

# Nathaniel Carriere/Research Engineer

**Personal:** (701) 360-4400

**Address:** 15835 Hwy 17

**LinkedIn:**

**Handshake:**

**Office:** (701) 777-75154

Grafton, ND 58237

<https://www.linkedin.com/in/nathaniel-carriere>

<https://und.joinhandshake.com/users/10777337>

**Email:**

[nathan.carriere@undeerc.org](mailto:nathan.carriere@undeerc.org)

## Education

Bachelor of Science in  
Chemical Engineering

University of North Dakota  
Grand Forks, ND

May 2020

## Related Experience

University of North Dakota's Energy and  
Environmental Research Center(EERC)

Grand Forks, ND

October 2020 to Present

With exceptional teamwork and daily communication while assisting in pilot plant research. Employing data reduction skills to obtain performance metrics of pilot plant. Utilized writing skills for reports and proposals. Implementing drafting skills for P&ID drawing. Completed all training requirements, including OSHA 10-Hour.

Clean Republic

Grand Forks, ND

January 2019 to January 2020

Committed and reliable efforts in producing thousands of battery products fast and efficiently while meeting regulatory standards. Utilized Microsoft Excel for product documentation and analyze testing results to review impact of manufacturing methods.

American Crystal Sugar Company

Drayton, ND

January 2010 to January 2011/  
September 2020 to October 2020

Adapted mechanical interest skills operating bobcat, forklift, centrifugal, membrane filtration, and mill equipment.

Utilized system sustainability and multitasking skills to run multiple laboratory tests to be completed in the same timeframe.

## Notable Projects

EERC Research Engineer

Fall 2020-Current

- Assisted running a pre-combustion and carbon capture system as a floor engineer, produced a carbon balance around pre-combustion system, aided in report writing on the effects of pre-combusting coal and biofuel blends on carbon capture system and working on P&ID of pre-combustion system.
- Particulate sampling for post-combustion and its carbon capture system.
- Proposal writing involving EERC's experience involving green hydrogen.

CHE 412 Process Project Engineering

Spring 2020

- Presented and displayed an implementation plan that covers the life cycle of a plant design to produce human insulin.
- Covered the many methods of producing human insulin and emphasizing in utilizing recombinant proteins in E. Coli as best method within an alternative analysis after research.
- Formed the preliminary process design in developing a world scale human insulin production plant utilizing recombinant proteins in E. Coli.
- Produced the process design and economic analyses with process improvements for a scoping study of a world scale human insulin production plant utilizing recombinant proteins in E. Coli.
- Displayed the overall layout of the human insulin production plant and purification process area for a partial conceptual design.

CHE 431 Chemical Engineering Lab IV

Summer 2019

- Described the in-house production of biodiesel with four types of bio-oils and investigated the subtemperate effects of biodiesel produced within a laboratory report.

CHE 531 Rocket Propulsion

Spring 2018

- Determined if ANSYS Fluent can be used to evaluate C.A. Hunter's fixed nozzle ratios instead of using physical experimentation for a project report.

## Skills

Industry/Academic

- Chemical Engineering
- Safety
- OSHA 10-Hour
- Controls

Tools & Technologies

- Plant Design
- Combustion
- Air Pollution
- Project Management

- Visio
- ANSYS
- MATLAB
- Polymath
- C+

Laboratory

- Auto CAD
- Chem CAD
- Minitab
- MS Project
- Microsoft Office
- Method 5 Sampling
- FTIR Spectroscopy
- Gas Chromatography
- Bomb Calorimetry

## **Involvement**

Member, AIChE, University of North Dakota, Grand Forks, ND

May 2019 – Present

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## **Further Experience**

Up North Pizza

East Grand Forks, MN

June 2018 to January 2019

Supported consistent communication skills and continuous improvement for order plan execution and quality improvement.

Simonson's Gas Station

Grand Forks, ND

June 2017 to March 2018

Service focus while interacting with passion to customers acquiring goods and supplies.

Amazon Inc.

Grand Forks, ND

June 2014 to September 2016

Implemented decision making and critical thinking skills to consult and troubleshoot user seller accounts using creative and innovative ways.

Ralph Engelstad Arena

Grand Forks, ND

September 2011 to August 2014

Achieved communication through hands on coordination methods to direct people and drivers through traffic and parking lots.

Deek's Pizza

Grand Forks, ND

August 2011 to June 2014

Delivered leadership to accomplish the production of hundreds of quality pizzas in a night comfortably.

Utilized customer service skills for customer needs and accountability in training others into following in practice.

Pastorek Construction

Grafton, ND

June 2009 to September 2009

Employed construction skills to repair wood trusses, lay cement foundations, driveways, and floors, and secure steel siding.

Henkel & Mckoy

Grafton, ND

June 2008 to August 2008

Incorporated teamwork communication to load and unload 30-inch diameter piping from semi-trucks and incorporating risk management.