The Crop Development Centre will turn 50 years old in 2021. In a six part series written by freelance writer Kathy Fitzpatrick, we look back at the story of how the centre came to be and some of the successes it has seen over the past 5 decades.

1970s

Postcard-pretty fields of blue flax set against yellow canola, now as emblematic of Canadian prairie as wheat. Stubble poking through a snowswept expanse, ready to receive springtime’s direct-seeded crop. Row upon row of ripening dainty-leafed lentils, Saskatchewan’s newer green and gold.

In the past half-century, the western Canadian farm landscape has been transformed. Much of the credit goes to the Crop Development Centre at the University of Saskatchewan’s (USask) College of Agriculture and Bioresources.

In its mission to generate new profit centres for producers, the CDC has added billions of dollars to the economy. Its impact has been “enormous” says barley breeder and former CDC director Bryan Harvey. The introduction of new crops to the region, and new varieties of old standbys, has helped spread financial risk he says, balancing falling wheat prices with better-paying pulses for instance.

Scarcf funds on the farm and in crop research was the common element that led to the CDC’s creation back in 1971. In the late 1960s a world glut had driven down the price of wheat, by far Saskatchewan’s dominant crop back then. At the same time, the USask Crop Science Department was searching for more money.

As one of the CDC’s leading wheat breeders Brian Fowler wrote, the department’s inability to raise enough money to conduct research, hire enough staff and attract graduate students were the “basic factors motivating initial efforts” to establish the CDC.

Faced with a budget cut in 1970, the College of Agriculture (as it was then called) set as its top three priorities undergraduate teaching, graduate teaching, and research – in that order.

But, “it was clear at this time that earlier fears had been justified and it would be next to impossible to finance research through the structure of the university,” Fowler continued.

Harvey, who had returned from Guelph in 1966, recalls the crop science department was “way understaffed for the responsibility that it had”, considering Saskatchewan has almost half the arable cropland in Canada. There were only four people doing field work including himself, Harvey says, adding it was “unreasonable to expect us to cover the full spectrum of needs.”

Meanwhile, the prairie farm crisis provided the rationale for a bigger push in agricultural research, particularly in Saskatchewan. At the time Saskatchewan was without “a major plant breeding centre” according to the department’s 1971 funding application to the National Research Council. Graham Simpson, then Acting Head of Crop Science, was the one to spot an NRC grant program as a promising funding source, Harvey recounts.

In its application, the department made the case that with agricultural markets changing rapidly, prairie farmers had to diversify and lessen their dependence on wheat, while at the same time improving traditional...
crops (wheat and barley in particular) to meet world demands. It also argued that plant breeding is most effective when done where the resulting varieties are to be used, and Saskatoon was put forward as the logical location.

As Harvey recalls, at the time most of Agriculture Canada’s wheat research was being done in Swift Current (in the drier southern prairie) and Winnipeg (where the focus was almost entirely on rust resistance). The northern prairie, with its shorter growing season and greater moisture, was not being serviced as well as it should be, he notes.

More crop research was a tough sell in the midst of a declining wheat market, but Harvey says the real risk in launching the CDC was the time required to develop and launch a new variety. Back then, it typically took 15 years or more. Success would take patience along with money.

The NRC approved $455,100 over three years to support research in three areas: feed barley; field peas and other new crops; and spring and winter wheat. Meanwhile, as Harvey recalls, Doug Knott (Department Head from 1965 to 1975) persuaded the provincial government to contribute as well. The Province agreed to cover the capital cost of the new Crop Science field laboratory, initially estimated at $260,000 and later reported to be $318,000. As well, the Province committed $200,000 annually for the first three years, and agreed to cover the CDC’s operating budget after the NRC term grant expired.

In 1972 the U of S announced that an additional $100,000 had been set aside for growth room facilities to be built that summer. Five years later, Fredrick Wesley Kernen’s large gift of farmland to USask led to the creation of the Kernen Crop Research Farm, another valuable resource for CDC crop breeders.

Simpson became the first director of the CDC. It was staffed with an initial six scientists: John Berdahl (feed and food barley breeding), Al Slinkard (pea breeding), Brian Fowler (winter wheat breeding and agronomy), Gordon Rowland (new crop evaluation), Ron Bhattay (quality analysis), and Larry Gusta (cold hardiness physiology).

But it was Slinkard’s work on lentils that generated two of the CDC’s earliest game-changing varieties before its first decade had passed, the Laird lentil (released in 1978) and the Eston lentil (1980). Lentils would vault from a minor crop in Saskatchewan to a major commodity, making Canada the world’s top producer and exporter, with nearly all of the country’s production coming from Saskatchewan.

The CDC’s next decade would be marked by many more launches and discoveries, impacting a broad range of domains from beer brewing to crop and soil management.
 Faculty Appointments

Maryse Bourgault joined the department on March 1, 2020 as an assistant professor holding the Western Grains Research Foundation Chair in Integrated Agronomy. Dr Bourgault comes from the Northern Agricultural Research Center at Montana State University where she was as Assistant professor responsible for cropping systems and agronomy. (photo by: Christina Weese)

Tim Sharbel officially returned to the department as a Professor on March 1 upon completion of his term as the Chair in Seed Biology with the Global Institute of Food Security (GIFS). Tim says he is very excited to join his colleagues in plant sciences.

 Staff Appointments

Coreen Morrison-Fritz joined the department on January 20, 2020 as a financial analyst. becomes part of the team that will support the faculty and researchers with their research grant requirements.

Cody Rieder joined the department on January 6, 2020 as a new mechanic.

Mohsen Ghamari joined the department as a research technician with the crop physiology program on January 8, 2020.

Dale Meyers joined the department on January 9, 2020 as a research technician with the cereal and flax pathology program.

Shweta Kalve was re-classified as a research officer with chickpea breeding program on January 9, 2020.

Andril Fatiukha joined the department on February 3, 2020 as a post doctoral fellow with the durum wheat molecular laboratory.

Keshav Singh was re-classified as a research assistant with the crop phenotyping program in January 2020.
**New Graduate Students**

**Aisa Kuper-Pscenicnik** comes to the department from Ontario where she attended the University of Western Ontario in London and completed a Bachelor of sciences in Biology (Honours) in 2018. Aisa will begin a MSc under the supervision of Jon Bennett. Her research will focus on understanding the mechanisms of plant-soil feedback and how it affects the process of crop breeding interactions with the host plant's microbiota.

**Angie Li** comes to the department from GIFS where she had been employed as a research technician since 2015. Angie is from Vancouver where she completed a Bachelor in Sciences (Biology) in 2015. She will begin a MSc under the supervision of Eric Lamb. Her research will focus on investigating interactions in a disturbed ecosystem.

**Sebastian Olivares** is from Concepción, Chile. He graduated from the University of Concepción with a Professional Degree in plant biotechnology engineering (Honours) in March 2018. Sebastian will begin a MSc under the supervision of Kirstin Bett. He will work on the research project entitled “enhancing the value of lentil variation for ecosystem variation.”

**Kristy Vavra** is from Lethbridge Alberta. She re-located to Saskatoon and attended the University of Saskatchewan where she completed a BSA in Agronomy with Distinction in January 2020. Kristy will begin a MSc under the co-supervision of Sean Prager and Tyler Wist. Her research will focus on the effects of insect pressure on crop development and yield.

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**Welcome coffee for new faculty member Maryse Bourgault**

Department of Soil Science Head Ken Van Rees and Department of Plant Sciences Head Yuguang Bai extend warm greetings to Maryse on her official first day at the University. Her joint position with the departments will be 70% in plant sciences and 30% in soil science.

Tim Sharbel also celebrates his official first day as a faculty member in plant sciences now that his term in GIFS has come to an end. (*l. to r.* Tim Sharbel, Coreen Morrison-Fritz, Kirstin Bett)
Long Term Service Recognition

The Plant Sciences Department and the Crop Development Centre would like to recognize the following staff members on their years of service milestones:
For the months of January - March

5 years of Service:
- Hamid Khazaei
  - Professional Research Associate
  - Pulse Breeding Program
  - February 12, 2015

5 years of Service:
- Javad Javadisaber
  - Research Technician
  - Pulse Breeding Program
  - February 2, 2015

5 years of Service:
- Taryn Zdunich
  - Research Technician
  - Agronomy & Weed Ecology
  - January 1, 2015

5 years of Service:
- Alvin Lingelbach
  - Research Technician
  - Spring Wheat & Canaryseed Breeding program
  - January 5, 2015

5 years of Service:
- Jithin Prem
  - Research Technician
  - Pulse Breeding Program
  - March 2, 2015

5 years of Service:
- Eric Johnson
  - Research Officer
  - Agronomy & Weed Ecology
  - March 16, 2015

10 years of Service:
- Madhawa Mannannalage
  - Research Technician
  - Pulse Breeding Program
  - March 1, 2010

10 years of Service:
- Battulga Baatar
  - Research Technician
  - Pulse Breeding Program
  - March 8, 2010

25 years of Service:
- Donna Hay
  - Research Technician
  - Barley & Oat Breeding
  - February 14, 1995

30 years of Service:
- Ken Jackle
  - Research Technician
  - Flax breeding program
  - January 12, 1990
Congratulations...


Preeni Bawa successfully defended her MSc thesis entitled “Identification of candidate genes for resistance against race 0 of Colletotrichus lentis in Lens ervoides” on Friday February 14, 2020.

Maureen Woytowich successfully defended her MSc thesis entitled “Analysis of the Outcrossing Ratio of German Chamomile (Matricaria recutita L.) using SSR-markers” on Friday February 28, 2020.

We are excited to announce that this year’s team received a hard-earned second place on the URME at #srn2020. And a special congrats to our own Erin Anderson for placing first as an individual. All around a successful year in Denver!

AgBio 4th year agronomy student Erin Anderson placed first as an individual receiving the highest score on the undergraduate range management exam.
2019 Outstanding Graduate Student Award

The Plant Sciences Outstanding Graduate Student award was first awarded in 1992 to one Master’s and one PhD student who have shown excellent research, leadership, service and academic achievement. Nominations are submitted by a faculty member or a full-time graduate student advisor and are reviewed by the graduate student committee.

Congratulations to the Masters and Ph.D award winners for the year of 2019.

Alanna Orsak is currently an M.Sc student with the pulse genetic improvement program studying under the supervision of Bunyamin Tar’an.

Zelalem Mengiste Taye is a PhD student in the plant ecology program studying under the supervision of Eric Lamb.

11th Annual PLSC Appreciation Lunch, Thursday March 5, 2020
Congratulations to Maria Alejandra Oviedo Ludena and her new husband Luis Mendez who were married on December 14, 2019 in their home country of Ecuador. Alejandra is an MSc student studying under the supervision of Randy Kutcher.

It is with great sadness that we announce the passing of Dr John Clarke. Dr. Clarke was the durum wheat breeder at the Swift Current Research Station, but after his retirement from AAFC in 2008 he joined the department as a research associate. Curtis Pozniak states “spent much time in the field with the durum team at the CDC, supporting our mission to develop new and superior durum varieties. He also contributed to teaching lectures, much research and many publications during his time here in our department. We were fortunate to work with him.” A celebration of John’s life was held on February 16, in Saskatoon.

The department and the Crop Development Centre acknowledge the passing of Earl Ostlund on February 15, 2020. Earl was a long time employee of the department who was responsible for yield trial testing. Bryan Harvey remembers Earl as a real gentleman and an outstanding worker. At his request, there was no funeral but in his obituary it stated “If you wish, donations to the St. Paul’s Palliative Care Unit would be appreciated. Or, pay it forward by doing something kind for someone...as Earl would have done.

Dean Mary Buhr gets pied for Telemiracle

The old saying is “take one for the team” but on Wednesday March 4, Dean Mary Buhr actually took a total of twelve for the team.

On the day before the Agros took to Highway 11 south for their annual bed-push for Telemiracle weekend, a pie throwing contest in which Dean Buhr was nominated twelve times took place. The event raised over $1280.00 for Telemiracle.

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