

# College of Pharmacy and Nutrition

Proud of Our Tradition and Home of Research and Practice Innovation

# **Dean's Newsletter**

Issue 17, July 2017

The Dean's Newsletter is published every second month and provides updates on academics, research, events, and other items of interest. Join us in celebrating our achievements by submitting your updates to <u>kieran.kobitz@usask.ca</u>.

# **TOP STORIES**

## In Memorium: Dr. Adil J. Nazarali

In May we honoured the memory of **Dr. Adil J. Nazarali**, who passed away on April 27, 2017. A tribute was posted to the college website to recognize the invaluable contributions he made to the University of Saskatchewan community. <u>Read more.</u>

#### **Dean's Staff Award**

Congratulations to **Sandy Knowles**, Executive Assistant to the Dean, who is the first recipient of the College of Pharmacy and Nutrition Dean's Staff Award for Commitment and Excellence. The award recognizes those who demonstrate behaviours in the workplace which reflect institutional values, or provide exemplary service toward fulfilling the college mission. <u>Read more</u>.

#### **New Bursary**

Thank you to **Colleen Howard (BSP 1972)** for her generous gift to the College of Pharmacy and Nutrition. The Colleen Howard Humanitarian Bursary will provide an award to third and fourth year pharmacy students with an interest in humanitarian work. <u>Read more.</u>

#### Pharmacy Accreditation

The Canadian Council for Accreditation of Pharmacy Program has provided notification of our pharmacy program accreditation status. The Bachelor of Science in Pharmacy program has been awarded accreditation for the four year term 2017-2021, and the Doctor of Pharmacy program has been awarded provisional accreditation for the same four year term.











# **MORE COLLEGE NEWS**

#### Convocation

The convocation ceremony for the College of Pharmacy Nutrition was held on Thursday, June 8, at 9:00 am at TCU Place. The University conferred 88 pharmacy and 25 nutrition undergraduate degrees during the ceremony. Detailed information on the graduate degrees awarded at the ceremony can be found in the Research and Graduate Studies – Trainee Success section of this newsletter.

Congratulations to **Kirsten Edmunds** and **Taletha Bennett** who were recognized as the most distinguished graduates in pharmacy and nutrition earlier this month at convocation.



Kirsten received the Robert Martin Prize, which is given in honour of the late Robert Martin, a pioneer pharmacist in western Canada and the first Registrar of both the North West Territories Pharmaceutical Association and the Saskatchewan Pharmaceutical Association.

Taletha received the Rutter Medal, which is given in honour and memory of Professor Emeritus Ethel Rutter. In 1929, Rutter was named Head of the School of Household Science, and served until her retirement in 1940.

Thank you to the Saskatchewan College of Pharmacy Professionals for hosting their regular luncheon after the ceremony. At the luncheon, the following awards were presented:

- SCPP Gold Medal Kirsten Edmunds
- The Orest Buchko Hospital Pharmacy Award Heather Hodgson
- The Class of '56 Memorial Scholarship Caitlin McGrath
- The Class of 1959 Pharmacy Award Steven Kary
- The Mark C. Fallon Book Prize Meagan Rieger
- The Natural Medicines Comprehensive Database Recognition Award Jesse Kapacila

Awards were also presented to the graduating nutrition students:

- Ruth Gerrand Prize Willow Landen
- Hannon Travel Scholarships Carmen Gorlick, Sophia Khan, Tenielle Koob, and Shandelle Stroeder

Pharmacy and Nutrition both held graduation banquets at TCU Place in the evening following convocation. Students took the opportunity to celebrate four years of accomplishments and wish each other well in the future.

#### Congratulations to all of our new alumni!





# **MORE COLLEGE NEWS**

#### **Dietitians of Canada Conference**

Nineteen nutrition students attended the 2017 Dietitians of Canada Conference in St. John's, Newfoundland and Labrador. The students earned their way to the conference by fundraising throughout the academic year to pay for their travel and accommodations.



#### IN THE MEDIA

Courtney Quiring was interviewed about natural health products on CBC Radio Blue Sky on Monday, May 10.

