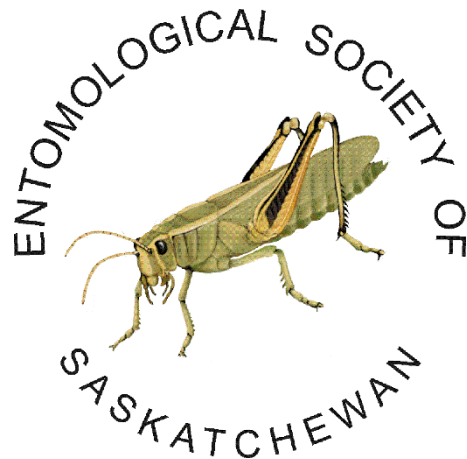




ENTOMOLOGISTS OF SASKATCHEWAN SECOND EDITION

Meghan Vankosky, Martin Erlandson, and Cedric Gillott, editors

2019



Foreword and Acknowledgements

In 2017, Owen Olfert gave me a copy of *Entomologists of Saskatchewan*. Being new to the entomology community in Saskatchewan at the time, I read it with interest and especially enjoyed seeing pictures of my new colleagues from almost 30 years earlier. Paul W. Riegert did an amazing job capturing the history of entomological expertise in Saskatchewan in the 1990 edition of *Entomologists of Saskatchewan*. Seeing value in historical records and knowledge, I suggested that the book be updated at the December 2017 meeting of the Entomological Society of Saskatchewan (ESS). I also ended up inadvertently volunteering myself for the task, with the generous assistance of Martin Erlandson and Cedric Gillott.

The process of updating a nearly 30 year-old document of this nature was challenging. Entomologists have retired and moved away from Saskatchewan, and in one case, retired and moved TO Saskatchewan. Entomologists included in the 1990 edition have sadly passed away or have slipped out of touch. Although there has been a loss of entomological expertise in Saskatchewan, there has also been renewal in the form of newly graduated students, newly identified professionals and amateurs, and in the immigration of new professional entomologists. Renewal of this nature is indicative of the ongoing importance of entomological knowledge, basic and applied. Some of the new entomologists are studying bee taxonomy and biology at the Royal Saskatchewan Museum, aquatic entomology at the Water Security Agency, and agricultural entomology at Agriculture and Agri-Food Canada. In addition, the University of Saskatchewan College of Agriculture and Bioresources hired their first entomologist in 2017.

To minimize the challenges, we first discussed guidelines for the project. First, we decided to recognize entomologists who had passed away before 1990 in Table 1 and those who passed away between 1990 and June 2019 in Table 2. Biography updates for entomologists listed in Tables 1 and 2 are not included due to the inherent difficulty in obtaining information. Second, biography updates were solicited and included for entomologists featured in Riegert (1990). Of these individuals, some asked to be excluded from the update or did not respond to our request. Others requested only minor updates to their 1990 biographies. In these cases, biographical information from Riegert (1990) is included here (verbatim), with a few additional sentences to provide an update on activities since 1990. We recognize the significant historical effort of Paul W. Riegert in compiling the 1990 edition of *Entomologists of Saskatchewan* and honour his memory by including his text here. Third, new biography entries were solicited from professional and amateur entomologists not featured in Riegert (1990) based on ESS membership and the magnitude of their past and present contributions to the field of entomology in Saskatchewan (at the discretion of the editors). Finally, M.Sc. and Ph.D. theses completed at the University of Regina and University of Saskatchewan represent the contributions of entomologists-in-training. We challenge these individuals to continue to contribute to the entomological community in Saskatchewan so that their biographies can be included in future editions of *Entomologists of Saskatchewan*.

Cedric, Martin, and I would like to thank everyone who helped track down errant entomologists at the outset of this project and recognize the value of the collective memory of this community. We thank everyone who contributed biographies and pictures. We acknowledge that this edition of *Entomologists of Saskatchewan* is not exhaustive. If you consider yourself an entomologist

practicing (or having practiced) research, outreach, or education activities in Saskatchewan and would like your biography added to *Entomologists of Saskatchewan*, please let us know. Our intention is to maintain the *Entomologists of Saskatchewan* as an ‘evergreen’ document, with frequent updates as needed, for as long as the entomological community of Saskatchewan finds value in keeping it up to date.

Thank you.

Meghan Vankosky

Common Abbreviations

AAFC: Agriculture and Agri-Food Canada, a department of the federal government of Canada that focuses on agricultural research. In 2019, AAFC had research centres located in Saskatoon and Swift Current, with research farms or research stations located in Scott, Melfort, Outlook, and Indian Head. Historically, entomological research has been conducted at all of these sites as well as at other sites that have since closed. Entomologists have not always been stationed at all AAFC sites in Saskatchewan. The AAFC Regina Research Farm was closed in 1995. Research activities at the Regina Research Farm continued for some time under the supervision of AAFC-Swift Current, and most of the scientific staff moved to Saskatoon or to other AAFC sites. Although AAFC maintains a presence in Regina, there are currently no professional entomologists located there.

The research centre in Saskatoon has undergone a number of name changes that are pertinent to mention here as many of Saskatchewan's entomologists have worked or currently work in Saskatoon. The first federal research centre in Saskatoon was the Entomological Laboratory, established in 1917. It was later joined by the Laboratory of Plant Pathology (1919) and the Forage Crop Laboratory (1931), all on the University of Saskatchewan campus. A building to house federal research in Saskatoon was completed in 1957 and christened the Saskatoon Research Station in 1959. The Saskatoon Research Station was renamed the Saskatoon Research Centre in 1993, and was subsequently renamed the Saskatoon Research and Development Centre in 2015. For the purposes of this publication, we have attempted to use the correct name of the AAFC research station located in Saskatoon, based on the time during which each entomologist worked in this facility.

Agriculture and Agri-Food Canada has also experienced name changes throughout its history. For the sake of simplicity, the current name, Agriculture and Agri-Food Canada or AAFC, will be used throughout this document.

ESC: the Entomological Society of Canada

ESS: the Entomological Society of Saskatchewan

IPM: Integrated pest management

Table 1. Entomologists deceased prior to 1990 with biographies included in the previous volume of *Entomologists of Saskatchewan* (Riegert 1990).

| Surname | Given Names | Date of Birth | Date of Death |
|----------------|--------------------|----------------------|----------------------|
| Arnason | Arni Pall | 29 November 1903 | 16 October 1964 |
| Atkinson | Norman Jethro | Unknown | December 1932 |
| Bellamy | Raymond Edward | 8 December 1912 | 7 February 1977 |
| Brooks | Arthur Robinson | 31 August 1917 | 13 August 1962 |
| Cameron | Alfred Ernest | 1887 | 27 February 1952 |
| Church | Norman Stanley | 3 April 1929 | 26 July 1975 |
| Lowe | Reuben Baldwin | 24 October 1907 | 1 February 1986 |
| McLintock | John James Reid | 18 August 1912 | 14 October 1982 |
| McMahon | Harold Alexander | 6 October 1909 | 21 October 1986 |
| McMillan | Hugh Ellis | 25 December 1903 | 24 June 1935 |
| Moore | Herman William | 15 July 1912 | 30 December 1950 |
| Rempel | Jacob Gerhard | 26 June 1903 | 30 May 1976 |
| Saunders | Leslie Gale | 30 June 1895 | 13 September 1968 |
| Vibert | Robert Orville | 19 December 1931 | 27 October 1990 |
| Willing | Thomas Nathaniel | 1858 | 30 November 1920 |

Table 2. Entomologists deceased between 1990 and June 2019 with biographies included in the previous volume of *Entomologists of Saskatchewan* (Riegert 1990).

| Surname | Given Names | Date of Birth | Date of Death |
|----------------|------------------------|----------------------|----------------------|
| Allan | Ronald Keith | 15 November 1917 | 20 July 2000 |
| Arthur | Alfred Pibus | 15 March 1924 | 9 March 2005 |
| Bellamy | Frank William | 29 April 1929 | 7 March 2014 |
| Burrage | Robert Harcourt | 18 March 1920 | 2 July 2012 |
| Cameron* | Malcolm Laurence | 23 October 1918 | 10 August 2011 |
| Craig | Charles Harvey | 4 June 1924 | 25 March 2019 |
| Davis | Gordan Richard Fuerst | 5 April 1925 | 23 November 2005 |
| Devlin | Charlton George | 28 March 1913 | 3 July 2004 |
| Ewen | Alwyn Bradley | 24 October 1932 | 25 September 2008 |
| Fredeen | Frederick John Hartley | 23 September 1920 | 10 September 2003 |
| Gilkinson | Glen Lawrie | 6 January 1924 | 29 February 2004 |
| Harris | Peter | 19 October 1930 | 25 August 2014 |
| Hinks | Christopher Frederick | 10 March 1939 | 12 November 2016 |
| Hooper | Ronald Richard | 28 April 1931 | 2 December 2010 |
| King | Kenneth Marion | 1 March 1896 | 1 April 1996 |
| Kusters** | Peter Martin | 30 November 1954 | July 2019 |
| MacLeod | Malcolm Norman | 21 March 1923 | 19 May 2019 |
| Martin | William Kenneth | 9 January 1931 | 16 January 2019 |
| McDonald | Howard | 23 February 1911 | 4 August 2000 |
| Mukerji | Mukul K. | 6 January 1938 | 23 June 1992 |
| Paul | Lorne Caswell | 27 October 1904 | 16 December 2004 |
| Peters | Elmer George | 18 August 1920 | 28 January 2003 |
| Pickford | Roy | 19 September 1917 | 14 January 2014 |
| Putnam | Lloyd George | 15 March 1913 | 8 May 2001 |
| Riegert | Paul William | 5 December 1923 | 9 May 2002 |
| Taylor | Maurice Edgar | 31 October 1915 | 9 April 2003 |
| Weegar | Harold Herbert (Bud) | 24 June 1935 | 14 June 2015 |
| Zacharuk | Russel Yaroslow | 1 May 1928 | 1 February 2011 |

*In Riegert (1990), the biography entry for Dr. M. Cameron was not accompanied by a photograph. Although he passed away in 2011, we wanted to complete his entry, thus a photograph and updated biography are provided on page 7.

**Peter Kusters passed away just prior to the completion of this project. In honour of his memory, his updated biography can be found on page 20.

Graduate Students in Entomology (1990-2019)

Below is a list of students who graduated from the University of Regina and the University of Saskatchewan (from various departments) between 1990 and early 2019. One graduate from prior to 1990 is included, as his Ph.D. dissertation was not included in Riegert (1990).

1. UNIVERSITY OF REGINA

Contreras, Daniel A. M.Sc., 2007. A molecular biogeographic analysis of the gomphocerine grasshoppers (Orthoptera: Acrididae). Supervisor: William Chapco.

Guenther, Shawna J. M.Sc., 1994. Evolutionary relationships amongst melanopline grasshoppers. Supervisor: William Chapco.

Kuperus, Wanda R. Ph.D., 2000. Phylogenetic analysis of the orthopteroid insects with special emphasis on subfamily Melanoplineae (Orthoptera: Acrididae). Supervisor: William Chapco.

Litzenberger, Gregory S. Ph.D., 2002. Taxonomic affiliations and phylogeographic origins of melanoploid grasshoppers as revealed by molecular phylogenetic analyses. Supervisor: William Chapco.

Leung, Emily S.-C. Ph.D., 1990. Ultrastructure of labial palpal sensilla and associated multiterminal neurons and gland cells in adult *Graphoderus occidentalis* Horn (Coleoptera: Dytiscidae). Supervisor: Russel Zacharuk.

Martel, Richard K.B. M.Sc., 1994. Mitochondrial DNA variation in the band-winged grasshoppers. Supervisor: William Chapco.

McFadyen, David A. M.Sc., 1990. Mitochondrial DNA variation in melanopline grasshoppers. Supervisors: Rodney Kelln and William Chapco.

