning**, **P**. **T**.* "The development of selective chemosensors for recognition of oncogenic diphosphopeptides." Challenges in Organic Chemistry and Chemical Biology (ISACS7), Edinburgh University, UK. 12-15th June **2012**, P114.

51. Haftchenary, S., Dawson, S., Page, B. D. G., Shahani, V. M., Luchman, A., Weiss, S., **Gunning**, **P**. **T**.* "Salicylic Acid Mimetics and Prodrugs Targeting Trancriptionally Active STAT3 in Brain Cancer Cells." 95rd CSC meeting in Calgary, **2012**, Abstract-521 OR5.

50. Shahani, V. M., Ball, D. P., **Gunning**, **P**. **T**.* "Second Generation Purine Inhibitors of Stat3 Show Greater than 6-Fold Increased Activity of Previous Library." 95rd CSC meeting in Calgary, **2012**, Abstract-1061

49. Arpin, C. C., Page, B. D. G., Turkson, J., **Gunning**, **P**. **T**.* "Metabolic Optimization of Potent STAT3 Inhibitors for Improved Cancer Therapeutic Agents". 95th Canadian Chemistry Conference and Exhibition, Calgary, ON, **2012**.

48. Ball, D. P., Haftchenary, S., Aubry I., Page, B. D. G., Shahani, V. M., Tremblay, M., **Gunning**, **P**. **T**.* "Multivalent Salicylic Acid Based Small Molecule Inhibitors of Protein Tyrosine Phosphatases." 95rd CSC meeting in Calgary, **2012,** Abstract-1062

2011

47. Avadisian, M. A., Fletcher, S., Lui, B., Zhao, W., Yue, P., Turkson, J., Gradinaru, C., **Gunning**, **P**. **T**. "Artificially inducing protein-membrane anchorage: Introducing a new therapeutic modality." AACR Molecular Targets and Cancer Therapeutics Meeting, San Francisco, CA **2011**, Abstract B220.

46. Page, B. D. G., Atkinson, J., Wong, Y. L., Haftchenary, S., Spagnuolo, P. A., Kraft, I. L., O'Hare, T., Turkson, J., Deininger, M. W., Schimmer, A. D., **Gunning**, **P**. **T**. "Direct SH2 domain targeting inhibitors of Stat3: Potent

anticancer agents and mitigators of drug resistance." AACR Molecular Targets and Cancer Therapeutics Meeting, San Francisco, CA **2011**, Abstract A121.

45. Page, B. D. G., Zhang, X., Atkinson, J., Li, Z. H., Schimmer, A. D., Trudel, S., Turkson, **Gunning**, **P**. **T**. "Silencing Stat3 signalling in human cancers: Indentifying potent small molecule inhibitors of Stat3 function." AACR Molecular Targets and Cancer Therapeutics Meeting, San Francisco, CA **2011**, Abstract A125.

44. Croucher, D. A., Jimenez-Zepeda, V. H., Page, B. D. G., Li, Z. L., Wei, E., Turkson, J., **Gunning**, **P**. **T**., Trudel, S. "The potent Stat3/5 inhibitor, BP-1-102, demonstrates significant anti-tumor activity against Waldenstrom macroglobulinemia." AACR Molecular Targets and Cancer Therapeutics Meeting, San Francisco, CA **2011**, Abstract A201.

43. Cumaraswamy, A., **Gunning**, **P**. **T**. "Structure-based drug design of Stat5 inhibitors." AACR Molecular Targets and Cancer Therapeutics Meeting, San Francisco, CA **2011**, Abstract B224.

42. Lukkarila, J. L., da Silva, S. R., Ali, M., Shahani, V. M., Wei, X., Berman, J., Roughton, A., Dhe-Paganon, S., Schimmer, A. D., **Gunning**, **P**. **T**. "Identification of NAE inhibitors exhibiting potent activity in leukemia cells: Exploring the structural determinants of NAE Specificity." Ubiquitin Drug Discovery and Diagnostics **2011** Conference, Philadelphia, PA United States.

41. Haftchenary, S., Page, B. D. P., Schimmer, A. D., **Gunning**, **P**. **T**. "Salicyclic based inhibitors targeting transcriptionally active STAT3 in cancer cells." 94th CSC meeting in Montreal, **2011**, Abstract-00000378

40. Duodu, E., Drewry, J., **Gunning**, **P**. **T**. "The synthesis of a novel series of effective SH2 domain inhibitors." 94th CSC meeting in Montreal, **2011**, Abstract-00000515

39. Page, B. D. G., Fletcher, S., **Gunning**, **P**. **T**. "The story of BP-1-102: A potent, orally available Stat3 inhibitor for the treatment of human cancers." 94th CSC meeting in Montreal, **2011**, Abstract-00000376