The **U of S AAPS Student Chapter** was featured in the June 2017 American Association of Pharmaceutical Sciences NewsMagazine. <u>Read more.</u>

**Dr. Hector Caruncho** was mentioned in a Friday, June 2, Saskatoon StarPhoenix article about a new type of antidepressant being developed at the U of S. <u>Read more.</u>

**Dr. Kate Dadachova** was featured in a Monday, June 12, article on the U of S News website. She currently has two research projects on fungi-produced melanin, which are funded through the Defense Threat Reduction Agency. <u>Read more.</u>

**Dr. Kishor Wasan** was mentioned in a Monday, June 12, new release on the Yahoo Finance website about iCo Therapeutics' oral amphotericin study. <u>Read more.</u>

**Dr. Dadachova** was featured in an article on the Government of Saskatchewan website about new smart cancer drugs being developed at the U of S. <u>Read more.</u>





Health Quality Council recently posted an article on their website about two multi-province collaborations on multiple sclerosis, which include **Dr. Charity Evans** as lead on the Saskatchewan portion of the studies. <u>Read more.</u>





# FACULTY AND STAFF NEWS

Congratulations to **Dr. Gordon Zello** for receiving the 2017 University of Saskatchewan Long Service Award. The Long Service Awards exist to honor and recognize staff members who have demonstrated excellence in service to the University of Saskatchewan for 25 years.

**Dr. Jaris Swidrovich** presented a seminar for PharmD students at the University of Alberta on Indigenous History, Health, Cultural Safety and Reconciliation in Pharmacy Practice on Friday, March 12.

Congratulations to **Dr. Jaris Swidrovich** who was elected to the board of directors for the Saskatoon Community Clinic on Thursday, June 1.

**Kieran Kobitz**, Communications and Alumni Relations Specialist, was appointed Vice President of the Saskatchewan Professional Marketing Association at the organization's annual general meeting on Tuesday, June 13.

## **ALUMNI NEWS**

**Shelley Case (BScHEc 1980)** was on Global Regina Morning News on Tuesday, May 2, to talk about options for a gluten-free diet. Watch the video.

**Betty Ann Deobald (BScHEc 1973)** wrote an article in The Western Producer reflecting on the history of home economics. **Read more.** 

Congratulations to the following alumni who received awards during the Pharmacy Association of Saskatchewan Conference weekend May 5-7 in Saskatoon.

Saskatchewan College Pharmacy Professionals Awards Banquet

- Honourary Life Member Darryl W. Leshko (BSP 1975)
- Presidential Citation Recipient Kenneth Galloway (BSP 1952)
- SCPP Staff Recognition Ray Joubert (BSP 1974) for 40 years of service.

Pharmacy Association of Saskatchewan Awards

- Pharmacist of the Year Brent Jensen (BSP 1988)
- Award of Merit Arlene Kuntz (BSP 1981); Dr. Amy Smith-Morris (BSP 2010)
- New Horizon Award Shelby Scherbey (BSP 2016)
- Pfizer Consumer Healthcare Bowl of Hygeia Award Vanessa Lendvay (BSP 2004)
- Canadian Foundation for Pharmacy Past Chair Award Julia Bareham (BSP 2008)
- Certificate of Recognition Julia Bareham (BSP 2008); Rod Amaya (BSP 1996); Lori Albers (BSP 2007); Amber Ly (BSP 2003); Kimberly Sentes (BSP 1996)

In a recent blog, **Stephanie Langdon (BScNutr 2010)** checked in with her former classmates to find out what they're doing in the world of nutrition and dietetics. <u>Read more.</u>







# ALUMNI NEWS

Jeff Wandzura (BSP 2013) was mentioned in the "Appetite for innovation" article in the spring 2017 Green & White alumni magazine. The article discusses Patient Prep, which is an online questionnaire to gather patient information. <u>Read</u> <u>more.</u>

On Wednesday, May 17, **Brooke Bulloch (BScNutr 2009)** was part of a demonstration at Saskatoon's food bank to teach high school students how to cook budget-friendly and nutritious meals, while also educating them about food insecurity. <u>Read more.</u>

**Dr. Wasem Alsabbagh (PhD 2015)** recently lectured at the University of Waterloo on medication management during Ramadan. <u>Read more.</u>

On Wednesday, May 17, **Brooke Bulloch (BScNutr 2009)** was back on Global Saskatoon Morning News to discuss celiac disease, gluten free diets, and Celiac Awareness Month. <u>Watch the video.</u>

Kelly Kizlyk (BSP 2002) was on Global Saskatoon Morning News on Tuesday, June 6, to talk about the different types of sunscreen and to be wary about what you read online. <u>Watch the video.</u>

Congratulations to **Natasha Haskey (BScNutr 1998, MSc 2007)** for receiving one of the Member Recognition Awards for Innovation at the Dietitians of Canada Conference.