Radtke, Troy M. Ph.D., 2012. Granivory and granivores in native grasslands and *Agropyron cristatum* stands in the Northern Great Plains. Supervisor: Scott Wilson.

Shields, Vonnie D.C. Ph.D., 1994. Structure and function of maxillary galeal sensilla in larval bertha armyworm: *Mamestra configurata* Walker (Lepidoptera: Noctuidae). Supervisors: Mel Weisbart and Bev Mitchell.

Walters, Braden D. M.Sc., 1995. Chemosensilla on the proboscis of the eastern spruce budworm, *Choristoneura fumiferana* (Clem.) (Lepidoptera: Tortricidae). Supervisors: Russ Zacharuk and Mark Forbes.

2. UNIVERSITY OF SASKATCHEWAN

Achtymichuk, Kimberley A. M.Sc., 2017. Distribution and morphology of a phoretic mite, *Anoetus halictonida* (Histiostomatidae), on an urban population of *Halictus rubicundus* in central Saskatchewan. Supervisor: Art Davis.

Andrahennadi, M.D. Ruwandi S. M.Sc., 1993. Resistance of the genus *Brassica*, with emphasis on *B. juncea* (L.) Czern., to the diamondback moth (*Plutella xylostella* L.). Supervisors: Cedric Gillott and Ken Pivnick.

Andrahennadi, M.D. Ruwandi S. Ph.D., 2009. Biotransformation of selenium and arsenic in insects: environmental implications. Supervisor: Ingrid Pickering.

Anstead, Clare A. Ph.D., 2013. Comparison of the ticks and tick-borne bacteria of small mammals in Western Canada. Supervisor: Neil Chilton.

Armstrong, James S. M.Sc., 2015. Comparison of the mitochondrial genomes of the common bed bug (*Cimex lectularius*), the eastern bat bug (*Cimex adjunctus*) and the swallow bug (*Oeciacus vicarius*). Supervisor: Neil Chilton.

Benaragama, Indika. M.Sc., 2012. Collision avoidance behaviour in a pair of flying locusts (*Locusta migratoria* L). Supervisor: John Gray.

Benjamin, Mano C. M.Sc., 2002. Factors influencing the contact and oral toxicity of Spinosad to the crucifer flea beetle, *Phyllotreta cruciferae* (Goeze). Supervisors: Cedric Gillott and Bob Elliott.

Berin, Karin P. M.Sc., 1998. Effects of combinations of AC303, 630 and Dipel® on diamondback moth (Lepidoptera: Yponomeutidae) larvae and *Beauveria bassiana* (Balsamo) Vuillemin on migratory grasshoppers (Orthoptera: Acrididae). Supervisor: George G. Khachatourians.

Bidochka, Michael J. Ph.D., 1989. Interaction of the entomopathogenic fungus, *Beauveria bassiana*, with the migratory grasshopper, *Melanoplus sanguinipes*: a systematic study of pathogenesis. Supervisor: George Khachatourians.

Butala, Jaydrath M.Sc., 2009. Real-time processing of physiological signals for feedback control. Supervisors: John Gray and Robert Gander.

Caswell, Wade D. M.Sc., 2008. Reproductive biology and nectary structure of *Lythrum* in central Saskatchewan. Supervisor: Art Davis.

Cavallaro, Michael C. Ph.D., 2018. Assessing the effects of chronic neonicotinoid insecticide exposure on aquatic insects using multiple experimental approaches. Supervisor: Christy Morrissey.

- Dergousoff, Shaun J.** Ph.D., 2011. Comparison of the bacteria within ticks from allopatric and sympatric populations of *Dermacentor andersoni* and *Dermacentor variabilis* near their northern distributional limits. Supervisor: Neil Chilton.
- Dick, Paul.** M.Sc., 2013. Sensory coding of complex visual motion in the locust (*Locusta migratoria*). Supervisor: John Gray.
- Elijah, A.** M.Sc., 2001. Impact of dose and temperature on *Mamestra configurata* nucleopolyhedrovirus pathogenesis in bertha armyworm. Supervisor: George Khachatourians.
- Gariepy, Tara D.** Ph.D., 2007. Molecular markers for parasitoids to assess host specificity of candidate entomophagous biological control agents. Supervisors: Cedric Gillott and Martin Erlandson.
- Gillespie, Jeremy P.** M.Sc., 1991. Aspects of cellular and humoral immunity in the migratory grasshopper *Melanoplus sanguinipes*. Supervisor: George Khachatourians.
- Hoemsen, Brittney M.** M.Sc., 2015. Indicator invertebrates: determining the change in benthic macroinvertebrate communities due to deposited sediment in the Northern Great Plains. Supervisor: Douglas Chivers.
- Jones, Tania J.** M.Sc., 1996. The interaction of chlorpyrifos with *Bacillus thuringiensis var kurtsaki* or *Bacillus pumilis* in combination on diamondback moth larvae. Supervisor: George Khachatourians.
- Krakowetz, Chantel N.** Ph.D., 2015. Genetic diversity and phylogeography of the blacklegged ticks (*Ixodes scapularis*), and an associated bacterium (*Anaplasma phagocytophilum*). Supervisor: Neil Chilton.
- Langenberger, Michael W.** M.Sc., 2000. Studies of caraway pollination by honey bees and other insects in Saskatchewan, Canada. Supervisor: Art Davis.
- Li, Sheping.** Ph.D., 1996. Molecular cloning and physical mapping of bertha armyworm, *Mamestra configurata*, nuclear polyhedrosis virus genome and preliminary study of geographic isolates. Supervisors: Cedric Gillott and Martin Erlandson.
- Lipsit, Scott W.** M.Sc., 2001. Effect of *Bacillus thuringiensis* variety *israelensis* on blackflies (Diptera: Simuliidae) in the North Saskatchewan River. Supervisor: Dennis Lehmkuhl.
- Lukwinnski, Angelina.** M.Sc., 2001. Characterization of midgut microfauna from bertha armyworm (*Mamestra configurata*) and crucifer root maggot (*Delia radicum*). Supervisor: George Khachatourians.
- Maingon, Löys, P.A.** M.Sc., 2000. Community diversity in two subalpine seepage springs, Gambier Island, B.C.: the role of allochthonous carbon inputs in community structure after deforestation. Supervisor: Dennis Lehmkuhl.

- McMillan, Glyn.** M.Sc., 2009. Sensory coding in an identified motion-sensitive visual neuron of the locust (*Locusta migratoria*). Supervisor: J. Gray.
- Melnychuk, Nancy A.** M.Sc., 1999. Predatory insects in Saskatchewan farming systems. Supervisors: Cedric Gillott and Owen Olfert.
- Miyazaki, Rie.** M.Sc., 2006. The effect of Hayachine Dam on downstream aquatic communities. Supervisor: Dennis Lehmkuhl.
- Murza, Gillian L.** M.Sc., 2002. Plant-arthropod interactions of the English Sundew (*Drosera anglica* Huds.) at the Macdowall Bog Protected Region, Saskatchewan. Supervisor: Art Davis.
- Ochoa Sanabria, Carlos A.** M.Sc., 2018. Feeding *Fusarium*-infected wheat to yellow mealworm larvae (*Tenebrio molitor*) to produce a safe replacement protein source for animal feed. Supervisors: Fiona Buchanan and Natacha Hogan.
- Pontoh, Julius.** Ph.D., 2001. Isolation, purification and characterization of glucosidases from three honey bee species (*Apis mellifera*, *A. cerana* and *A. dorsata*). Supervisor: Nicholas Low.
- Qazi, Sohail S.** Ph.D., 2008. Regulatory role of ambient pH in the expression of pathogenicity determinant gene products of *Beauveria bassiana* and *Metarhizium anisopliae*. Supervisor: George Khachatourians.
- Sarauer, Bryan L.** M.Sc., 2002. An investigation of the peritrophic matrix proteins from the diamondback moth (*Plutella xylostella*) and the cabbage root maggot (*Delia radicum*). Supervisors: Cedric Gillott and Dwayne Hegedus.
- Selinger, Leonard B.** Ph.D., 1993. Expression of *Bacillus thuringiensis* [delta]-endotoxin genes by rhizosphere inhabiting bacilli. Supervisor: George Khachatourians.
- Stephens, Danielle.** M.Sc., 2012. Pollination ecology and the floral rewards of *Vaccinium myrtilloides* and *V. vitis-idaea* (Ericaceae). Supervisor: Art Davis.
- Stolar, Jessica.** M.Sc., 2009. The reproductive biology and pollination ecology of *Lilium philadelphicum* L. (Liliaceae) in central Saskatchewan. Supervisor: Art Davis.
- Thampy, Prasobh R.** M.Sc., 2016. Ecological genetics aspects of anthropogenic host-shifts in soapberry bugs (Rhopalidae). Supervisor: José Andrés.
- Toprak, Umut.** Ph.D., 2011. The molecular architecture of *Mamestra configurata* peritrophic matrix. Supervisors: Cedric Gillott and Martin Erlandson.
- Ulmer, Bryan J.** Ph.D., 2002. Crucifer host plant suitability for bertha armyworm (*Mamestra configurata*) and diamondback moth (*Plutella xylostella*). Supervisors: Cedric Gillott and Martin Erlandson.

Valencia, Edison P. Ph.D., 2002. General and molecular characterization of *Beauveria bassiana* and other fungal isolates for the control of *Bemisia tabaci* whiteflies. Supervisor: George Khachatourians.

Webb, Jeffrey M. M.Sc., 2002. The mayflies of Saskatchewan. Supervisor: Dennis Lehmkuhl.

Wiens, Daniel J. M.Sc., 2016. The influence of tannins on the extrafloral nectar characteristics and insect mutualists of *Vicia faba* L. Supervisor: Art Davis.

Wist, Tyler J. M.Sc., 2005. Pollination biology of *Echinacea angustifolia* and *Echinacea purpurea* (Asteraceae) in Saskatchewan. Supervisor: Art Davis.

Zaeri, Narges. M.Eng., 2018. System identification of locust collision detection. Supervisors: John Gray and Reza Fotouhi.



ANDRAHENNADI, Ruwandi Senani Mahawattage

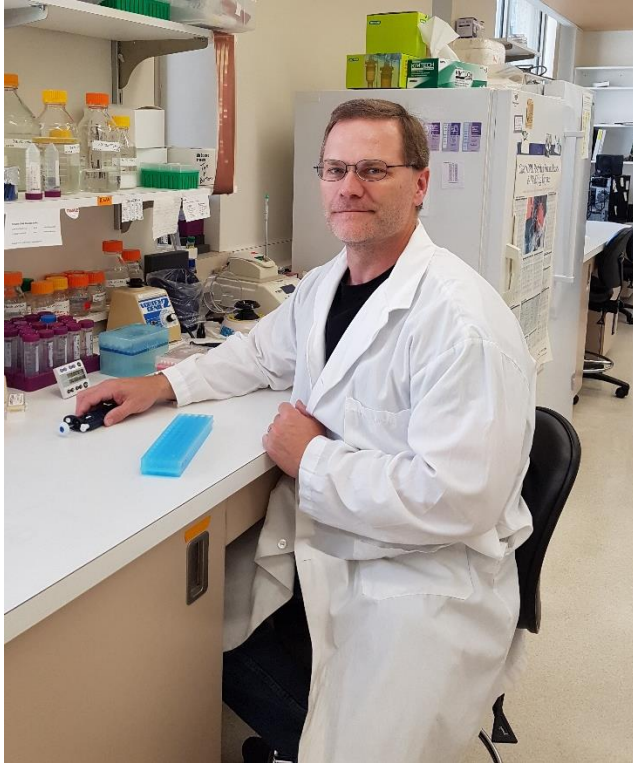
B.Sc. (1985); M.Sc. (1993); Ph.D. (2009) University of Saskatchewan

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Ruwandi's interest in Entomology began when she was an undergraduate student in Zoology in Sri Lanka. After observing the diverse and tiny lives of insects, Ruwandi decided to get to know them better. She received her B.Sc. honours degree in Zoology from University of Kelaniya, Sri Lanka in 1985 specializing in Entomology. In 1985, she began her career as a Research Officer in Entomology in the Department of Agriculture, Sri Lanka working on insect pest management in the southern dry zone region. Ruwandi moved to Canada in 1990 and started her course work for an M.Sc. degree in Macdonald College at McGill University. She completed her M.Sc. in insect-plant interactions in 1993 and Ph.D. in Environmental Entomology in 2009 from University of Saskatchewan. Ruwandi has been involved in several research programs at the AAFC Saskatoon Research Centre, where she has worked on insect and mite taxonomy, insect pest monitoring, and insect pest surveys. Currently, Ruwandi works as a technician and biologist at the AAFC Saskatoon Research and Development Centre providing support for insect nutrition and insect host-plant interaction studies. She maintains insect colonies and insect rearing facilities for the Research Centre. Ruwandi served as the Secretary of the ESS 2007 to 2009 and the President of the ESS in 2011.