38. Shahani, V. M., Ball, D. P., **Gunning**, **P**. **T**. "Decorating purine-based Stat3 inhibitors with drug-like functionalities to improve cell permeability and anti-cancer potency." 94th CSC meeting in Montreal, **2011**, Abstract-00000377

37. Cumaraswamy, A., **Gunning**, **P**. **T**. "Structure-based design for aberrant Stat5 proteins in Leukemia." 94th CSC meeting in Montreal, **2011**, Abstract-00000379

36. Drewry, J. A., Duodu, E. A., **Gunning**, **P**. **T**. "Selective SH2 domain proteomimetics as potent disruptors of SH2 domain-mediated cell signaling." 94th CSC meeting in Montreal, **2011**, Abstract-00000380

35. Avadisian, M., Fletcher, S., Liu, B., Badali, D., Gradinaru, C. C., **Gunning**, **P**. **T**. "Artificially inducing protein-membrane anchorage of Stat3 protein via membrane associative recognition groups." 94th CSC meeting in Montreal, **2011**, Abstract-00000381

34. da Silva, S. R., Lukkarila, J. L. L., **Gunning**, **P**. **T**. " Targeting Uba1 specificity through rationalized, iterative functionalization of an adenosine-based scaffold." 94th CSC meeting in Montreal, **2011**, Abstract-00000499

33. Page, B. D. G., Fletcher, S., **Gunning**, **P**. **T**. "Inhibitors of Stat5 as cancer therapeutic agents." 94th CSC meeting in Montreal, **2011**, Abstract-00000501

32. Ball, D., **Gunning**, **P**. **T**. "Development of potent and cell permeable 2,6,9-tri-substituted purine-based small molecule inhibitors of Stat3." 94th CSC meeting in Montreal, **2011**, Abstract-00000518

31. Kraskouskaya, D. **Gunning**, **P**. **T**. "Design and synthesis of biologically active SH2 domain mimetics as potential anti-cancer therapeutics." 94th CSC meeting in Montreal, **2011**, Abstract-00000519

30. Lukkarila, J. L. L., da Silva, S. R., **Gunning**, **P**. **T**. "Exploring the structural determinants of NAE specificity: potent inhibitor design leading to K562 Leukemia cell death." 94th CSC meeting in Montreal, **2011**, Abstract-00000562

29. Zhang, X., Page, B. D. G., Yue, P., Fletcher, S., Zhao, W., **Gunning**, **P**. **T**., Turkson, J. "A novel orally-bioavailable salicylic acid-based small molecular Stat3 inhibitor suppress growth of human breast tumor xenografts." *Proc. of the 102st Annual Meeting of the American Association for Cancer Research,* **2011**, Abstract-4512

2010

28. Avadisian, M. A., Fletcher, S. Lui, B., Yue, P., Turkson, J., Schimmer, A. D., Gradinaru, C., **Gunning**, **P**. **T**. "Blocking the Nuclear Translocation of Signal Transducer and Activator of Transcription 3 Protein via Membrane Anchorage." 93rd CSC meeting in Toronto, **2010**, Abstract-01065.

27. Drewry, J. A., Fletcher, S., Yue, P., Sharmeen, S., Musharak, D., Gradinaru, C. Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. "SH2 domain proteomimetics as potent disruptors of a clinically-relevant oncogenic protein-protein interaction." 93rd CSC meeting in Toronto, **2010**, Abstract 00289.

26. Page, B. D. G., Fletcher, S., Yue, P., Turkson, J., **Gunning**, **P**. **T**. "Small Molecule Inhibitors of Stat3 as Potent and Selective Anti-cancer Agents." 93rd CSC meeting in Toronto, 2010, Abstract-01130.

25. Haftchenary, S., Shahani, V. M., Lukkarila, J., **Gunning**, **P**. **T**. "2, 6, 9-hetero-trisubstituted purines inhibit STAT3-STAT3 dimerization." 93rd CSC meeting in Toronto, **2010**, Abstract-01072.

24. Shahani, V. M., Fletcher, S., Yue, P., Zhang, Z., Sharmeen, S., Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. "A peptidomimetic STAT3 inhibitor sensitizes human prostate cancer cells to Ivermectin treatment: a promising synergistic combination strategy." 93rd CSC meeting in Toronto, **2010**, Abstract-00290.

23. Drewry, J. A., Fletcher, S., Yue, P., Sharmeen, S., Musharak, D., Gradinaru, C. Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. SH2 domain proteomimetics as

potent disruptors of a clinically-relevant oncogenic protein-protein interaction. 93rd *CSC National Meeting*, **2010**, Toronto, ON, Canada – ORAL

22. Shahani, V. M., Fletcher, S., Yue, P., Zhang, Z., Sharmeen, S., Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. A peptidomimetic STAT3 inhibitor sensitizes human prostate cancer cells to Ivermectin treatment: a promising synergistic combination strategy. 93rd *CSC National Meeting*, **2010**, Toronto, ON, Canada. – ORAL

21. Jiménez-Zepeda, V., Page, B. D. G., Li, Z. H., Zeng, S., Wei, E., Leung-Hagesteijn, C., Turkson, J., **Gunning**, **P**. **T**., Trudel, S. "Studies of BP-1-102, novel direct small-molecule inhibitors of Stat3 demonstrate substantial anti-myeloma pre-clinical activity." ASH National Meeting in Orlando, **2010**, Abstract 135.