Congratulations to **Patricia Chuey (BScNutri 1989, MSc 1994)** on receiving the 2017 Ryley Jeffs Memorial Lecture Award. The Ryley Jeffs Memorial Lecture Award is an opportunity to recognize a DC member who exemplifies the ideals of dedication to the profession and who has a proven ability to chart new directions in the field of dietetics.

Thank you to **Dr. Amy Smith-Morris (BSP 2010)** for providing greetings on behalf of the alumni at pharmacy graduation banquet on Thursday, June 8. <u>Watch the video.</u>

Do you have alumni news to share? Submit your story to <u>kieran.kobitz@usask.ca</u> to be featured in our next newsletter.

## EVENTS

#### UPCOMING EVENTS

The River Boat Tour and BBQ will be held on **Thursday, June 17**, for faculty, staff, graduate students, and their families. Please RSVP by Friday, July 29, by contacting <u>martha.hollinger@usask.ca</u>.

## PAST EVENTS

#### 2017 PAS Conference Alumni Reception

The college hosted its regular dessert and alumni reception on Friday, May 5, after the SCPP Awards Banquet.



# **EVENTS**

## **Alumni Weekend and Home Economics Centennial**

The University of Saskatchewan Alumni Association hosted its Alumni Weekend Reunion on May 19-21. The weekend's events included a tour of the college's new facilities, and the Home Economics 100<sup>th</sup> Anniversary Tea and Candle Lighting Ceremony. Congratulations to **Dr. Jim Blackburn**, President of the Alumni Association, and **Merry Beazely**, Home Economics alumna, on a successful series of events.

## Sask Night

Sask Night returned to the 2017 Canadian Pharmacists Association Conference on Saturday, June 3, at Pub Ozone in Quebec City. This year's theme was "heroes and villains"

#### **Dean's Golf Tournament**

The college held the first Dean's Golf Tournament at Moon Lake Golf and Country Club on Thursday, June 22. Congratulations to tournament champions **Grady Brown, Grant Hladun, Kevin Meyer (BSP 1995),** and **Derek Klimosko**. Thanks to everyone who came out, especially for playing in the wet and windy weather!

# Dr. Adil Nazarali Fundraiser

Dr. Adil Nazarali's lab members held a Come & Go Coffee/Tea on Friday, June 23. The lab members collected funds for the Cleft Palate Foundation, which is a cause Adil passionately supported, and will be making a donation to the foundation in his memory.

## **RESEARCH AND GRADUATE STUDIES**

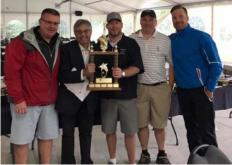
## SPOTLIGHT ON RESEARCH

#### June Researcher of the Month

Congratulations to **Dr. Jason Perepelkin** who is our June Researcher of the Month. His research focuses on three primary areas related to social and administrative pharmacy. <u>Read more.</u>













#### TRAINEE SUCCESS

#### Program Update

The College welcomes postdoctoral fellows **Dr. Rubin Jiao** (supervisor: Dr. Kate Dadachova) and **Dr. Karthic Rajamanickam** (supervisor: Dr. Meena Sakharkar) this summer.

## Congratulations to our MSc and PhD Graduates!

The College had eight former graduate students receive their degrees at Spring Convocation 2017:

#### <u>PhD</u>

## Ahmed Almousa

Pharmacy - Thesis: Local Effects of Linoorbitides and Enterolactone on Intestinal Epithelial Functions Co-supervisors: Jane Alcorn and Ed Krol

#### Ran Bi

Pharmacy - Thesis: Epigenetic Regulation of *Hoxa*1 and *Hoxa*2 Supervisor: Adil Nazarali

#### Yunyun Di

Pharmacy - Thesis: Flaxseed Lignan Supplementation as Possible Adjuvant Therapy for Prostate and Breast Cancer Co-Supervisors: Jane Alcorn and Ed Krol

#### Virginia Lee Lane

Nutrition – Thesis: Dietary Intake, Physical Activity, Food Security and Nutritional Status of Newcomer Children in Saskatchewan Supervisor: Hassan Vatanparast