BALDWIN, Douglas James

B.Sc. Adv. (1992); BST diploma (1994)

Born: July 1967, Unity Saskatchewan

Saskatoon Research and Development Centre
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Saskatoon, Saskatchewan
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From an early age Doug was interested in many areas of biology. Following his graduation from Unity Composite High School, he obtained a Bachelor of Science degree in biology from the University of Saskatchewan. Limited employment opportunities prompted Doug to return to school, and he entered the Biological Sciences Technology program at SIAST Kelsey Campus in Saskatoon to pursue a career in a research laboratory. Doug joined the AAFC Saskatoon Research Centre in August of 1994 working as a lab technician in the fields of entomology, molecular biology, and biochemistry. He has worked on the distribution of *Lygus* species, sensitivity of flea beetles to *Bt* cryotoxins, and characterization of the peritrophic matrix and digestive enzymes of bertha armyworm. Doug's primary research has been working on the susceptibility of cabbage looper, diamondback moth, forest tent caterpillar, and bertha armyworm to baculoviral infections. Doug served as President of the ESS in 2013.



BOONE, Jeffrey William

B.Sc. (2003), University of Guelph; M.Sc. (2006)
University of Toronto

Born: 24 July 1980, Peterborough Ontario

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Growing up in rural Ontario, Jeff developed an interest in natural history. Jeff became interested in entomology during his undergraduate degree at the University of Guelph, strongly influenced by Peter Kevan and Steve Marshall. After completing a degree in zoology, Jeff worked with Peter Kevan on a few pollination projects looking at the impact of habitat fragmentation on pollinator communities and studying pollination and seed dispersal for unique plants in southwestern Ontario. To continue his career in entomology, Jeff completed his M.Sc. at the University of Toronto under the supervision of Sandy Smith and Dan Quiring. He worked on interactions between black spruce, yellowheaded spruce sawfly (YHSS), and YHSS parasitoids. After graduation, Jeff worked for the City of Toronto on Asian longhorned beetle eradication, gypsy moth management, and the detection of and response to the emerald ash borer. In 2008 Jeff moved west to become the Entomologist for the City of Saskatoon. Working in the Urban Biological Services group, he provides technical support for the mosquito control program, and for the forest insect and diseases early detection and response program. He also provides identification and extension services. Jeff served as President of the ESS (2011-2012) and Regional Director to the ESC (2014-2017). He also sits on the board of the Saskatchewan Invasive Species Council.



BRAUN, Lorraine

B.Sc. (1973), M.Sc. (1987) University of Saskatchewan;
Ph.D. (1996) University of Alberta

Born: 7 June 1952, Saskatoon Saskatchewan

Retired: November 2007

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Lorraine developed an interest in biological flora and fauna early in life. While at University (1970-1973), she assisted R.A.A. Morrall with studies of diseases of pulse and field crops. After completing her B.Sc., she joined the Saskatoon Research Station as a technician, working with R.D. Tinline investigating the biology and control of root rot in wheat. In 1982, she joined A.B. Ewen and M.K. Mukerji in studying the efficacy of *Nosema* pathogens on the longevity, survival, and reproductive capabilities of pest grasshoppers. In 1988, Lorraine went to Tanzania to train personnel and to establish a pathology laboratory for the study of wheat diseases. She returned to Saskatoon in 1990 to resume her research on grasshopper biocontrol. In 1992, Lorraine joined the Entomology Department at the University of Alberta, where she worked on a midgut model to study the effects of *Bacillus thuringiensis* on the cabbage looper. After completing her Ph.D. in 1996, she returned to the AAFC Saskatoon Research Centre to work on biological control of pest insects in canola. Her work included ecological risk of transgenic insect (*Bt*) resistance under Canadian field conditions, ecological risk assessment of diamondback moth to *Bt* transgenes, midgut assay systems to pre-screen *Bt* genes against insect pests, evaluation of egg parasites for biological control of bertha armyworm, and identification of pest populations of *Lygus* spp. and their parasites. Lorraine served the ESS as President (1999), and as Treasurer for the Joint Annual Meeting of the ESC and the ESS (2007). She participated in the ESC as Regional Representative (2003-2006), and as Chair (2000-2003) and Member of the Marketing Committee.



BRAUN, Murray Peter

B.Sc. (1973) University of Saskatchewan

Born: 13 March 1951, Humboldt Saskatchewan

Retired: July 2007

Murray received his first four years of education in a small country school and then attended the school in Annaheim, SK, graduating from high school in 1969. He enrolled in a science program at the University of Saskatchewan and was fortunate to get summer employment at the Saskatoon Research Station. Here, he became involved in entomological research assisting R.H. Burrage with studies of the population dynamics, biology, and control of wireworms. After graduation, he returned to the Saskatoon Research Station as a technician to assist M.K. Mukerji in his studies of grasshopper populations. Murray was involved in the annual grasshopper abundance surveys, the forecasting of outbreaks, formulation and assessment of bran baits, and the formulation and application of chemical insecticide sprays for the control of pest grasshoppers. He also worked on formulation and application of *Nosema* pathogens as biological control agents of grasshoppers and assessed the efficacy of this control method. In 1989, Murray became involved in the assessment of parasites and predators in the biocontrol of Russian wheat aphid and the orange blossom wheat midge. His work found that an adventive coccinellid appears to be a valuable aid in aphid control.

After the retirement of John Doane, Murray worked with Owen Olfert. This work included looking at the effect of various long term farming practices on insect and soil microfauna at the AAFC Scott Research Farm. Murray also surveyed for the cabbage seedpod weevil as it spread across canola fields in Saskatchewan. Murray retired in July of 2007 after working 36 years with AAFC. After retirement, he continued doing contract work for several years, including conducting the northern portion of the annual wheat midge survey in the fall and work performing insect identification for private companies.

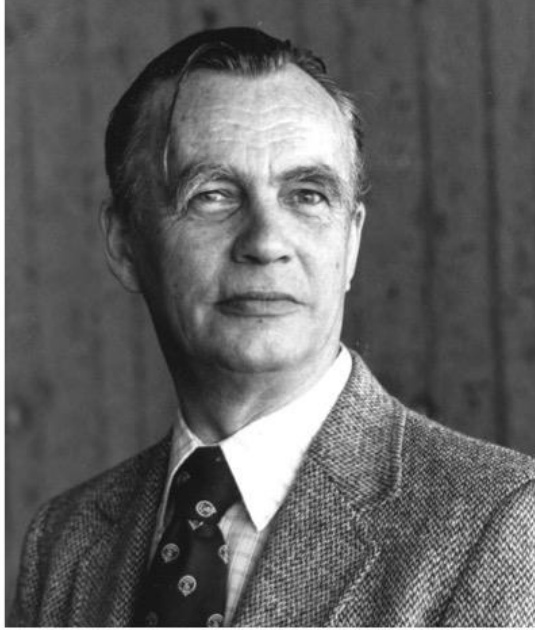
BURGESS, Lawrence

B.Sc. (1952) University of Alberta; M.Sc. (1956) University of Western Ontario; Ph.D. (1964) University of Saskatchewan

Born: 15 December 1929, Staffordshire England

Retired: 29 March 1989

Larry spent his boyhood years on a farm near Beaverlodge, Alberta and grew up to appreciate the wonders of nature, including insects. His entomological interests were strengthened and reinforced by the lectures of E.H. Strickland at the University of Alberta. He began his entomological career in 1951 as a student assistant on the biting fly project at Churchill, Manitoba, while attached to the Household and Medical Entomology Unit of Agriculture Canada. Later, he was stationed in Ottawa (1952-1957) and then in Guelph (1958-1964) where he pursued studies of the physiology and host seeking behaviour of mosquitoes in relation to their reactions to repellents. In 1964, Larry was transferred to the Saskatoon Research Station to continue the mosquito work, including mosquito morphology, physiology (including endocrine, nervous, and neuroendocrine systems), flight, and response to environmental stimuli. From 1971 until he retired, Larry was involved in investigations of pest insects of canola. He studied the life history, identity, and overwintering habits of flea beetles and the systematics of thrips. He established that the false chinch bug is a vector and flixweed is an alternative plant host of a yeast that infects commercial mustard crops. Larry served as Associate Head of the Entomology Section of the Saskatoon Research Station (1972-1981) and as president of the ESS in 1966. Larry is now in his late eighties but maintains interest and enthusiasm for the insects that cross his path, such as the field crickets that chirp cheerily by his front door. He also passes along information to his friends in response to their queries about various insects.



CAMERON, Malcolm Laurence

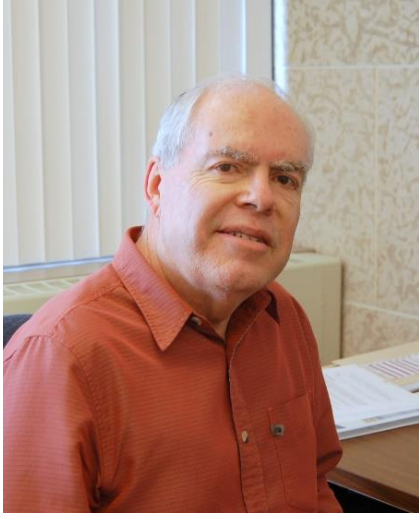
B.Sc. (1950), M.Sc. (1951) Dalhousie University;
Ph.D. (1953) University of Cambridge

Born: 23 October 1918

Retired: 30 June 1984

Died: 10 August 2011

Laurence taught physiology courses at the University of Saskatchewan in the Department of Biology between 1955 and 1965. During this time, he also continued his research on insect hormones, enzymes, excretory processes, and insect tissues. After his return to Dalhousie University in 1965, Laurence turned his attention from entomology to the history of medicine in medieval England, an interest that culminated in his book *Anglo-Saxon Medicine* (1993). This was the first book to make a comprehensive study of Old English medical texts. He also served as a co-editor of *The Old English Illustrated Pharmacopoeia* (1998). At Dalhousie University, Laurence founded what is now known as the Cameron Conference, an annual event that showcases the research of the Department of Biology's 4th year honours students.



CURRY, Philip Stephen

B.A. (1975), M.Sc. (1979) University of Saskatchewan

Born: 18 February 1950, Jasper Alberta

P.O. Box 1501, Station Main,
Moose Jaw Saskatchewan
SK S6H 7A8

Phil is a graduate of the University of Saskatchewan with an M.Sc. degree in Geography. His thesis and research was on mosquitoes, including their ecology and distribution in Saskatchewan and the North West Territories, and the various arboviruses they carry. Phil has also worked on the management of domestic and wild bees as pollinators and was a commercial beekeeper in the Melfort area. He has a keen interest in the current challenges and threats facing wild and domestic bee populations in North America.

Currently, Phil is the Zoonotic Diseases Consultant and West Nile Virus Coordinator for the Saskatchewan Ministry of Health and was the lead entomologist for Manitoba Health, Seniors and Active Living until 2015. In his role with both provinces, he has been actively involved in developing public health programs and response to various zoonotic diseases, including West Nile and other mosquito-borne viruses, Lyme and other tick-borne diseases, rabies, hantavirus, avian influenza, and swine influenza.