20. Haftchenary, S., Fletcher, S., Drewry, J. A., Turkson, J., **Gunning**, **P**. **T**. Design and synthesis of homo-dinuclear cyclen-based SH2 domain proteomimetics. 240th ACS National Meeting, **2010**, Boston, MA, USA, Abstract-MEDI 459.

19. Avadisian, M. A., Fletcher, S. Lui, B., Yue, P., Turkson, J., Schimmer, A. D., Gradinaru, C., **Gunning**, **P**. **T**. "Artificially Induced Protein-Membrane Anchorage with Cholesterol-based Recognition Agents: A New Therapeutic Modality." 240th ACS National Meeting, **2010**, Boston, MA, USA, Abstract-MEDI-57.

18. Drewry, J. A., Yue, P., Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. "Development of SH2 domain proteomimetics as potent disruptors of oncogenic Stat3:Stat3 dimerization." 240th ACS National Meeting, 2010, Boston, MA, USA, Abstract-MEDI-159.

17. Page, B. D. G., Fletcher, S., Yue, P., Sharmeen, S.,Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. Tetrapodal Stat3 inhibitors offer potent disruption of Stat3 in vitro and in whole cell assays. 240th *ACS National Meeting*, **2010**, Boston, MA, USA, Abstract-MEDI-155.

16. Shahani, V. M., Fletcher, S.,Yue, P., Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. "Utilizing a pharmacophore model for the development of potent small molecule inhibitors of STAT3 function." 240th ACS National Meeting, **2010**, Boston, MA, USA, Abstract-MEDI-173.

15. Liu, B., Badali, D., Avadisian, M., Fletcher, S., **Gunning**, **P**. **T**., Gradinaru, C. "Inhibition study of the oncogenic functionality of STAT3 at single molecule level." *Proc. SPIE* Photonics West, **2010**, San Francisco, CA, USA, Paper 7576-48.

14. Fletcher, S., Page, B. D. G., Yue, P., Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. Developing STAT3 protein inhibitors as adjuvant therapeutics: Promising synergistic effects in human cancers. *101st AACR Meeting*, **2010**, Washington, DC Abstract-3684.

2009

13. Liu, B., Badali, D., Avadisian, M., Fletcher, S., **Gunning**, **P**. **T**., Gradinaru, C. "Single-molecule fluorescence study of the inhibition of the oncogenic functionality of STAT3." *Proc. SPIE* Photonics North, **2009**, USA, Vol. 7386 Abstract-738605.

12. Page, B. D. G., Fletcher, S., Yue, P., Sharmeen, S., Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. "Salicylic acid-based small molecule inhibitors of Stat3 show potent and selective activity in a variety of human cancer cell lines." AACR meeting in Boston, **2009**, Abstract C40

11. Lui, B., Fletcher, S., Avadisian, M., **Gunning**, **P**. **T**., Gradinaru, C. Inhibition of Oncogenic functionality of STAT3 Protein by Membrane Anchoring. *Bull. Amer. Phys. Soc*, **2009**, *54*, Paper K1:00265. Pittsburgh, PA, USA.

10. Drewry, J. A., Fletcher, S., Peibin, Y., Sharmeen, S., Schimmer, A. D., Turkson, J., **Gunning, P. T.** Disruption of Stat3 Dimer Using Rationally Designed Homo-dinuclear Cu(II) Complexes. *Canadian Society of Chemistry Annual Meeting*, **2009**, poster presentation. CHEM BIOL - 1006

9. Page, B. G., Fletcher, S., Peibin, Y., Sharmeen, S., Schimmer, A. D., Turkson, J., **Gunning**, **P**. **T**. Small molecule inhibitors of Stat3: disrupting protein–protein interactions. *Canadian Society of Chemistry Annual Meeting*, **2009**, Oral Presentation. CHEM BIOL - 175

8. Shahani, V. M., Fletcher, S., Peibin, Y., Sharmeen, S., Turkson, J., **Gunning**, **P**. **T**. "Design and Synthesis of Highly Effective Peptidomimetic Inhibitors of Stat3." *Canadian Society of Chemistry Annual Meeting*, **2009**, Oral Presentation. CHEM BIOL

2008

7. *235th American Chemical Society National Meeting*, Poster Presentation - Fletcher, S., Turkson, J., **Gunning**, **P**. **T**. Small Molecule Inhibition of Stat3 Signaling. **2008**, MEDI-267. New Orleans, USA

Post-doctoral and PhD.