#### **Getahun Ersino Lombamo**

Nutrition – Thesis: Dietary Practices, Maternal Nutritional Status and Child Stunting: Comparative and Intervention Studies in Pulse and Non-Pulse Growing Rural Communities in Ethiopia Co-Supervisors: Carol Henry and Gord Zello

## <u>MSc</u>

#### Shirin Shafiq Aladwan

Pharmacy - Thesis: Adverse Symptoms of Immunosuppressants: The Patient Perspective Supervisor: Holly Mansell

#### **Kholud Ali Algabbass**

Pharmacy - Thesis: Activation of Cyclic Phenol Phosphate Analogues as Potential Inhibitors of Autotaxin Supervisor: Ed Krol

#### **Katherine Jean Lysak**

Pharmacy - Thesis: Pharmacy Student Perceptions of Volunteering at a Medication Assessment Clinic Located Within a Pharmacy School Supervisor: Derek Jorgenson





#### **College Awards**

**FRAME Training School in Experimental Design Registration** Raj Rai (Supervisor: Dr. Ildiko Badea)

#### **Graduate Student Conference Funding Awards**

Frank De Silva (Supervisor: Dr. Jane Alcorn) Sarah Finch (Supervisors: Dr. Hassan Vatanparast and Alan Rosenberg) Katherine Ford (Supervisor: Dr. Susan Whiting) Maryam Kazemi (Supervisors: Drs. Gord Zello and Donna Chizen)

## Gordon McKay Graduate Student Award in Analytical Chemistry

Mona Hamada (Supervisors: Drs. Anas El-Aneed and Darryl Adamko)

## External Awards

Hope Hunt Scholarship Katherine Ford

International Council on Women's Health Issues Graduate Scholarship Maryam Kazemi (Supervisors: Drs. Gord Zello and Donna Chizen)

#### John Larson Cancer Research Trust Scholarship

Frank De Silva (Supervisor: Jane Alcorn)

#### **Rhea Ritchie Scholarship**

Maryam Kazemi (Supervisors: Drs. Gord Zello and Donna Chizen)

#### Poster Awards

Twenty seven trainees from the College of Pharmacy and Nutrition participated in the Life and Health Sciences Research Expo held on May 4<sup>th</sup> and 5<sup>th</sup>. The following graduate students from the College received awards:

- Paul Iyyanar (Supervisor: Dr. Adil Nazarali) First place poster award in Cell Biology
- Mona Hamada (Supervisors: Drs. Anas El-Aneed and Darryl Adamko) Second place poster award in Novel Approaches
- Merlin Thangaraj (Supervisor: Dr. Adil Nazarali) 2017 Best Basic Science Paper
- Waleed Mohammed-Saeid (Supervisors: Drs. Anas El-Aneed and Ildiko Badea) First place poster award in Novel Approaches
- Maryam Kazemi (Supervisors: Drs. Gord Zello and Donna Chizen) First place poster award in Nutrition, Second place
  poster award in Interdisciplinary Category
- Allison Cammer (Supervisors: Drs. Susan Whiting and Debra Morgan) Second place poster in Nutrition
- Sarah Fatani (Supervisor: Dr. Anas El-Aneed) Second place poster in Health Management





## Poster Presentations

Student posters presented at the Canadian Nutrition Society Conference held in Montreal from May 25-27, 2017:

- Lila Abobakar (supervisor: Dr. Hassan Vatanparast): Evaluation of Menus Planned in Saskatchewan Childcare Centres that Participate in Healthy Start/Depart Santé Program
- **Mahasti Khakpour** (supervisor: Dr. Hassan Vatanparast): Socio-economic and cultural facilitators and barriers of refugee households' food insecurity: A snapshot of the food security status of Afghan Refugees in Pakistan
- Kosar Omidian (Supervisor: Dr. Brian Bandy): Polyphenols prevent carcinogenesis by ameliorating mitochondrial dysfunction and inducing mitochondrial biogenesis
- Hossein Rafiei (Supervisior: Dr. Brian Bandy): Protection by different classes of dietary polyphenols against palmitateinduced mitochondrial dysfunction and endoplasmic reticulum stress in a cell model of non-alcoholic fatty liver disease

Student posters presented at the Canadian Society for Pharmaceutical Sciences conference held in Montreal from May 10-12, 2017:

- Franklyn De Silva (supervisor Dr. Jane Alcorn): Mammalian Lignans Alter Lipid Metabolism and Influence Endoplasmic Reticulum Stress to Sensitize Cancer Cells to Clinically Relevant Anti-cancer Agents
- Rasha Elhasade (supervisor: Dr. Azita Haddadi): Nanoparticle formulation and evaluation of novel synthetic immune stimulating agents
- Muath Helal (supervisors: Drs. Jane Alcorn and Brian Bandy): Relative protection by cyanidin and its degradation products against doxorubicin cytotoxicity in H9C2 cardiomyocytes
- Ayat Zagzoog (supervisor: Azita Haddadi): Conjugation approaches to develop modified nanoparticles for HER2 breast cancer targeting

#### Posters presented at other conferences:

- Franklyn De Silva (supervisor Dr. Jane Alcorn) presented the following posters in May and June: Mammalian lignan, enterolactone modulate cellular energy metabolism to sensitize breast & prostate cancer cells to clinically relevant anti-cancer agents at the 4<sup>th</sup> Annual Saskatchewan Cancer Conference held in Saskatoon; Lignans target cholesterol trafficking to modulate endoplasmic reticulum stress and sensitize breast and prostate cancer cells to clinically relevant kinase inhibitors at the Canadian Students Health Research Forum /Gairdner Symposium in Winnipeg; and Mammalian Lignans Modulate Cellular Energy Metabolic Pathways to Sensitize Cancer Cells to Anti-cancer Agents at the Canadian Society for Molecular Biosciences in Ottawa.
- Katherine Ford (Supervisor: Dr. Susan Whiting) presented her poster Vitamin and Mineral Supplement Use by Older Adults with Complex Medication Needs: Potential for adverse drug-nutrient interactions at the Dietitians of Canada National Conference held in Sr. John's, Newfoundland from June 7-10, 2017.

#### **U of S AAPS Student Chapter**

The U of S AAPS student chapter members have selected their new executive committee. The following student members have been elected for running the chapter for the academic year 2017-2018;

- 1. Chair: Frank De Silva
- 2. Chair elect: Natasha Breward
- 3. Vice chair: Ayat Zagzoog
- 4. Treasurer/Secretary: Raj Rai

Mona Hamada and Mays Al-Dulaymi (Co-founders and Ex-chairs) will continue to provide their advice, and support to the new executives to ensure the smooth transition of leadership.







## **RESEARCH FUNDING**

**Kate Dadachova** was awarded a \$25,000 grant from Royal University Hospital Foundation for the project entitled *First in Man Study of 188Re-Labeled 8C3 Antibody as Theranostic for Patients with Metastatic Melanoma*, with Medical Imaging co-investigator Rajan Rakheja.

**Kate Dadachova** was also awarded a \$15,000 Collaborative Research Travel Grant from Burroughs Wellcome Inc. for *Radioimmunotherapy of bacterial infections of the artificial joints*.

**Paul Pown Raj Iyyanar**, PhD candidate (**Adil Nazarali**) was awarded a \$5,000USD grant from Cleft Palate Foundation for the project entitled *Hoxa2 Regulates Osteogenic Differentiation Through BMP Signaling During Palate Development - Implication in Cleft Palate Pathogenesis.* 

Hassan Vatanparast and Pammla Petrucka (Nursing) are bringing together partners from Guatemala, Tanzania and Canada for the project Global Leaders Scholarship – Seeking Sustainable Solutions in Food Security and Nutrition for Women and Children: A Tri-Country Approach, which has received almost \$450,000 from the Canadian Queen Elizabeth II Diamond Jubilee Advanced Scholars Program and \$217,000 cash and \$141,000 in-kind support from the Office of the Vice-President Research, College of Graduate and Postdoctoral Studies, College of Pharmacy and Nutrition, School of Public Health, and College of Nursing, for three years.

**Hassan Vatanparast** was also awarded a \$20,000 CIHR Planning and Dissemination grant to fund the knowledge translation event *Refugee Crises, Access to Food and Health, Time for Action* in partnership with the Canadian Nutrition Society.

**Ellen Wasan** was awarded a \$15,000 President's NSERC grant in support of *Biophysical Behavior of Lipidic Self Assembled Vaccine Adjuvant*.