Phil is currently involved with the development and operation of the provincial tick surveillance program on behalf of the Ministry of Health in Saskatchewan. This program has been developed in cooperation with the University of Saskatchewan (Biology Department and the Western College of Veterinary Medicine), the Saskatchewan Health Authority, the Roy Romanow Provincial Laboratory, and the National Microbiology Laboratory in Winnipeg. This program includes passive and active monitoring for *Ixodes scapularis*, the primary vector for Lyme disease and the agents that cause anaplasmosis, babesiosis, and relapsing fever. Phil maintains an active interest in all things avian, equine, feline, and arthropod on an acreage north of Moose Jaw.



DOANE, John Frederick

B.S.A. (1954) Ontario Agricultural College; M.Sc. (1956), Ph.D. (1958) University of Wisconsin

Born: 14 April 1930, Newmarket Ontario

Retired: 1993

John developed an early interest in entomology as an amateur collector of insects in southern Ontario. He enrolled at the Ontario Agricultural College and specialized in entomology and later completed graduate studies in Entomology and Plant Pathology at the University of Wisconsin. He joined the Entomology Section of the Agriculture Canada Saskatoon Research Station in 1958 to investigate some aspects of the ecology and behaviour of wireworms. He has investigated the oviposition behaviour and fecundity of adults, effects of soil temperature and moisture on egg survival, response of wireworm larvae to carbon dioxide, and developed methods for trapping and monitoring of larval populations. In 1983, he initiated work on the biology and control of the wheat blossom midge in response to an outbreak of this pest. He later incepted biological control research to combat the Russian wheat aphid that invaded Saskatchewan in 1988. He was appointed the Head of the Integrated Pest Management (IPM) Section of the Saskatoon Research Station in 1982 and in 1989, after the amalgamation of the IPM and Cereals Sections, became Head of the newly formed Cereals Protection Section. John served as President of the ESS in 1967 and 1978 and was a member of the Governing Board of the ESC. John retired from the Agriculture and Agri-Food Canada Saskatoon Research Centre in 1993 and continues to live in Saskatoon.



ERLANDSON, Martin A.

B.Sc. (Hon.) (1976), M.Sc. (1979) University of Saskatchewan; Ph.D. (1984) Queen's University

Born: 21 October 1953, Outlook Saskatchewan

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martin.erlandson@canada.ca

Since 1990, Martin has continued his research at AAFC-Saskatoon on the interaction of pathogenic microbes with insect hosts. His main focus has been on baculoviruses infecting lepidopteran pest insects such as bertha armyworm, cabbage looper, and diamondback moth and he has made significant advances in baculovirus genomics and molecular pathogenesis. In collaboration with colleagues in the Netherlands, the virus genes essential for peroral infection of the insect midgut were identified and their role in host determination was investigated. The culmination of his baculovirus research resulted in the development and registration of a baculovirus for control cabbage looper for greenhouse and horticultural field crops. Martin has also worked extensively on insect molecular biology including digestive biology, structure and function of the peritrophic matrix, sex pheromones, and reproduction. The development of a series of molecular marker technologies for the identification of insect pests and their associated parasitoids has been applied to ecological and agronomic studies supporting classical biological control strategies for *Lygus* pests. Much of this research has been conducted in collaboration with graduate students in the Department of Biology and Department of Food and Bioproduct Sciences at the University of Saskatchewan where Martin is an Adjunct Professor. Martin is an active member of the ESS, and served as the President in 1990 and 2001 and as the Regional Representative for the ESS on the ESC Board of Directors from 2010-2013.



GILLOTT, Cedric

B.Sc. (Hons.) (1962), Ph.D. (1965), D.Sc. (1990)
Nottingham

Born: 7 March 1940, Sheffield United Kingdom

Retired: 30 June 1999

Department of Biology
University of Saskatchewan
112 Science Place
Saskatoon Saskatchewan
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Cedric.Gillott@usask.ca

Cedric continued to teach, conduct research, and serve on university committees until his retirement in 1999. Even in retirement, Cedric has remained active as a graduate student supervisor, as a member of graduate student advisory committees, as an occasional instructor in the graduate-level insect physiology course, and as a ‘go-to’ person for entomological queries received by the Department. He continued to author or co-author scientific publications, including two reviews in the prestigious *Annual Reviews of Entomology*. His undergraduate textbook, *Entomology*, saw further editions in 1995 and 2005. Cedric served additional terms as President of the ESS in 2002–2003 and 2009–2010, and has been actively involved with the ESC, notably as Chair of the Heritage Committee (2004–present) and Editor of the ESC Bulletin since January 2010. He was awarded the ESC Gold Medal in 2007 and elected as an Honorary Member of the ESC in 2016.



GOERZEN, David Wayne

B.Sc. (1975) University of Saskatchewan

Born: 20 September 1953, Saskatoon Saskatchewan

214 Candle Crescent
Saskatoon Saskatchewan
S7K 5A4

Wayne was born and raised in Saskatoon. His interest in wildlife biology led him to study at the University of Saskatchewan. Prior to receiving his B.Sc. in Biology, he spent four summers with National Parks Canada and the Canadian Wildlife Service, conducting waterfowl ecology-related research throughout Saskatchewan and Manitoba. Work on field research projects involving identification of aquatic invertebrates related to waterfowl feeding studies stimulated his interest in entomology. Wayne continued working with the Canadian Wildlife Service as a waterfowl ecologist until 1979, when he began work as in the Department of Biology at the University of Saskatchewan where his research as a field biologist focused on the ecology of the alfalfa leafcutting bee (*Megachile rotundata*). This work included an investigation of the parasitoid-predator complex associated with this species. In 1986, Wayne began work as a research scientist with the Saskatchewan Alfalfa Seed Producers Association. Since that time, based in the AAFC Saskatoon Research and Development Centre and at University of Saskatchewan (Innovation Place) in Saskatoon, he has conducted research to elucidate the microflora associated with the alfalfa leafcutting bee and has also undertaken extensive studies on the parasitology and pathology of the alfalfa leafcutting bee. Wayne has worked on the development of novel technology for control of parasitoids and diseases associated with alfalfa leafcutting bee populations, and has carried out studies to evaluate the effect of biocontrol agents on the alfalfa leafcutting bee as a non-target beneficial insect. Wayne has been a member of the ESC and ESS since 1986; he previously served as ESS Newsletter Editor, and is currently an ESS Auditor.



HALSTEAD, David A.

B.Sc. (1979) (Specialization) Zoology; M.Sc. (1993) Geography, University of Alberta; Prof. of Biology

Born: 13 May 1955, Calgary Alberta

halstead@saskpolytech.ca

David was born and raised in Calgary, but owes much of his interest in entomology to childhood summers at Lake Winnipeg. His career path was further decided by curricular choices in favour of entomology and limnology while at the University of Alberta. After acquiring a B.Sc. in Zoology, David was hired by Aquatic Environments Ltd. to sample and identify aquatic insects for various biomonitoring contracts throughout northern Alberta and Northwest Territories. Many of these contracts involved oil sands related research in the Fort McMurray region of Alberta. David then went on to conduct aquatic investigations in the trout-producing watersheds of Alberta's Grand Prairie Forest as part of the Deep Basin Research Program for Alberta's Scientific and Engineering Services Division. This was followed by a return to academia in 1988, subsidized in part by continued employment with various Edmonton-based consulting companies through the late 1980's and early 1990's. David's M.Sc. research into geomorphic influences on boreal stream fish assemblage structure helped ignite a secondary interest in landscape ecology. David then moved to Saskatchewan and took on the role of Instructor in Natural Resource Technology, first for the Meadow Lake Tribal Council in 1993, and later for Saskatchewan Institute of Applied Science and Technology (now Saskatchewan Polytechnic) in Prince Albert in 1995. Although always supportive of student research, David considered research opportunities in a whole new light when Saskatchewan Polytechnic adopted an applied research mandate in 2011. Many of his early research projects focused on aquatic ecology and entomology. In 2016, David assumed the role of Research Chair in the School of Natural Resources and Built Environment at Saskatchewan Polytechnic. David is coauthor of *Dragonflies and Damselflies in the Hand: An Identification Guide to Boreal Forest Odonates in Saskatchewan and Adjacent Regions*. He served as the Acting President of the ESS in 2014, and as President in 2015.



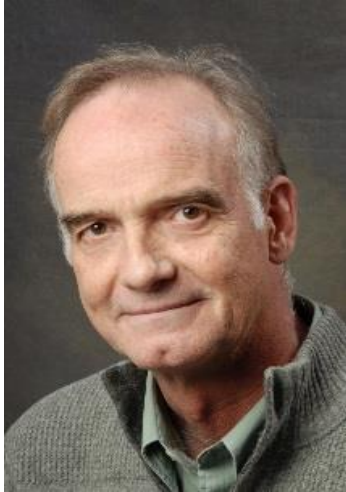
HARRIS, Stephanie

B.Sc (1995) University of Saskatchewan

Born: July 1973, Edmonton Alberta

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Agriculture and Agri-Food Canada
107 Science Place
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S7N 0X2

Stephanie was raised on her family's farm near Landis, Saskatchewan, where her early interest in plants and animals was fostered. After graduating from Landis High School, she enrolled in Arts and Science at the University of Saskatchewan and was fortunate to be hired as a summer student at the Saskatoon Research Centre in the summers of 1994 and 1995. After completing her degree in biology she returned to the Saskatoon Research Centre to begin her career as a research technician. Her early work in entomology at the AAFC Saskatoon Research Centre focused on behavioural studies and the competitive interactions of various Hymenoptera egg parasitoids of bertha armyworm. Stephanie's focus later shifted to the study of *Bacillus thuringiensis* and baculoviral infections in *Trichoplusia ni* and bertha armyworm, more specifically the susceptibility of Lepidopteran midguts to these pathogens. Stephanie is a life member of the ESS and enjoys visiting classrooms to introduce children to the fascinating world of insects.



HARTLEY, Scott Kelvin

B.Sc. (Adv.) (1987) University of Saskatchewan

Born: 8 May 1955, Swift Current Saskatchewan

Saskatchewan Ministry of Agriculture
125 – 3085 Albert Street
Regina Saskatchewan

After completing high school in Swift Current, Scott attended the University of Saskatchewan studying biology with an interest in oceanography. His interest in insects developed with entomology classes (aquatic and terrestrial) and collecting insects while working as a summer student with Agriculture and Agri-Food Canada in Swift Current. His experience with plant breeding with AAFC and the Crop Development Centre (University of Saskatchewan) led to a hiatus from insects with a position with C.I.D.A.'s Zambia-Canada Wheat Breeding Project in southern Africa. Upon returning to Canada, he returned to various entomological and biodiversity research projects at the AAFC Saskatoon Research Centre, including developing an economic threshold for grasshoppers in lentils. Through private contracts Scott conducted insect research with grasshoppers and coordinated the fall wheat midge surveys in Saskatchewan from 1993 to 1997, collecting data for annual wheat midge risk maps. During this period, the survey was expanded to include most of the grain growing regions of Saskatchewan. He also conducted the first provincial wheat midge surveys in Manitoba from 1995 to 1997. In the spring of 1998, Scott took the position of “Provincial Entomologist” (Insect and Vertebrate Pest Management Specialist) with the Saskatchewan Ministry of Agriculture in Regina, where he worked until January 2018, when he took over management of the Crop Protection Laboratory.



HEGEDUS, Dwayne D.