6. Gunning, **P**. **T**., Benniston, A. C., Peacock, R. D. "Mimicking Protein Environments in Bioinorganic Models." RSC Symposium on Inorganic Chemistry, Dalton Transactions Meeting, poster presentation, **2004**, (Edinburgh University, UK).

5. Gunning, **P**. **T**., Benniston, A. C., Peacock, R. D. Creating shielded metal ion reaction centers. RSC Poster presentation at the UK Macrocyclic & Supramolecular, **2004** (Sheffield University, UK).

4. Gunning, P. **T**., Benniston, A. C., Peacock, R. D. Creating shielded metal ion reaction centers. RSC Poster presentation at the UK Macrocyclic & Supramolecular, **2003** (University of Newcastle, UK).

3. Gunning, **P**. **T**., Benniston, A. C., Peacock, R. D. Creating shielded metal ion reaction centers. *Abstracts of papers of the American Chemical Society*, **2003**, 485-

BIOINORG. Poster presentation at the 226th ACS National Meeting, **2003**, New York, Division of Bioinorganic Chemistry, abstract no 485.

2. Gunning, **P**. **T**., Benniston, A. C., Peacock, R. D. Potent anion recognition: ditiopic polyazamacrocylic-crown ether hybrids. Poster presentation at the UK Macrocyclic & Supramolecular, **2003** (University of York, UK).

1. Gunning, **P**. **T**., Benniston, A. C., Peacock, R. D. Creating shielded metal ion reaction centers. Poster presentation at the UK Macrocyclic & Supramolecular, **2002** (University of Birmingham, UK).

11. Invited Lectures

83. TedX Talk Mississauga, Living Arts Centre, Mississauga, ON, Canada (**28/11/2015**), invited by Rhyan Ahmed, Executive Director, TEDxMississauga 2015

82. Oncology Grand Rounds, Western University, London, ON, Canada (**17/11/2015**) invited by Prof Len Luyt

81. President's Circle U of T leadership donor society (02/11/2015), Earth Sciences Centre, University of Toronto, Invited by Prof. Meric Getler

80. Ludwig Boltzmann Institute Cancer Research, LBI-CR ANNUAL MEETING November 8 – 11, **2015** Invited by Prof. Richard Moriggl

79. Mississauga Golf Club Probus Society lecture **(15/08/2015)**, invited by Claude Lewis

78. 98th Canadian Society for Chemistry National conference, Invited guest lecture, Ottawa, by John Pezacki (**17/6/2015**)

77. Keynote speaker at the 'Someday is today' event held by the LLSC, Novotel Hotel, North York (**6/6/2015**) Invited by Laila Ali.

76. Steven Wilson High School, Invited lecture to Grade 12 students, Invited by Karen Kim (**24/04/2015**)

75. Keynote speaker at the Southern Ontario Undergraduate Chemistry Conference, University of Toronto Mississauga, Invited by undergraduate student committee (**28/03/2015)**

74. Niagara Health Systems, Guest speaker, event held by LLSC, Niagara (**21/03/2015)**.

73. Harvard University, Dana-Farber Institute, Seminars in Oncology, Invited by Prof. David Frank (**10/02/2015**)

72. Master's of Biotech guest lecture, UTM, ON, Invited guest lecture by Prof Leigh Rievers (**06/01/2015**)

71. RSC Chemical Biology Probe Symposium, Peking University, Department of Chemistry and Engineering, Ontario, ON, Invited by Prof Chen. (**06/12/2014**)

70. Canadian Breast Cancer Foundation, Cook for the Cure Event, Key Note speaker, Exhibition Center, Toronto, (**29/11, 2014**)

69. University of Montreal, Department of Chemistry, Montreal, QC, Invited by Prof. Shaun Collins (**19/11/2014**)

68. Brain Tumour Foundation of Canada Information day, London, Ontario, Invited by Susan Ruypers (**04/10/2014**)

67. Ryerson University, Department of Chemistry, Invited by Prof. Bryan Koivisto (**02/10/2014**)

66. CBCF Research talk at Kruger Products Head Office, Mississauga, ON. Invited by Carly Schur (Senior Manager, Corporate Programs) (**12/09/2014**)

65. UNICAMP, Department of Chemistry, Campinos, Brazil, Invited by conference organizing committee (**22/08/2014**).

64. Ludwig Boltzmann Institute, Vienna, Austria, Invited by Prof. Richard Moriggl (**10/07/2014)**

63. Canadian Breast Cancer Foundation Volunteer's Retreat, George Brown College, Toronto, Canada (**26/06/2014**) Invited by Brian Bobechko, Senior Director, National Grants and Partnerships.