**Jian Yang** was awarded a \$10,000 President's NSERC grant for the project *A New Look at the Cellular and Molecular Biological Functions of Sphingosine-1-Phosphate.* 

**Kerry Mansell** was awarded \$14,500 from Apobiologix for *Budget Impact Analysis of Using the Biosimilars Grastofil and Basaglar vs. Neupogen and Lantus.* 

#### **RECENT PUBLICATIONS**

- Alsabbagh, M.W.\*, Eurich, D., Lix, L.M., Wilson, T.W., Blackburn, D.F. 2017. Does the association between adherence to statin medications and mortality depend on measurement approach? A retrospective cohort study. BMC Medical Research Methodology, 17 (1), 66.
- Cawthray J, Wasan E, Wasan K. 2017. Bone-seeking agents for the treatment of bone disorders. Drug Deliv Transl Res. Review.
- Evans, C., Marrie, R.A., Zhu, F., Leung, S., Lu, X., Kingwell, E., Zhao, Y., Tremlett, H. 2017. Adherence to diseasemodifying therapies for multiple sclerosis and subsequent hospitalizations. Pharmacoepidemiology and Drug Safety. Article in Press





- Harrison, J.J., Mansell, H., Blydt-Hansen, T. 2017. Adverse symptoms of immunosuppressants: A survey of Canadian transplant clinicians. Clinical Transplantation, 31 (5), art. no. e12940.
- Kosar, L., Alsabbagh, W.\*, Lu, X., Lix, L.M., Shevchuk, Y., Teare, G.F., Champagne, A., Blackburn, D.F. 2016. Self-Monitoring Blood Glucose Test Strip Utilization in Saskatchewan: A Retrospective Study. Canadian Journal of Diabetes. Article in Press
- Lebedeva, K.A., Caruncho, H.J., Kalynchuk, L.E. 2017. Cyclical corticosterone administration sensitizes depression-like behavior in rats. Neuroscience Letters, 650 pp. 45-51.
- McKay, K.A., Tremlett, H., Patten, S.B., Fisk, J.D., Evans, C., Fiest, K., Campbell, T., Marrie, R.A. 2017. Determinants of non-adherence to disease-modifying therapies in multiple sclerosis: A cross-Canada prospective study. Multiple Sclerosis, 23 (4) pp. 588 - 596.
- Penm, J., Jorgenson, D., MacKinnon, N.J., Smith, J. 2017. Part 1: Barriers to the advancement of the pharmacy profession. Canadian Pharmacists Journal, 150 (3) pp. 150 152.
- Penm, J., MacKinnon, N.J., Jorgenson, D., Smith, J. 2017. Part 2: Roles and expertise needed to move the profession forward and improve health outcomes. Canadian Pharmacists Journal, 150 (3) pp. 153-155.
- Rafferty, E., Yaghoubi, M., Taylor, J., Farag, M. 2017. Costs and savings associated with a pharmacists prescribing for minor ailments program in Saskatchewan. Cost Effectiveness and Resource Allocation, 15 (1), art. no. 3
- Rafiei, H.\*, Omidian, K.\*, Bandy, B. 2017. Comparison of dietary polyphenols for protection against molecular mechanisms underlying nonalcoholic fatty liver disease in a cell model of steatosis. Molecular Nutrition and Food Research. Article in Press.
- Wang X, Gregory-Evans K, Wasan KM, Sivak O, Shan X, Gregory-Evans CY. 2017. Efficacy of Postnatal In Vivo Nonsense Suppression Therapy in a Pax6 Mouse Model of Aniridia. Mol Ther Nucleic Acids. (16) 7:417-428.
- Wasan KM, Berry L, Kalra J. 2017. Physician centric healthcare: is it time for a paradigm shift? J R Soc Med.
- Weekes DM, Cawthray JF, Rieder M\*, Syeda J\*, Ali M, Wasan E, Kostelnik TI, Patrick BO, Panahifar A, Al-Dissi A, Cooper D, Wasan KM, Orvig C. 2017. La(iii) biodistribution profiles from intravenous and oral dosing of two lanthanum complexes, La(dpp)<sub>3</sub> and La(XT), and evaluation as treatments for bone resorption disorders. Metallomics.
- Wijnands, J.M.A., Kingwell, E., Zhu, F., Zhao, Y., Högg, T., Stadnyk, K., Ekuma, O., Lu, X., Evans, C., Fisk, J.D., Marrie, R.A., Tremlett, H. 2017. Health-care use before a first demyelinating event suggestive of a multiple sclerosis prodrome: a matched cohort study. The Lancet Neurology, 16 (6) pp. 445 451.