B.Sc. (1988), M.Sc. (1991), Ph.D. (1995) University of Saskatchewan

Born: Wakaw Saskatchewan

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107 Science Place
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S7N 0X2

dwayne.hegedus@canada.ca

Dwayne was raised on the Hegedus family farm near Wakaw, Saskatchewan. Perhaps tired of his father's complaints about low grain prices and of picking stones, he enrolled at the University of Saskatchewan in 1984. He obtained a B.Sc. degree in Microbiology and Immunology and M.Sc. and PhD. degrees in Applied Microbiology while studying the mechanisms used by entomopathogenic fungi to infect and kill grasshoppers. Aided by an NSERC Fellowship, he conducted postdoctoral research at the University of British Columbia, developing genetic systems to control insect populations. While there, Dwayne co-developed a technology to produce proteins in cultured insect cells which is now widely used by the pharmaceutical industry to screen new drug targets. In 2018, he was awarded the AAFC Prize for Outstanding Achievement in Science for his contributions to this work. In 2005, Dwayne received the C. Gordon Hewitt Award from the ESC for outstanding achievements in entomology by a young scientist. Dwayne joined the AAFC Saskatoon Research Centre in 1997 as Insect Biotechnologist and conducts research on insect digestive systems, insect genomics, and insect-host plant interactions. He was Treasurer of the ESS for 20 years (1998-2018).



HOLLOWACHUK, Jennifer

B.Sc. (1996) University of Saskatchewan

Born: 4 September 1973, Wynyard Saskatchewan

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Saskatoon Saskatchewan
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jennifer.holowachuk@canada.ca

Jennifer obtained her Bachelor of Science degree in biology from the University of Saskatchewan in 1996. After graduation, a short-term contract at the AAFC Saskatoon Research Centre working on flea beetle feeding deterrence turned out to be the start of a long-term career in entomology. Jennifer has worked on developing a trichome-enhanced canola line to deter flea beetle feeding that was tested in field conditions. She was involved in a study of the genetic diversity of bertha armyworm across the prairie provinces. She has worked on developing molecular diagnostic tools for identifying cutworm species and parasitism rates in midge. In recent years, working with Boyd Mori, Jennifer participated in the annual survey of canola fields in Saskatchewan looking for a newly discovered insect on the prairies, *Contarinia brassicola*. Jennifer has also worked with Boyd to investigate the population genetics of this species of midge.



KAYE, Taylor Matthew

B.Sc. (2017) Agriculture, University of Saskatchewan

Born: 18 July 1993

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Agriculture and Agri-Food Canada
Saskatoon Saskatchewan
S7N 0X2

taylormkaye@gmail.com

Following the completion of high school in Saskatoon, Saskatchewan, Taylor attended the University of Saskatchewan obtaining an undergraduate degree in agriculture. Throughout his university career he worked as a summer student for Owen Olfert at the AAFC Saskatoon Research and Development Centre. It was during this time that Taylor developed an interest in entomology. Taylor worked on monitoring programs for various pests across Saskatchewan, including bertha armyworm, grasshoppers, and cabbage seedpod weevil. After completing his undergraduate degree in 2017, he went on to work at the Centre for Agriculture and Bioscience International (CABI) in Delémont, Switzerland for the summer. At CABI he worked with Tim Haye researching the host range of *Trissolcus japonicus*, a parasitic wasp of the invasive brown marmorated stink bug. After returning to Canada, he began working as a technician with Tyler Wist at the AAFC Saskatoon Research and Development Centre, working with wheat midge to establish a colony for future research projects. Taylor's current interests lie in computer science and its application to insect population modelling and monitoring automation.



KOZIAL, John

Dip. Agr. (1980) University of Saskatchewan

Born: 6 October 1960, Tisdale Saskatchewan

P.O. Box 35
Bjorkdale Saskatchewan
S0E 0E0

John retired in 2016 from his grain farm near Bjorkdale, in central northeast Saskatchewan. He has had a lifelong interest in insects. After a visit to the Royal Museum of Natural History (RMNH) in Regina, in 1975, he was so inspired by viewing his first scientifically curated insect collection that he resolved to begin his own collection. In 1980, with an invitation to join the ESS from Alf Arthur, he attended the Society's annual fall meeting in Saskatoon and met Ronald R. Hooper, the author of *Butterflies of Saskatchewan*. This was a milestone moment in John's life as he and Ron became lifelong friends, sharing a mutual passion for collecting and studying insects. John would report annually to Ron any new, unusual or rare insect species and any new range extensions. Rare or new Saskatchewan insect specimens were donated to the RMNH. John has collected 120 species of Saskatchewan's approximately 150 known butterflies and, since 1975, collected an additional 450 species of moths in his farm yard. In earlier years, John gave numerous talks, showed insect slides and displayed his collection for many schools, hobby shows, and local natural history societies. In 1990, he spent three weeks collecting in Costa Rica. In 1992 John was presented with the Norman Criddle Award for "excellence in amateur entomology" from the ESC. John still resides on the farm, maintaining a string of light traps, and concentrating his collecting, studying, and photographic efforts in the Pasquia and Porcupine Hills in the Hudson Bay region. He has accumulated a large personal insect collection (120+ Cornell drawers) of Saskatchewan and tropical insects which will eventually be donated to the RMNH. John has passionately collected insects for 43 years and hopes to happily continue doing so long into his retirement.

KUSTERS, Peter Martin

B.A. (Hon.) (1977) Queen's University; M.P.M. (1986) Simon Fraser University

Born: 30 November 1954, Kingston Ontario

Retired: 01 January 2015

Peter grew up in Lanark, Ontario, where he also received his initial education. After finishing high school, Peter went to Queen's University (1973-1977) and majored in geography. With no job in sight, he attended Sir Sanford Fleming College, Lindsay, Ontario (1977-1979) and graduated as a Forest Technician. It was here that he developed a keen interest in entomology while making his first insect collection during an entomology course. He remained at the College for one year to teach Forest Entomology and Forest Pathology and became immersed in identifying hundreds of insect specimens collected by the students enrolled in the course. He arrived in Saskatchewan in 1981 but soon afterward was accepted to the Master of Pest Management program at Simon Fraser University. The summer of 1982 was spent with Lloyd Harris and the Saskatchewan Department of Agriculture where he gained experience in the identification and control of field crop insects. In 1983, Peter joined the Agriculture Canada Saskatoon Research Station as a research technician assisting F.J.H. Fredeen with investigations of blackflies in Saskatchewan. After Fredeen retired in 1985, Peter continued this work with Peter Mason and eventually shifted his area of expertise to biological control, especially of insects attacking canola. Following Peter Mason's move to Ottawa, Peter began working for the Plant Gene Resources of Canada (PGRC) in April 1998. The PRGC is a depository for the germplasm of agricultural plants and is located within the AAFC Saskatoon Research and Development Centre. Peter retired early in January 2015 and no longer practices entomology.



LARSON, David J.

B.Sc. (1965), M.Sc. (1968) University of Alberta;
Ph.D. (1974) University of Calgary; B.Ed. (1977)
University of Saskatchewan

Born: 1945
Retired: 2004

P.O. Box 56,
Maple Creek Saskatchewan,
S0N 1N0

dmlarson@sasktel.net

David has always been interested in natural history, with encouragement from his parents and then by Ruby Larson and her entomological colleagues at the Lethbridge Department of Agriculture, Science Service Lab during high school. David's post-secondary training took place at various prairie universities. From 1974 to 1976, he worked as a fisheries ecologist for the Government of Saskatchewan, investigating effects and mitigation of forestry practices on forest streams. David spent the majority of his career as a professor in the Department of Biology at Memorial University in St. John's, Newfoundland (1977 to 2004). David's principal research interests were in the biology of diving beetles (Coleoptera: Dytiscidae) and his work on the North American fauna is summarized in *Predaceous Diving Beetles of the Nearctic Region* (Larson, Alarie and Roughley, 2000; NRC Research Press). Shorter-term studies were also conducted on the dytiscid faunas of Australia, Papua New Guinea, and East Africa. Other research areas included aquatic entomology and the faunistics of the Island of Newfoundland. David encouraged students to follow their entomological interests and several are now prominent scientists in the Canadian entomological community.

After retirement, David moved to a small ranch on the north slope of the Cypress Hills, near Maple Creek where he is investigating the biota of the southern Canadian Prairies with special interests in beetles and true bugs. He has developed a reference collection of insects found in the region. Identification guides and summaries of the biology of select groups have been published on the ESS website and in the *Canadian Journal of Arthropod Identification*. He is also interested in the changing prairie environment including effects of the rose stem girdler (Coleoptera: Buprestidae) on plant communities of the natural prairie remnants.



MASON, Peter George

B.Sc. (1975) Guelph; M.Sc. (1978),
Ph.D. (1983) University of Saskatchewan

Born: 9 November 1952, Niagara Falls Ontario

Ottawa Research and Development Centre
Agriculture and Agri-Food Canada
960 Carling Avenue
Ottawa Ontario
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peter.mason@canada.ca

Peter was raised in Clarkson (now part of Mississauga), Ontario. From an early age he was interested in natural history. During his undergraduate years at the University of Guelph he discovered entomology through the infectious enthusiasm of D.H. Pengelly and his graduate students R.E. Roughley and J.T. Huber. In 1975, Peter relocated to Saskatoon for graduate studies on the systematics and ecology of Chironomidae in the Saskatchewan River under the supervision of D.M. Lehmkuhl. In 1983, he joined AAFC, initially working with A.P. Arthur on biological control of oilseed pests, and from 1985 leading research on black fly ecology and management until returning to biological control research in 1992. During 1993-1995 Peter was on work transfer to Montpellier, France, to strengthen international biological control partnerships with the United States Department of Agriculture and the Centre for Agriculture and Biosciences International (CABI). In 1998, he was relocated to the AAFC Ottawa Research Centre to develop a biological control research program, oversee national arthropod importation activities, interface with regulatory authorities, and maintain international activities in this field with CABI. His research has focused on developing risk assessment protocols for exotic biological control agents and introducing parasitoids against leek moth and cabbage seedpod weevil. Among his numerous publications, Peter co-edited the 4th and 5th volumes of the *Biological Control Programmes in Canada* series and is a coauthor of the *Guide for the First-time Importation and Release of Arthropod Biological Control Agents in Canada*. Peter was President of the ESS in 1985-1986, President of the ESC in 2010-2011, is an honorary member of the International Organization for Biological Control, and received the Gold Medal of the Entomological Society of Canada at the 2019 Joint Annual Meeting in Fredericton.



MATHESON, Mary

Diploma (1982) (Agriculture, Plant Science)
Nova Scotia Agriculture College; B.Sc. (1984),
M.Sc. (1988) MacDonald Agricultural College,
McGill University

Born: 21 May 1961, Souris Prince Edward
Island

Pest Management Regulatory Agency
Health Canada
2720 Riverside Drive,
Ottawa, Ontario

mary.matheson@canada.ca

In 1987, Mary and her husband moved to Saskatoon, where the latter pursued post-graduate studies at the University of Saskatchewan. In January 1988, Mary began work with AAFC at the Saskatoon Research Station, as a research technician. Presently, Mary is working as a Senior Evaluator in the Re-evaluation and Use Analysis Section, Value Assessment & Re-evaluation Management Directorate, Pest Management Regulatory Agency (PMRA), of Health Canada and is living in Ottawa, Ontario.



MCINTOSH, Rory Lachlann

B.Sc.F. (1986) University of New Brunswick; M.Sc. (1995), Ph.D. (1997) University of British Columbia

Born: 30 October 1955, Gosport England

Saskatchewan Ministry of Environment
Forest Service Branch
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Prince Albert Saskatchewan
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(306) 981-2263

rory.mcintosh@gov.sk.ca

Since 1978, Rory has worked in forestry and entomology in Germany, England, and across Canada. Rory emigrated to Canada in 1981 to study forestry at the University of New Brunswick. In the summers, he worked on spruce budworm, *Choristoneura fumiferana*, and jack pine budworm, *C. pinus*, monitoring and control systems in the pheromone research group at the New Brunswick Research and Productivity Council. In 1990, Rory went west to the University of British Columbia (UBC) to do his M.Sc. research on ambrosia beetles, *Trypodendron lineatum*, in the log booms of coastal BC. Rory remained at UBC to complete his doctorate studying the bionomics of the white pine (spruce) weevil, *Pissodes strobi*. After completing his research at UBC, Rory conducted postdoctoral research in chemical ecology of wood-boring insects at the Centre for Pest Management at Simon Fraser University. During this time, Rory lectured in undergraduate and graduate forest entomology courses. In 2000, Rory moved to Saskatchewan to start work as the Provincial Forest Entomologist and Pathologist in the Saskatchewan Ministry of Environment's Forest Service. Based in Prince Albert, he leads the provincial insect and disease program focusing on management of Dutch elm disease, spruce budworm, and the mountain pine beetle, *Dendroctonus ponderosae*. In addition to his work for the Ministry, Rory has served as an adjunct professor in the Department of Entomology at the University of Manitoba, and currently serves as an adjunct professor in the School of Environment and Sustainability (SENS) at the University of Saskatchewan.



