**Jordan Clay Bratcher**

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**Education**

**B.S. Electrical Engineering, University of Oklahoma May 2026 (Expected)**

* Major GPA 4.00 / 4.00

**M.S. Geology, University of Wyoming May 2017**

* Focus: Geochemistry (GPA 3.95 / 4.00)

**B.A. Earth and Environmental Science, University of Kentucky May 2014**

* Major: Geological Sciences, Minor: Chemistry (GPA 3.25 / 4.00)

**Graduate Research**

**M.S. Research, University of Wyoming, Advisor: Dr. John Kaszuba June 2014 - May 2017**

* Investigated water-rock interactions between synthetic hydraulic fracturing fluids and the Frontier Fm. of the Powder River Basin, Wyoming.
* Experiments addressed the effect of ionic strength (salinity) and pH (acidity) on geochemical responses related to the reuse of wastewaters generated during hydraulic fracturing.
* Results show that subtle changes in solution salinity or acidity have significant impacts on the carbonate matrix and feldspar minerals of the Frontier Fm. reservoir.

**Professional Experience**

**Staff Scientist, Chesapeake Energy, Special Core Analysis September 2017 - Present**

* Incorporated LabVIEW and Python programming, electronics, and manufacturing experience (including 3D printing/laser cutting) to build versatile data acquisition systems and laboratory software for regular use in the SCAL laboratory.
* Individual responsibilities included designing and operating high pressure laboratory experiments such as: mercury injection capillary pressure, relative permeability, fluid sensitivity, electrical properties, low pressure gas adsorption, total gas content, and fracture conductivity.
* Completed LabVIEW programs included software for CO2-Toluene Cleaner, SCAL Systems, Stress Dependent Acoustics, and Biot’s Measurements.
* Significant research contributions included developing a reliable method of determining porosity using cuttings.

**Electronic Artist (Instagram: *@the.rad.scientist*) January 2019 - Present**

* Utilized programming, 3D design, additive manufacturing, and electronics experience to create science fiction themed escape room puzzles for regular use at Clue Quest of Edmond, OK.
* Collaborated with Factory Obscura artists (Oklahoma City, OK) to design and install robust lighting projects, interactive art pieces, and a variety of puzzles that create the immersive art experience known as Mix-Tape.

**Trivia Host, Challenge Entertainment April 2017 - December 2017**

* Completed over 150 hours of public speaking while organizing and hosting trivia nights at various bars/restaurants.
* Responsibilities included setting up equipment, handling money, addressing customer’s requests, and maintaining a fun, hospitable environment.

**Lab Technician II, