

BioCY News

Department of Genetics, Development and Cell Biology

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GDCB's class of 2020 moves on to Mayo, Harvard, a national cancer lab and more

The pandemic may have turned the world upside down last year, but several Iowa State University (ISU) genetics, development and cell biology (GDCB) students and two students affiliated with GDCB overcame obstacles and advanced their careers with aplomb. The Frederick National Laboratory for Cancer Research, Harvard University and Mayo Clinic are a few of the places where these graduates are continuing their stellar trajectories.

The eight GDCB students who received their doctorates in 2020 are **Maira Pedroso de Almeida**, **Allison Birnbaum**, **Kai Chang**, **Kerui Huang**, **Ashish Jain**, **Hao Jiang**, **Rebekah Starks** and **Weijia Su**. The two Department of Plant Pathology and Microbiology (PLPM) students affiliated with GDCB who graduated in 2020 are **Colton McNinch** and **Tesia Dennison**. McNinch and Dennison's co-major professor is a GDCB faculty member.

Completing studies during a pandemic posed unique challenges, and in some cases, advantages for students. For example, the pandemic and subsequent "stay-at-home orders" created logistical challenges. It also had an unanticipated benefit for Birnbaum while completing her Ph.D. work.

"For me, the stay-at-home orders came exactly as I was doing the majority of my dissertation writing, and so I was very lucky because it wasn't too intrusive on my plans." She did schedule time in a lab to perform some data analysis between the shutdown and her defense. The online defense went smoother than expected, but, she said, "It was weird to not have people in person and to speak to the computer. So, while there were some challenges, I feel I was very fortunate in that COVID-19 didn't have a drastic effect on my graduation timeline."

Jain also had to adjust to meetings via computer. "From my personal experience, the pandemic has substantially affected my progress as it took some time for me to get accustomed to the online meetings."

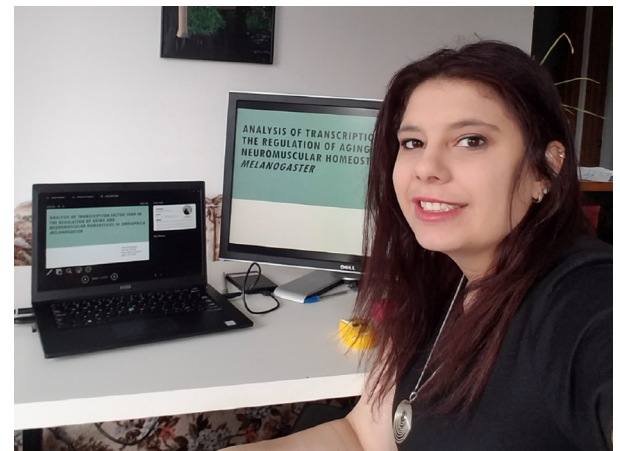
The virtual existence (i.e., computer-based interpersonal interaction) provided a silver lining for Birnbaum during her job search as she found her current position due to national and international meetings being held online.

Jain felt the pandemic led to fewer job opportunities. However, he added, "I am very thankful to my PI [principal investigator] for her guidance and everyone in my lab who supported me during this challenging time."

Huang shared her thoughts on the pandemic. "The situation is particularly difficult for international students, making it harder to go home and visit our families, although online video apps can help with homesickness. In difficult times like this, it's important to ask for help from friends, family members and your mentors. I couldn't have finished my degree successfully without the support from them!"



Kerui Huang, fall 2020



Allison Birnbaum, summer 2020

Class of 2020, continued on page 2

IOWA STATE UNIVERSITY

MAKE A GIFT

Class of 2020, *continued from page 1*

2 Spring 2020 Ph.D. graduates

Almeida and McNinch received their doctorates in spring 2020.

Although the pandemic briefly halted her original plans, Almeida joined the University of Toronto in Professor Stephane Angers' lab as a postdoctoral research associate. Angers' lab uses proteomic and genomic tools to identify novel components involved in development and tissue homeostasis and human diseases such as cancer. Almeida's major was in genetics and genomics. Her major professor was GDCB Associate Professor Maura McGrail, and her co-major professor was GDCB Professor Jeff Essner.

McNinch began his career as an informatics specialist at Mayo Clinic in Rochester, Minn. As an informatics specialist, McNinch said, "I provide bioinformatics support and expertise for a wide range of next-generation sequencing projects. These projects focus on a wide range of rare diseases and cancer with a common goal of better understanding the disease and improving patient care." His major was molecular, cellular and developmental biology. His co-major professors were GDCB Associate Professor Marna Yandea-Nelson and the late Dr. Nick Lauter, a faculty affiliate in PLPM and a United States Department of Agriculture-Agricultural Research Service research geneticist who passed away in early 2021.



Kai Chang, fall 2020



Maira Pedroso de Almeida, spring 2020

4 Summer 2020 Ph.D. graduates

Birnbaum, Dennison, Jiang and Su earned their doctorates in summer 2020.

Birnbaum accepted a postdoctoral research associate position in the lab of University of Alabama at Birmingham Assistant Professor Constanza Cortes. In the Cortes lab, Birnbaum said she is "focusing on brain aging and mechanisms that cause Alzheimer's disease." Birnbaum's major was in genetics and genomics, and her major professor was GDCB Assistant Professor Hua Bai.

Following graduation, Dennison became a corn breeder at AgReliant Genetics, LLC, in Sioux Falls, S.D. In her position, Dennison said she is "focusing on early maturity varieties for the northern United States." Her major was in genetics with a minor in statistics. Like McNinch, her co-major professors were Yandea-Nelson and the late Lauter.

After earning his Ph.D., Jiang began pursuing a master's degree at ISU in computer science with the objective of learning more computational skills. Jiang hopes to "combine my genetics and biology knowledge and computational skills for cross-disciplinary work in the future." Jiang's major professor was GDCB Chair Yanhai Yin, and his major was in plant biology. In Yin's lab, Jiang "studied Brassinosteroids (BR) and drought signaling in Arabidopsis, and used suppressor screening approach to identify novel BR signaling components."



Hao Jiang, summer 2020

GDCB graduates, continued on page 3



Weijia Su, summer 2020



Ashish Jain, fall 2020



Rebekah Starks, fall 2020



Colton McNinch, spring 2020

GDCB graduates, *continued from page 2*

Su is a postdoctoral research associate in Dr. Zhao Zhang's lab at Duke University School of Medicine. "Our lab is interested in uncovering the impact of transposable elements on reproduction, development and disease. My current project focuses on analyzing transposable elements using nanopore sequencing technology. I am developing computational pipelines to detect transposable element activities at genetic and epigenetic levels," Su explained. She was a plant biology major and a bioinformatics and computational biology co-major. Her major professor was GDCB Professor and Pioneer Chair in Maize Molecular Genetics Thomas Peterson.

4 Fall 2020 Ph.D. graduates

Chang, Huang, Jain and Starks earned their doctorates in fall 2020.

Chang's major was in genetics and genomics, and, like Birnbaum, her major professor was Bai. Her plans are to move to Sweden in 2021 to work as a postdoctoral research associate in Dr. Anna Wredenberg's lab in the Department of Medical Biochemistry and Biophysics at Karolinska Institute. In the Wredenberg lab, Chang said, "The project I will work on is investigating regulators involved in mitochondrial dysfunction."



Tesia Dennison, summer 2020

Huang moved to Boston as a postdoctoral fellow at Harvard University's Harvard Medical School's Department of Genetics in Dr. Norbert Perrimon's lab. Huang is studying liver and metabolic diseases. Her major was in genetics and genomics, and her major professor was Bai.

Jain joined Frederick National Laboratory for Cancer Research in Frederick, Md., as a bioinformatician. Jain's major was in bioinformatics and computational biology with a minor in statistics. His major professor was GDCB Associate Professor Geetu Tuteja.

Starks' major was in bioinformatics and computational biology, while she earned a minor in statistics and a minor in genetics and genomics. Her major professor was also Tuteja.

GDCB Chair Yin said, "The heroic efforts of our graduates illustrate the level of excellence that is pervasive in GDCB. We could not be happier about their success and wish them the best in their scientific careers."

For those who would like to tune in to the virtual celebrations recognizing these and all 2020 ISU graduates, visit the ISU Virtual Graduate & Commencement webpages: [Spring 2020 Virtual Graduate College Commencement Ceremony](#) and [Fall 2020 Virtual Graduate College Commencement Ceremony](#) (summer and fall).