MELNYCHUK, Nancy

B.Sc. (1988), M.Sc. (1999) University of Saskatchewan

Born: 11 September 1965

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Agriculture and Agri-Food Canada
107 Science Place
Saskatoon Saskatchewan
S7N 0X2

nancy.melnichuk@canada.ca

Nancy graduated from the University of Saskatchewan in 1988. During the last year of her undergraduate program, a class in entomology led to a summer job with the Alfalfa Seed Producers. The work included a research project comparing leafcutter bee shelter designs and monitoring insect populations in alfalfa seed fields. She was hired in a term position in 1991, working for the Forage Section at the Saskatoon Research Station. That led to other term positions with the Cereal Protection Section working for John Doane and Owen Olfert. In 1994, the opportunity arose to work on an M.Sc. project examining the effect of farming systems on insect populations. Upon completion of her M.Sc. degree, Nancy spent two years working on the Prairie Pest Monitoring Network project before leaving entomology for a permanent position with Plant Gene Resources Canada. In 2010, she returned to working with Owen Olfert, again on the Prairie Pest Monitoring Network, a long-term project based out of the AAFC Saskatoon Research and Development Centre. Upon Owen Olfert's retirement in 2018, Nancy was transferred to work with Tyler Wist on his entomology projects, including cereal aphid and wheat midge management.



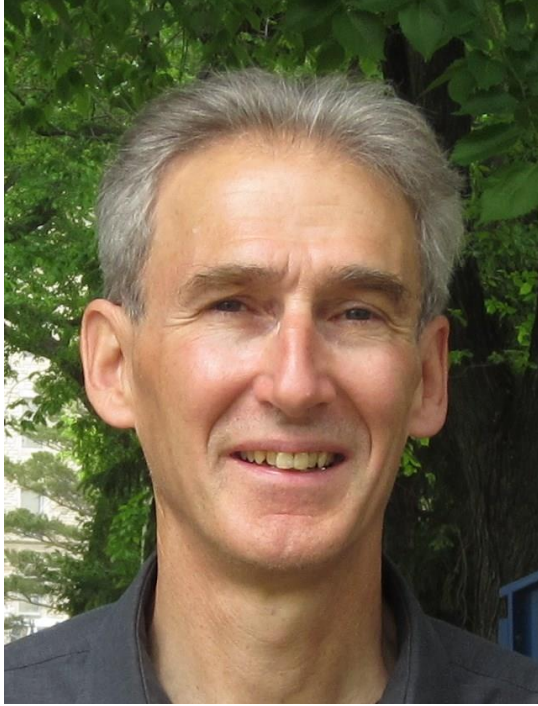
MOHR, Nina Angelika

BSA (1983), M.Sc. (1985) University of Manitoba

Born: 17 August 1961

nina.mohr@usask.ca

After high school, Nina enrolled in the Agriculture Program at the University of Manitoba. In her second year of undergraduate studies, she met the wonderful Cameron Jay, who introduced her to entomology and then later took her on as a graduate student. Under the guidance of Cameron Jay, Nina had the opportunity engage in research on various topics such as nesting in leafcutter bees, overwintering losses, *Nosema* in honey bees, and of course, pollination and nectar collecting behaviour of honey bees. This led to an on-going interest in insect behaviour that she further explored at the Universities of Guelph and Saskatchewan. Nina has also always had an interest in teaching. Among the various classes that she has taught, her favourite teaching assignments have been to teach entomology to agriculture students, horticulture students, and gardeners.



MOORE, Keith C.

Dip. Biol. Sci. Tech. (1975) Saskatchewan Institute of Applied Science and Technology, Kelsey Campus

Born: 3 November 1955, Saskatoon Saskatchewan

Retired: 2011

1120 Elliott Street,
Saskatoon Saskatchewan
S7N 0V3

Keith was employed by AAFC from 1979 (the Saskatoon Research Station era), until his retirement in 2011 (the Saskatoon Research Centre era). His research focused on many aspects of entomology. Earlier work focused on insect olfaction, feeding behavior, and nutrition. Later studies involved aspects of biological control, including fungal and viral pathology, host plant resistance, insect cell culture, pathogen characterization, and bioassays. He participated in the ESS sponsored arthropod survey of Grasslands National Park (1987-1989), oversight of local arrangements for ESS/ESC Joint Annual Meetings in 1992, 1999, 2007, and 2014, and has been active in public education throughout his career. Keith served as the President of the ESS in 1987 and as Regional Representative for Saskatchewan on the ESC Board of Directors from 1994-1996. In retirement, Keith continues to have a keen interest in nature, and the life sciences.



MURRELL, Dorothy

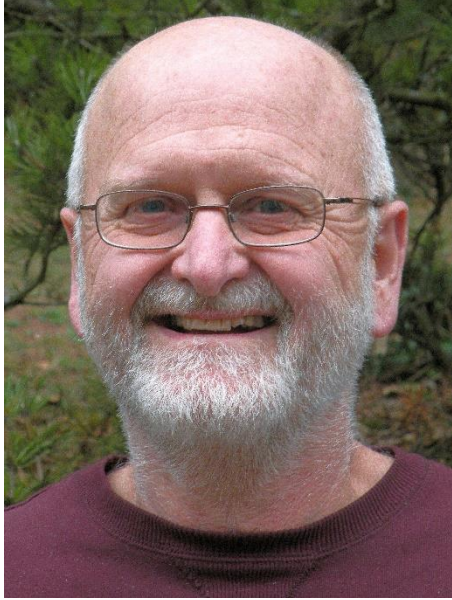
Born: Vancouver British Columbia

B.Sc. (1975) Simon Fraser University; M.Sc. (1980) University of Guelph

Dorothy was raised a city girl in Vancouver, B.C., After a brief sojourn as a flower child, Dorothy completed a B.Sc. in biology at Simon Fraser University, supporting her education with summer jobs at the Range Research Station in Kamloops and the B.C. Ministry of Agriculture office in Cloverdale, B.C., She became interested in honey bees while living in Cloverdale, and completed an M.Sc. in entomology with emphasis on crop pollination at the University of Guelph. Her honey bee interests led to a year with CUSO where she investigated beekeeping with *Apis cerana* as a potential village-level industry in Bangladesh.

Dorothy moved to Saskatchewan in 1982 to begin work with the provincial government as a honey bee, leafcutter bee and forage seed specialist. She supported the growth of the leafcutting bee and alfalfa seed industries to an estimated value of \$50 million annually to the Saskatchewan economy. In 1997, Dorothy moved to Nipawin to join Newfield Seeds Company Ltd., which was one of Canada's major forage seed companies at that time, with annual gross sales of \$40 million. Dorothy acted as product manager and was responsible for seed production and procurement. In 2000, Dorothy moved to Saskatoon to develop the R&D arm of Svalöf Weibull AB, Newfields' Swedish parent company. There, she was responsible for business management, out-licensing and early generation seed production.

From 2007 to 2011, Dorothy was Managing Director of the Crop Development Centre at the University of Saskatchewan. There, she worked closely with plant breeders in wheat, durum, barley, oat, pea, lentil, chickpea, bean, canaryseed, and flax. Her role encompassed management of financials, strategy, resources, and commercialization. Dorothy recently served the University of Saskatchewan as Project Director of the Livestock and Forage Centre of Excellence.



OLFERT, Owen O.

B.Sc. (1973), B.S.A. (1975 Honours), Ph.D. (1979)
University of Saskatchewan

Born: 31 July 1948, Swift Current Saskatchewan

Retired: 01 June 2018

Saskatoon Research and Development Centre
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Owen grew up on the family farm in southwestern Saskatchewan. He received his elementary education in Iris, and high school in Wymark, graduating in 1966. After some time working in the oil fields, he enrolled at the University of Saskatchewan, graduating in 1973. Upon return from Germany as an exchange student, he was accepted into the College of Agriculture, and graduated in 1975. Owen's interest in entomology was stimulated as an undergraduate student in the 1970s and culminated in a doctoral program in which he quantified the defoliation of cereal crops by grasshoppers, providing a baseline study of the economics of grasshopper damage. In 1979, Owen began his career as a research scientist with AAFC at the Saskatoon Research Station. As an insect ecologist, Owen's interests involved integrated pest management (IPM) tactics for insects in extensive agriculture systems, including monitoring and forecasting tools, alternative control, and host plant resistance. He developed large-scale monitoring programs and spatial analysis techniques to implement risk forecasts for insect pests. He was also a founding member of a long-term, multi-disciplinary alternative cropping systems study. In 1983, Owen joined a team developing management strategies for wheat midge and played a key role in developing a comprehensive IPM program for this pest. Upon returning from sabbatical at the University of New England in Armidale, Australia, he extended his knowledge and expertise in insect ecology to bioclimatic modelling. This research initiative resulted in the first assessments of the impact of climate change on insect pests of agriculture in Canada.



OLIVIER, Chrystel Yvonne

B.Sc. (1985) Université d'Orsay; M.Sc. (1987)
Campus Universitaire de Jussieu; Ph.D. (1993)
Université de Bourgogne

Born: December 1963, Bühl Germany

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Chrystel completed her M.Sc. in environmental toxicology in 1987 and became interested in insects and their complex relationships with the environment. After two years spent in the Democratic Republic of the Congo working as an entomologist for a forestry company, she decided to pursue a career in entomology. Her Ph.D. in Dijon (France) fulfilled her interest in multitrophic relationships involving insects, with a project on interaction between the *Flavescence dorée*, a phytoplasma devastating the European vineyards, and its insect vector, the leafhopper *Euscelidius variegatus*. Her Ph.D. focused on understanding cellular attachment of phytoplasma to leafhopper organs, using immunolabeling techniques and electron microscopy. Chrystel continued to work on phytoplasma diseases when she joined the AAFC entomology team at the Saskatoon Research Centre in 2001 to work on epidemiology and management of Aster yellows (AY), a phytoplasma disease occurring in many crops grown in Canada. Chrystel's main research interest is to better understand the life cycle of AY in canola and cereal crops grown in the Canadian prairies and to develop sustainable control methods for this disease. Other research interests include epidemiology of phytoplasma diseases in perennial plants and development of biopesticides to control insect pests and diseases in canola crops.