62. Spring Reunion UTM alumni, Health Sciences Complex, UTM, Invited by Office of advancement, Mississauga, Canada (**31/05/2014**)

61. Ontario Science Center, Toronto, ON, Invited by Chris Markwell (**22/05/2014)**

60. School of Pharmacy, University of Waterloo, Kitchener, Canada (**21/05/2014**), Invited by Prof. Jonathan Blay.

59. Canadian Breast Cancer Foundation Research Panel, Toronto, Canada (**06/04/2014**) Invited by Deanna Slapack

58. Ontario Biology Day, University of Toronto Mississauga, Canada (**22/03/2014**) Invited by Prof. Fiona Rawle

57. Applewood Probus Club, Port Credit, Mississauga, Canada (**13/02/2014**), Invited by Robert Weese

56. Third Age Learning 2014 Winter Series, Burlington, Canada (**27/02/2014**), Invited by Barbara Fischer.

55. Canadian Perspectives Lecture Series at St. George Campus, Toronto, Canada (**25/11/2013**), Invited by Melissa Heide, Alumni Office, U of Toronto.

54. 16th Annual Chemistry and Biochemistry Graduate Research Conference, Concordia University (**22/11/2013**) – Plenary Speaker

53. University of Toronto Alumni Reunion, Montreal, Canada (**21/11/2013**)

52. McMaster University, Department of Biochemistry, Hamilton, Canada (**12/11/2013**) – invited speaker Prof. Eric Brown.

51. 9th AFMC International Medicinal Chemistry Symposium (AIMECS 2013) (**17/10/2013**), Invited by Dr. Natalia Ortuzar (Editor of ChemMedChem)

50. Neuroscience Insight Symposium, Toronto, Canada (**04/10/2013**) – Key Note speaker

49. University of Dundee, College of Life Sciences (again), Dundee, (**17/10/2013**) – invited speaker

48. Imperial College London, Department of Chemistry, London, UK (**12/09/2013**) – plenary speaker

47. PPI-Net Young Researchers Meeting, University of Leeds, UK (**10/09/2013**) – plenary speaker

46. University of Dundee, College of Life Sciences, Dundee, (**19/07/2013**) – invited speaker

45. All Staff Meeting, Ontario Institute for Cancer Research, Toronto, (**19/06/2013**) – invited speaker

44. CSC Annual Meeting, Quebec City, QC, Canada (**05/2013**) – invited speaker

43. ACS Meeting, New Orleans, LA, USA (**04/2013**) – invited speaker

42. Purdue University, Dept of Medicinal Chemistry and Molecular Pharmacology, West Lafayette, IN, USA – **11/2011** (Prof. Laurie Parker) - invited

41. Huntsman Cancer Institute, Salt Lake City, UT, USA (**05/03/2013**)

40. University of Toronto at Mississauga, Department of Biology, ON, Canada (**08/02/2013**)

39. Concordia University, Department of Chemistry, QC, Canada (**05/10/2012**)

38. York University, Department of Chemistry, ON, Canada (**13/09/2012**)

37. Oxford University, Department of Chemistry, UK – Prof. Andrew Wilson (**25/06/2012**)

36. CSC Calgary National Meeting, Calgary, AA – Prof. Jeremy Wulff (**26/05/2012**),

35. Astrazeneca, Medicinal Chemistry Group, Boston, MA, USA, Invited by Dr. Jeff Varnes (**19/01/2012**)

34. University of Toronto Scarbourgh, Scarbourgh, ON Canada –(**27/09/2012**) (Invited by Prof. Bernie Kraatz)

33. Queen's University, Department of Chemistry, Belfast, Northern Ireland, UK – **23/02/2011** – (Invited by Prof. Mark Muldoon)

32. Georg-Speyer-Haus, 'Cytokine receptors and their Stat mediated mechanisms of action.' Frankfurt, Germany – **21/10/2011** – (Invited by Prof. Berdt Groner).

31. Queen's University, Department of Biochemistry, Kingston, ON Canada – **18/10/2011** – (Invited by Prof. Peter Greer)

30. Centre for Probe Development and Commercialization, Hamilton, ON, Canada – **12/09/2011** (Invited by Dr. Travis Besanger)

29. Ohio University, Department of Chemistry, Columbus, Ohio, USA – **19/09/2011** (Invited by Prof. Eric Masson)

28. Bryan Jones Lecture, University of Toronto, Department of Chemistry, Toronto, Ontario, Canada **20/05/2011** (invited, Dr. Bryan Jones)

27. Boehringer Ingelheim Canada, Laval, QC, Canada – **05/05/2011** (invited by Dr. Paul Edwards)

26. University of Glasgow, School of Medicine, Glasgow, UK – **19/04/2011** (invited by Prof. Anna Dominiczak)

25. "Student Choice Winter Seminar Speaker" Wayne State University, Department of Pharmaceutical Sciences, MI, USA (Invited by Prof Steve Firestine)

24. University of Western Ontario, Department of Chemistry, Ontario, Canada – **09/03/2010** (invited by Prof. Robert Hudson)

23. University Lecture Series at School of Continuing Studies, University of Toronto, Oakville, Canada – **02/03/2011** (invited by Bill Zaget)

22. McMaster University, Department of Chemistry, Hamilton, ON, Canada – **17/02/2010** (invited by Prof. J. McNulty)

21. University of Colorado at Boulder, Dept of Chemistry, CO, Canada – **17/1/2011** (invited by Dr. Hang Yin)

20. University of Glasgow Young Alumnus of the Year, University of Glasgow, Glasgow, UK – **03/12/2010**

19. 1st International *Conference on Molecular Recognition*, Crete, Greece – **06/2010** (declined)

18. Ontario Institute of Cancer Research, Medicinal Chemistry Division, Toronto, Canada – **14/07/2009** (invited, Dr. Rima Al-awar)

17. 2010 CSC Meeting, Biological/Medicinal Symposia, Toronto, ON, Canada – **31/05/2010** (invited, Dr. Methvin Issac)

16. University of Glasgow, School of Chemistry, Glasgow, UK – **27/05/2010** (Invited by Prof. R. Peacock)

15. University of Maryland, School of Pharmacy, Baltimore, USA – **21/04/2010** (Hosted by Prof. S. Fletcher)

14. University of Newcastle, Department of Natural Sciences, UK – **26/02/2010** (Prof. A Harriman)

13. Ontario Institute of Cancer Research, Toronto, Canada – **16/12/2009** (Invited by Dr. David Koeler)

12. Biodiscovery Toronto Showcase, MaRS Center, Toronto, Canada **11/11/2009** (Hosted by Dr. S DeGrandis)

11. Leukemia and Lymphoma Society of Canada, Toronto, 2009 Grants and Awards Luncheon - guest talk, Canada – **10/2009**

10. Invited to The Niagara Better World Film Festival to introduce noted Canadian journalist Dr. David Suzuki's film, "Biomimicry: Learning from Nature, Part 1" from the CBC series "The Nature of Things with David Suzuki." **2010**

9. Invited to present in Belfast, Northern Ireland "Rational design of small molecule disruptors of Stat3:Stat3 oncogenic protein-protein interactions." Almac Sciences (industry). **2009** Hosted by Dr. Mark Bell

8. Invited to present in 01/2009 at the Princess Margaret Hospital, by the University Health Network of Toronto. "Rational design of small molecule disruptors of Stat3:Stat3 oncogenic protein-protein interactions." Hosted by Prof. Mark Minden.

7. Leukemia and Lymphoma Society of Canada, Toronto, **2008** Grants and Awards Luncheon - guest talk and prize winner.

6. University of Toronto, Department of Chemical and Physical Sciences - Invited guest speaker. **2007** "Small Molecule Manipulation of Cytokine Signaling Proteins: Developing Novel Molecular Therapeutics."

5. University of Strathclyde, U.K., Department of Medicinal Chemistry and Pharmacology **2007** Invited guest speaker. "Molecular Medicines: Small Molecule Modulators of Cancer."

4. H. Lee. Moffitt Cancer Center and Research Institute, Department of Interdisciplinary Oncology, **2007** - Invited guest speaker. "Molecular Recognition: Design and Synthesis of Small Molecule Modulators of Cancer."

3. University of Ottawa, Department of Chemistry **2006** Invited guest speaker. "Molecular Medicines: Small Molecule Modulators of Cancer."

2. Royal Society of Chemistry, Macrocyclic and Supramolecular Chemistry National Meeting, **2005** University of Newcastle, Department of Natural Sciences Invited guest speaker. "Modular Synthesis of Artificial Receptors with High Affinity for Phosphates."

1. Royal Society of Chemistry, Prof. R. D. Peacock Retirement Symposium, **2004** University of Glasgow, Department of Chemistry - Invited guest speaker. "Modular Synthesis of Artificial Receptors with High Affinity for Phosphates."

C. Theses supervised

Undergraduate Students:

1. Jardeepi Singh (2007-2008), CHM489H5Y
"Developing small molecule inhibitors of the Stat3-SH2 domain."

2. Vijay Shahani (2008, Summer), NSERC undergraduate research summer award
"A chimeric peptidomimetic approach to disrupting Stat3 protein–protein interactions"

3. Diana Luu (2008, Summer), CHM489H5Y
"A chimeric peptidomimetic approach to disrupting Stat3 protein–protein interactions"

4. Maxim Progozhin (2008, Summer), CHM485H5Y
"Proteomimetic Design of the Suppressor of Cytokine Signaling-1 (SOCS-1) Inhibitors."

5. Miriam Avidisian (2008-2009), CHM489H5Y
"Induced Anchorage of Oncogenic Proteins: Prenylation of Recognition Agents to suppress nuclear translocation."

6. Haider Hassan (2008-2009), CHM489H5Y
"Inhibition of oncogenic Stat3:Stat3 protein dimerization via homo-dimetallic bis-di-2-picolylamine architectures."

7. Xavier Wong (2008-2009), CHM489H5Y
"Targeting Myc as a novel approach for cancer therapy."

8. Monica Grembowicz (2009-2010), CHM489H5Y
"Developing inhibitors of Myc protein."

9. Christina Nona (2010, Summer), NSERC undergraduate research summer award "Developing purine-based inhibitors of Stat3 protein."

10. Humza Qureshi (2010-2011), CHM489H5Y
"Developing protein-membrane anchors targeting Stat3"

11. Dyziana Kraskouskaya (2010-2011), CHM485H5Y
"Developing SH2 domain proteomimetics."

12. Daniel Ball (2010-2011), CHM489H5Y
"Developing a Stat3 purine-based pharmacophore model."

13. Diana Resetca (2010-2011), CHM485H5Y
"Development of STAT5 inhibitors Literature Review."

14. Allan Ramos (2010-2011), CHM489H5Y
"Purine-based inhibitors of Stat3 protein."

15. Sean Dawson (2010-2011), CHM489H5Y
"Developing Stat3 drugs for targeting brain cancers."

16. Robert Colagouri (2011, Summer), NSERC undergraduate research summer award
"Improving the PK properties of Stat3 inhibitor BP-1-102."

17. Andrianna Jouk (2012-2013), CHM489H5Y
"Developing phosphatase PTP1B inhibitors."

18. Eva Fan (2012, Summer), NSERC undergraduate research summer award
"Developing SH2 domain mimetics"

19. James Eaton (2012-2013), University of Cardiff Honours student exchange program.
"Developing SH2 domain mimetics."

20. Harris Qureshi (2012-2013), CHM489H5Y
"Developing UAE selective inhibitors."

21. Stephen Mac (2012-2013), CHM489H5Y
"Developing small molecule Stat3 inhibitors."

22. Jordan Rebelo, (2012-2013), University of Cardiff Honours student exchange program.
"Developing excimer forming compounds."

23. Samar Nasir (2013-2014), CHM489H5Y
"A chimeric peptidomimetic approach to disrupting Stat3 protein–protein interactions"

24. Harjeet Soor (2013-2014), CHM489H5Y
"Developing excimer forming compounds."

25. Ji Sung Park (2013-2014), CHM485H5Y
"Developing inhibitors of Stat5 protein"

26. Yassin Tasabehji (2013-2014), CHM489H5Y
"Developing UAE selective inhibitors."

27. Vaibhavi Solanki (2014-2015), CHM489H5Y
"Developing UAE selective inhibitors."

28. Amandeep Taank (2014-2015), CHM489H5Y
"Developing Stat3 inhibitors"

29. Anika Imam (2014-2015), CHM485H5Y
"Developing UAE selective inhibitors."

30. Tom Ellis (2015-2016), University of Cardiff Honours student exchange program.
"Developing excimer forming compounds."

31. Beth Seccombe (2015-2016), University of Cardiff Honours student exchange program.
"Developing excimer forming compounds."

32. Alex Rigby (2015-2016), University of Cardiff Honours student exchange program.
"Developing Stat3 small molecule inhibitors."

33. Yassir Raouf (2015-2016), CHM485H5Y
"Developing ROS1 selective inhibitors."

34. David Hrovat (2015-2016), CHM485H5Y
"Developing UBA5 selective inhibitors."

35. Shan Shukla (2015-2016), CHM485H5Y
"Developing radiolabeled STAT5 inhibitors."

36. Diana Sina (2015-2016), CHM485H5Y
"Developing UBA5 selective inhibitors."

37. Gurjot Singh (2015-2016), CHM485H5Y
"Developing STAT5 selective inhibitors."

38. Bronte Mulcair Evans (2015-2016), CHM485H5Y
"Developing excimer forming compounds."

39. Mariya Bogatchenko (2015-2016), CHM485H5Y
"Developing Stat3 small molecule inhibitors."

40. Aaron Cabral (2015-2016), CHM485H5Y
"Developing excimer forming compounds."

Masters Students:

1. Jose Mendez Campos (Sept, 2015-present)
"Developing excimer based turn-on fluorescent sensors."

2. Rahul Rana (May, 2014 – December, 2015)
"Developing ROS1 inhibitors."

3. Harris Qureshi (May, 2014 – Sept, 2015)
"Targetting human ubiquitin activating enzyme UBE1 with rationally designed copper-based inhibitors and the application of a fluorescent chemosensor to the development of an assay for a adenylating enzyme activity."

4. Andriana Jouk (May, 2013 – Sept, 2014)
"Targeting clinically viable protein tyrosine phosphatases with rationally designed, small molecule inhibitors and artificially induced protein-membrane anchors."

5. Daniel Bouchard (May, 2013 – Feb, 2015)
"Application of a novel di-substituted 1,4-benzodiazepine 2,5-dione library for the stabilization of p53 through inhibition of HDM2."

6. Carla Evelyn Brown (Sep, 2012 – Sept, 2013)
" Design and synthesis of new scaffolds for Stat5 inhibition."

7. Mylene Morin (Sept, 2012 – April, 2013) - 1 year MSc placement from EPFL, Switzerland
"Developing SMAC protein-membrane anchors."

8. Damia BenChambane (April, 2012 – Dec, 2012) - Master program "Frontier in Chemistry" at Paris Descartes University, France
"Developing metabolically resistant Stat3 inhibitors."

9. Arnaud Peramo (April, 2014 – Dec, 2014) - Master program "Frontier in Chemistry" at Paris Descartes University, France
"Developing metal-based UBA5 inhibitors."

10. Benoit Audic (2014-2015) - 6 month MSc placement from University of Nantes, Faculty of Science and Technology, France
"Developing UAE inhibitors."

11. Niek Van der Zouwen (June, 2015 – Dec, 2015) – Master program at University of Utrecht, Utrecht, Netherlands
"Developing excimer forming compounds."

Doctoral Students:

1. Joel A. Drewy, (Jan, 2007 – Jan, 2012)
"Inhibiting oncogenic Stat3 protein complexes with SH2-domain proteo-mimetics."

2. Brent D. G. Page (Sept, 2008 – June, 2013)
"Small molecule Inhibitors of STAT3 protein as therapeutic agents."

3. Vijay M. Shahani (Sept, 2008 –Sept, 2013)
"An exploration into the molecular recognition of STAT3 protein via rationally designed small molecule binders."

4. Miriam Avadisian, (Sept, 2009 – Dec, 2014)

"Artificial Lipidation as a Novel Molecular Approach to Inhibiting."

5. Sina Haftchenary (Sept, 2009 – Sept, 2014)
"Targeting Clinically Viable Protein-Protein Interactions via Rationally Designed Small Molecules."

6. Anna Cumaraswamy (Sept, 2010 – Mar, 2015)
"Targeting transcription factors upregulated in Acute Myeloid Leukemia."

7. Eugenia Duodu (May 2011 – Sept, 2015)
"Selective Recognition and Detection of phosphorylation motifs."

8. Dyziana Kraskouskaya (May, 2011 – Aug, 2015)
"Development of metal-based chemosensors for the selective detection of phosphopeptide and phosphoprotein motifs."

9. Sara da Silva (May, 2011 – Jan, 2016) - *thesis defense date set.*
"Targeted Inhibition of the E1 Activating Enzymes."

10. Daniel Ball (Sept, 2012 – present)
"Exploring targeted covalent modification as a strategy for developing novel cancer drugs."

11. Stacey-Lynn Pavia (Sept, 2012 – present)
"Developing inhibitors of the E1's for treatment of Leukemia."

12. Ji Sung Park (May, 2014 – present)
"Developing Stat5 SH2 domain inhibitors."

13. Jay Bassan (Sept, 2015 – present)
"Developing Stat3-targeting covalent warheads."

14. Gary Tin (Sept, 2015 – present)
"Developing Stat5 SH2 domain inhibitors."

Postdoctoral Fellows:

1. Steven Fletcher (Sept, 2007 – Sept, 2007)
"Disrupting protein – protein interactions, artificial enzymatic reaction centers, hetero-tri-substituted purines, artificial prenylation."

2. Julie L. Lukkarila (May, 2010 – Sept, 2012)
"Developing UBA1 inhibitors for treatment of Leukemia."

3. Carolynn Chin-Arpin (Dec, 2011 – Sept, 2013)
"Developing Stat3 SH2 domain inhibitors."

4. Sunny Li (Dec, 2011 – Sept, 2013)
"Developing Stat3 SH2 domain inhibitors."

5. Matthew Bancerz (Oct, 2012 – Dec, 2014)
"Developing UBA1 inhibitors for treatment of Leukemia."

6. Ahmed Ali (May, 2013 – Dec 2014)
"Developing protein-membrane anchorage."

7. Andrew M. Lewis (Nov, 2012 – present)
"Developing Stat5 SH2 domain inhibitors."

8. David Rosa (March, 2013 – present)
"Developing Stat3 SH2 domain inhibitors

9. Mulu Geletu (May, 2013 – present)
"Evaluating in tumour cells, Stat3/5 inhibitors)

10. Rodolfo Gomez (May, 2014 – present)
"Developing radiolabeled pharmaceuticals targeting the Stat3 SH2 domain."

11. Andrew Shouksmith (January 2015 – present)
"Developing Stat5 SH2 domain inhibitors."

12. Mustafazur Masumbder (Jan, 2015 – Aug, 2015)
"Expressing Stat3/5 mutants."

13. Angelika Berger (Jan, 2016 – present)
"Delineating Stat5 inhibitor function in cells."