ORAM, Ryan Jeffrey

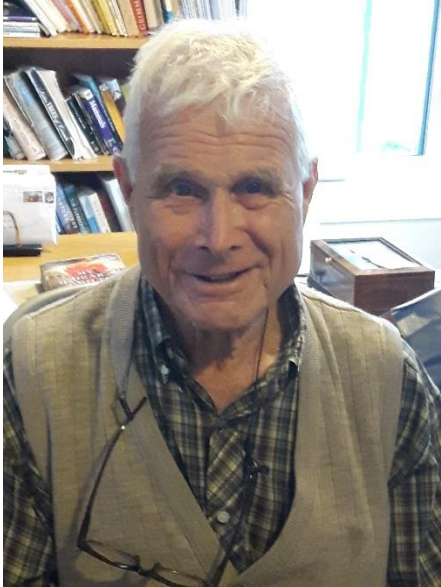
B.Sc. (Hon.) (2016) Memorial University; M.Sc. (2018) University of Regina

Born: 1 October 1993

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After completing his high school studies in Pasadena NL, Ryan decided on a career in entomology, one that started when working at the Newfoundland Insectarium the summer before university. He continued his path by working at the Agriculture and Agri-Food Canada Research Station in St. John's as a summer student in the entomology lab, where he also conducted his Honours degree research as part of his undergraduate program at Memorial University. This work focused on pollination of squash plants in the area around the research station. Upon completing his Honours B.Sc., Ryan continued his education by moving to Regina and completing an M.Sc. program studying insect taxonomy, one of Ryan's passions. For this work, he focused on revising the taxonomy of *Hylaeus*, a small group of cryptic black and yellow bees, within Canada. Ryan completed his graduate studies while simultaneously starting work at the Royal Saskatchewan Museum as the Curatorial Assistant of Invertebrate Zoology. While working on the expansion and organization of the invertebrate collection at the Royal Saskatchewan Museum, Ryan continues to do work on revising the Canadian species of *Hylaeus*, as well as expanding this research to the *Hylaeus* of North America north of Mexico.



PESCHKEN, Diether Paul

B.Sc. (1959), M.Sc. (1960) University of Manitoba; Ph.D. (1964) Goettingen

Born: 3 April 1931, Cologne Germany

Retired: 1993

Diether attended elementary schools in Cologne and completed his secondary education in the Bismarck Gymnasium in Karlsruhe, Germany, in 1950. After a one-year stint in Skaneateles, NY, on a Rural Teenager Exchange program, he immigrated to Canada in 1952. He worked on several farms and in the bush for two and a half years and finally reached Manitoba where he decided on an education in agriculture, receiving two degrees in agriculture and entomology, respectively, by 1960. He returned to Germany to complete a doctoral program in which he studied the orientation behaviour of adult aphidophagous hover flies when in search of food. In 1964, he joined the staff of the Entomology Research Institute, Belleville, Ontario, to work on the biological control of Canada thistle and St. John's wort. In 1972, after the closure of the Belleville Laboratory, Diether transferred to the AAFC Regina Research Station where he began biological control studies of sow thistle, bladder campion, and scentless chamomile. Eventually five insects were screened for use against Canada thistle, three against sow thistle, and one to control bladder campion. To date, only three insects have become established; the others have vanished and the weeds are still relatively abundant. He also studied the adaptation of the St. John's wort beetle, *Chrysolina quadrigemina*, to winter cold in the interior of British Columbia. Diether completed a study of the economic losses caused by weeds and the favourable suitability of scentless chamomile for control with insects in the late 1980s. One year before retirement, Diether collaborated with Alec McClay to publish an analysis of projects in biological control of weeds and proposed a system for selecting weed targets most amenable to successful control. Diether retired in 1993, but continued working part time for one year to complete publication of his research results. He served as Secretary (1976-1982) and President (1989) of the ESS.



PHILLIPS, Iain

B.Sc. (2004) University of Regina; M.Sc. (2006) University of Alberta; Ph.D. (2017) University of Saskatchewan

Born: 3 March 1981, Saskatoon Saskatchewan

Water Security Agency
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Iain spent the first years of his life in Cumberland House, Saskatchewan, before moving to Lumsden, Saskatchewan, to attend public school and then enrolling in biology at the University of Regina. He developed his interests in entomology through independent projects on carabid beetles through his summer research positions in the Department of Renewable Resources at the University of Alberta during his undergraduate degree. Immediately after completing his undergraduate program, Iain enrolled in a Masters program in the Department of Biology at the University of Alberta, focusing on aquatic insect community ecology and crayfish. His interest in aquatic entomology allowed him to obtain a research scientist position with the Saskatchewan Watershed Authority (now the Water Security Agency) in Saskatoon in 2006, where he has been developing biomonitoring tools for waterbodies of the Northern Great Plains. Iain subsequently completed his doctoral studies in Saskatoon focusing on the material underlying his work in biomonitoring, specifically, the influence of underlying abiotic characteristics of waterbodies on benthic macroinvertebrate communities and how to translate these constraints into effective ecosystem health measures to detect human impact. Iain is a founding member of the Troutreach Saskatchewan program with the Saskatchewan Wildlife Federation that trains young aquatic entomologists. He has served as the Secretary of the ESS since 2010.



PRAGER, Sean Michael

B.A. (2000) Clark University; Ph.D. (2008) Brock University

Born: 25 April 1978, Summit New Jersey

Department of Plant Sciences
University of Saskatchewan

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Sean was born and raised in New Jersey, USA. From childhood he had an interest in both science and geography and pursued both of these interests during his undergraduate studies at Clark University. There, he had the opportunity to study mosquito ecology in the laboratory of Todd Livdahl and spider ecology with Douglass Morse. Later, he served as a research assistant working with stalk-eyed flies at the University of Maryland. These various experiences gave him an appreciation for insect diversity and also for how insects can be used as study systems for ecology and evolution. Sean went on to earn a Ph.D. from Brock University in Ontario, working primarily on the behavior of carpenter bees. This was followed by post-doctoral studies of aphid parasitoids and various Texas field crop pests. Sean performed extensive work on potato/tomato psyllids, which he studied in the Department of Entomology at the University of California, Riverside. In 2017, Sean became the first entomologist in the history of the College of Agriculture and Bioresources at the University of Saskatchewan in Saskatoon.



RANDELL, Robert Latham

B.Sc. (Ag) (1958); M.Sc. (1960); Ph.D. (1963) McGill University

Born: 20 May 1937, Vancouver British Columbia

Retired: 30 June 2005

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Bob was appointed as a research scientist at the Agriculture Canada Research Station, Saskatoon, in 1964, working alongside Paul Riegert, Roy Pickford, and Mukul Mukerji in the grasshopper biology and management section. In 1970, Bob joined the Department of Biology, University of Saskatchewan, where he was to spend the remainder of his working career. From 1970 to 1973, Bob was the Ecosystem Analyst, Director of Data Processing, in the Matador Project, a component of the Canadian Committee for the International Biological Programme. In the Department of Biology, Bob taught in a wide range of courses, including General Biology, Animal Structure and Function, General Entomology, Economic Entomology, Quantitative Biology, Modelling Techniques, Honours Field Course, and (for the School of Agriculture) Insect Identification and Control. Bob's early research focused on the taxonomy of Orthoptera, but following his move to Saskatoon, more emphasis was placed on grasshopper population dynamics, especially factors affecting embryonic development and egg hatching, and the development of predictive models for estimating population trends and hence damage potential. Bob was a long-time member of the ESS, serving as its Treasurer in 1967–1968 and President in 1969–1970. He was also a member of the ESC, Société d'entomologie du Québec, and several international entomological societies.



RONEY, Keith Norman

B.A. (1970) University of Saskatchewan, Regina Campus

Born: 7 February 1948, Regina Saskatchewan

Retired: 2006

Regina, Saskatchewan

Keith's first exposure to entomological research occurred in 1967-1969 as a summer student at the AAFC Saskatoon Research Station. He assisted with investigations of the distribution and control of the sweet clover weevil under the direction of C.H. Craig. In 1971, he joined the staff of the Saskatchewan Museum of Natural History (now the Royal Saskatchewan Museum) in Regina. His first years at the museum were dedicated to the establishment of nature trails and a park naturalist program in the provincial parks. Later, he conducted research on the status and food habits of the white pelican and double-crested cormorant in the province. Largely through his efforts and initiative, legislation was established to provide protection for pelican and cormorant colonies in Saskatchewan. Keith conducted many insect collecting trips, especially with Ron Hooper, adding to the provincial distribution and species records for the province. Some of his interesting finds included the first North American specimen of the spider *Araniella proxima* collected at Peter Pond Lake on 10 July 1989. Other notable specimens included provincial specimens of *Cicindella hirticollis athabascensis* on the south shores of Lake Athabasca, *Bembidion* sp. found on the mounds of black-tailed prairie dogs in the southwest and some Solifugidae specimens in the southwest part of Saskatchewan that, to his knowledge, have not yet been described. As Curator of Life Sciences, Keith continued to add specimens to the provincial collection and improve upon its value to the province's entomological knowledge and provide a valuable resource for other researchers. As curator, he also was instrumental in assisting with the planning and redevelopment of the Life Sciences Gallery which was completed in 2001. Keith retired in 2006.



SHEFFIELD, Cory Silas

B.Sc. (Hon) (1994), M.Sc. (1998) Acadia University;
Ph.D. (2006) University of Guelph

Born: 31 October 1971, Windsor Nova Scotia

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Cory grew up in Nova Scotia's Annapolis Valley, and always had a love of science, natural history, and the outdoors. Cory's career in biology began as an undergraduate at Acadia University in Wolfville, though his first interest was with plants. However, his Honours thesis research on lowbush blueberry pollination and pollinators forever made him an entomologist, with a love of bees and wasps. Cory completed his M.Sc. degree at Acadia University in cooperation with the AAFC Kentville Research Centre, on the biology and management of *Lygus lineolaris*, though he continued to research bees and pollination. After time off working as an IPM scout in Nova Scotia, Cory started his doctorate research at the University of Guelph on apple pollination and pollinator diversity in Nova Scotia. Upon graduation in 2006, he began a postdoctoral fellowship in bee taxonomy at York University, then worked as a research associate at York University with the NSERC-funded Canadian Pollination Initiative (CANPOLIN). In 2012, Cory became the Curator of Invertebrate Zoology at the Royal Saskatchewan Museum in Regina, where he studies taxonomy, ecology and conservation of bees and other Hymenoptera, and pollination, among other things. In 2014, he co-led an apple pollination workshop for the United Nations in Nepal. In 2015, he was awarded the C. Gordon Hewitt Award by the ESC. He served as the President of the ESS in 2016-2017, is the current President of the Biological Survey of Canada, serves on the Editorial Boards of *The Canadian Entomologist* and *Journal of Melittology*, and on the Arthropods Specialist Subcommittee of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).



SOROKA, Juliana Judy

B.Sc. (Hon.) 1975 University of Saskatchewan; M.Sc. (1984), Ph.D. (1989) University of Manitoba

Born: 18 January 1953, Smeaton Saskatchewan

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Julie was raised on a farm in northeastern Saskatchewan. After completing her Bachelor's degree, Julie was hired by Environment Canada as a sediment analysis technician, then joined the Biological Control of Weeds Section of the Regina Research Station of Agriculture Canada as a technician under Dr. Peter Harris. She went on to undertake a Master's program in damage assessment of flea beetle feeding in broccoli at the University of Manitoba, and a Ph.D. in pea aphid damage in field peas. Joining the AAFC Saskatoon Research Station in 1987, she led a program in insect pest control of forage crops. Later, she studied the ecology of pest insects in canola and other oilseeds, with a focus on flea beetle species, their distribution and pest status. Julie's wide research endeavours resulted in experience with many insect pests in the province, and she was frequently asked to share her knowledge with producers and industry workers alike. Julie retired from full time service with the AAFC Saskatoon Research and Development Centre in 2015, but has remained affiliated with the Saskatoon Research and Development Centre for several years and continues to work on publishing her research.



STECK, Warren Franklin

B.Eng. (1960) McGill; Ph.D. (1964) University of Saskatchewan

Born: 10 May 1939, Regina Saskatchewan

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Victoria British Columbia
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Warren received his high school education at Central Collegiate in Regina, and then studied chemical engineering at McGill University. Like so many student engineers, his summers were spent at jobs in oil refineries, gas pipeline projects and as an NRC summer student. His doctoral program in organic chemistry, supervised by J. M. Pepper at the University of Saskatchewan, included research on wood chemistry – a serendipitous early slide towards the biological side of science. After two years of post-doctoral study of plant chemicals at the University of Oklahoma, Warren joined the staff of the National Research Council (NRC) of Canada in Saskatoon. His first area of interest there was plant biochemistry but he soon became interested in the use of signal chemicals to protect plants from insect pests. From 1973 to 1984 he was a member of the NRC's research group on insect pheromones, where he synthesized prospective insect attractants and oversaw much of their extensive field testing as lures for specific lepidopteran species. Warren was appointed Director of the NRC's then-new Plant Biotechnology Institute in 1983 and became Director General of the national Plant Biotechnology Program in 1989. He moved to private industry in 1995 to become Vice-President R&D at Fytokem Products Inc., and then in 2001 entered the world of consulting by founding Steck & Associates Inc. Warren retired in 2015 and lives in Victoria, B.C., where he now engages in volunteer work and in writing. His three published books to date are *From Rapeseed to Canola* (1992); *Natural Chemicals from Prairie Plants* (1997); and a novel titled *Century* (2018). He continues a little field botany and maintains his interest in insect chemicals.



STEPHENS, Danielle Tara

B.Sc. Agriculture (2008, with Great Distinction), M.Sc. Biology (2012) University of Saskatchewan

Born: 3 October 1985, Balcarres Saskatchewan

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Danielle grew up on a farm south of Balcarres, Saskatchewan. Every summer, she participated in the Fort Qu'Appelle Butterfly count with Ron Hooper. After graduation Danielle took a year off and travelled to Costa Rica where she saw how easy it is to grow plants in tropical environments. Danielle then decided to pursue a Plant Science degree at the University of Saskatchewan. In her third year Danielle worked as a summer student for Art Davis (Department of Biology) and did an undergraduate project with his lab in her fourth year. After taking another year off to travel, Danielle started an M.Sc. in the Department of Biology with Art Davis on the pollination and flower morphology of the Canadian blueberry and lingonberry. Danielle has worked for the Saskatchewan Ministry of Agriculture since November 2012 and was very involved with integrated pest management in field crops for the three years that she worked as the coordinator for the field crop insect pest and plant disease surveys for the province. Danielle served as the President of the ESS in 2018.



TANSEY, James

B.Sc., M.Sc. (2001), Ph.D. (2009), University of Alberta

Born: Edmonton Alberta

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James is the Provincial Entomologist (Insect/Pest Management Specialist) for the Saskatchewan Ministry of Agriculture in Regina. Prior to his current position, he was an entomology research scientist with ALK Source Materials in Post Falls, Idaho, where he worked on house dust mite biology and optimizing industrial production and allergen expression. He held two postdoctoral fellowships, first at the University of Alberta with Lloyd Dossdall (2009-2011), studying the mechanisms of resistance of novel canola germplasm to cabbage root maggot. The second was at the University of Florida IFAS with Philip Stansly (2014-2015), contributing to the Citrus Health Management Areas (CHMA) program and researching Asian citrus psyllid (including insecticide resistance, cultural and chemical control). He was also a Regulatory Affairs Manager with Dow AgroSciences Canada Inc. in Calgary, Alberta.

James's doctoral research was conducted in the Dossdall and Keddie labs at the University of Alberta. His doctoral dissertation was nominated by the Department of Agricultural, Food and Nutritional Science for the Governor General Gold Medal Award. This work unravelled the sensory, gustatory, and antibiosis mechanisms of resistance of newly-developed canola germplasm to the cabbage seedpod weevil. His M.Sc. research, supervised by Andrew Keddie and Alec McClay clarified some of the factors that influence interactions of the leafy spurge biological control agent, *Aphthona nigricutis* (Coleoptera: Chrysomelidae) with its host plant.



ULMER, Bryan James

B.Sc. (1996), B.S.A. (1997), Ph.D. (2002) University of Saskatchewan

Born: 27 February 1974, Davidson Saskatchewan

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After completing high school at Luther College in Regina, Bryan attended the University of Saskatchewan where he completed bachelor's degrees in the Colleges of Arts and Science (biology) and Agriculture before undertaking graduate studies working in agricultural entomology in conjunction with scientists at the AAFC Saskatoon Research Centre. His interest in agriculture and entomology was cultivated on the family farm growing up in Davidson, Saskatchewan. After completing his Ph.D. working on lepidopteran pests of brassica crops, Bryan completed a postdoctoral position at the University of Alberta (2003) working on integrated pest management (IPM) in canola. His second postdoctoral position was at the University of Florida (2005), working on IPM of citrus pests in Florida and the Caribbean. Bryan then joined Syngenta as an entomologist in Champaign, IL (2006), working on control strategies of various pests of corn and soybean that included plant based traits, insecticides, and cultural and biological controls. He then moved to South Dakota in 2008 and expanded into various other aspects of crop protection, continuing in entomology but also working on disease and weed management. This led to a global role with Syngenta in Basel, Switzerland beginning in 2011, where he had the opportunity to work on various projects around the world before returning to Saskatchewan with his family in 2014. Bryan continues to work in pest management across crops in western Canada and also has responsibilities for various global projects based out of Davidson, Saskatchewan. Bryan has been a member of the ESS since 1997.



VANKOSKY, Meghan Ann

B.Sc. (2008), M.Sc. (2010) University of Alberta; Ph.D. (2015) University of Windsor

Born: 2 April 1985, Drayton Valley Alberta

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Meghan grew up in a small agricultural community near Mayerthorpe, Alberta. After graduating from Grand Trunk High School in Evansburg, Meghan moved to Edmonton where she studied biology (history minor) at the University of Alberta. It was during this time that she first realized that entomology was a field of study and later, while taking classes in the Department of Agricultural, Food, and Nutritional Science that she realized that entomology could be a viable career path. Meghan then pursued her M.Sc., co-supervised by Lloyd Dosdall and Hector Carcamo (University of Alberta and AAFC-Lethbridge, respectively), studying integrated pest management and biological control of the pea leaf weevil (*Sitona lineatus*). In 2010, Meghan moved east to the University of Windsor, where she completed her Ph.D. studying tri-tropic interactions pertinent to a biological control agent used to control whitefly in tomato greenhouses. Meghan completed her Ph.D. in spring 2015 and celebrated by moving across the continent and south of the border to work as a postdoctoral scholar with Mark Hoddle at the University of California – Riverside, studying classical biological control of the Asian citrus psyllid. Although the warmth of California tempted Meghan to remain in the USA, she moved back to Canada after one year to begin her ‘forever’ job as Field Crop Entomologist at the AAFC Saskatoon Research and Development Centre in 2016. Meghan’s current research program focuses on understanding the biology of crop pests and their natural enemies to improve integrated pest management strategies, conducting surveys to predict pest population biology and distribution, and using bioclimate models to predict the response of insect pests and their natural enemies to climate change.

WEISS, Ross Michael

B.Sc. (Hon.) (1985), M.Sc. (1989) University of Saskatchewan

Born: 15 February 1963, Saskatoon Saskatchewan

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Ross received all of his education in Saskatoon. His initiation into entomology began when he wrote a fourth-year essay on the potential of biological control agents as mechanisms for the control of insect pest populations. Following his undergraduate training, Ross worked with D.C. Murrell for Saskatchewan Agriculture, monitoring pest populations in alfalfa fields that were pollinated by leafcutter bees. He also assisted J.M. Gruszka in an investigation of tracheal mites in honey bees. His M.Sc. thesis research comprised a study of the biology, parasites, and damage potential of the lesser clover leaf weevil, *Hypera nigrirostris*, on red clover. Since 1988, Ross has been employed by Agriculture and Agri-Food Canada at the Saskatoon Research Centre (and later at the Saskatoon Research and Development Centre). Working with Owen Olfert, Ross has investigated the effect of plant resistance on the biotic potential of grasshoppers, participated in surveillance of pest and beneficial insects, and developed bioclimate models to predict pest outbreaks and insect population responses to climate change. He has also assisted with the development of, and continues to operate and maintain the thermal gradient plate facility (thermally controlled multi-cell instrument) in Saskatoon, which is utilized for a variety of entomology and botany studies on an annual basis.



Wiens, Daniel Jesse

B.Sc. (Hons.) (2012), M.Sc. (2016) University of Saskatchewan

Born: 18 June 1989, Saskatoon Saskatchewan

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Following a childhood interest in insects, Dan began collecting them as part of an undergraduate course in 2010 at the University of Saskatchewan. His collecting efforts and interests grew after joining the lab of A.R. Davis to investigate the insects packed into honey bee pollen pellets during a summer research project. Dan went on to complete an undergraduate research project on developmental faults in the carapace of *Varroa destructor* mites. He stayed on with the Davis lab for graduate studies as well, where he completed a project examining the insects associated with *Vicia faba* extrafloral nectaries. During this time, he also taught laboratories for the Biology Department at the University of Saskatchewan, which he continued to do after graduation. Dan is now involved in research with M.J.T. Reaney on using the larvae of *Hermetia illucens* to upgrade the nutritional content of agricultural feed products, and is currently managing the Bioprocessing Pilot Plant in the College of Agriculture and Bioresources. Dan served as the President of the Entomological Society of Saskatchewan in 2019.



WILLIAMS, Jonathon Langley

B.Sc. (Hon. Zool.) (2011), M.Sc. (Environ. Sci.) (2015) University of Guelph

Born: 18 April 1989, Kingston Ontario

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Jon has had a keen interest in collecting and studying insects from a young age. After completing high school in Kingston, Ontario, he earned a bachelors degree in Zoology at the University of Guelph. The prospect of a career in entomology was cemented after taking Stephen Marshall's Insect Diversity and Biology course and traveling to Ecuador for an entomology field course. After graduating, Jon had a summer position at the University of Guelph Insect Collection, mounting and identifying insects. Following that, Jon assisted graduate students at the AAFC Harrow Research Centre, conducting greenhouse biocontrol research focused on predatory mites and western flower thrips (*Frankliniella occidentalis*). Jon next had a position at the Biodiversity Institute of Ontario working in the collections where he processed insect samples for DNA barcoding and spent two months traveling to national parks across Canada in an RV as part of a national insect survey. Jon then returned to the University of Guelph to complete an M.Sc. project with Rebecca Hallett studying the impact and potential control of the swede midge (*Contarinia nasturtii*) in canola. Currently, Jon works as an entomology technician with Meghan Vankosky at the AAFC Saskatoon Research and Development Centre with research focused on the life history and biology of insect pests of pulse and oilseed crops, and of their natural enemies. Through this work, Jon has become quite familiar with the pea leaf weevil (*Sitona lineatus*).



WIST, Tyler Jonathan

B.Sc. (Hon.) (2001), M.Sc. (2005) University of Saskatchewan;
Ph.D. (2014) University of Alberta

Born: 22 May 1978, Regina Saskatchewan

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Tyler became interested in entomology in the second year of his undergraduate studies at the University of Saskatchewan when he took a summer position with the City of Saskatoon's Pest Management Department. There, he worked on urban forest entomology and mosquito control including trapping for *Culex tarsalis*. Tyler completed an M.Sc. in Art Davis' lab at the University of Saskatchewan in 2005 where he studied the pollination system of *Echinacea* plants in Saskatchewan. His project included aspects of pollinator entomology, palynology, and nectar and nectary studies. He went back to studying urban forest entomology during in his Ph.D. in Maya Evenden's lab at the University of Alberta where he studied tritrophic plant-insect interactions including chemical ecology in the *Fraxinus*, ash leaf coneroller (*Caloptilia fraxinella*), and *Apanteles polychrosidis* system. This work led to his interest in biological control of insect pests. Tyler started working at the AAFC Saskatoon Research Centre in Chrystel Olivier's lab in 2012, working on a project studying cereal aphids and beneficial insects. This eventually led to a project where Tyler led development of an app utilizing dynamic action thresholds for cereal aphid management, *Cereal Aphid Manager*. Tyler joined the AAFC Saskatoon Research and Development Centre as a research scientist of field crop entomology in January 2016. His research areas include (but are not limited to): integrated pest management tools for wheat midge, landscape effects on flea beetles, insect migration, and the population dynamics of aphids and their natural enemies in cereals and pulses. Tyler served as President of the ESS in 2015 and became Treasurer in 2017.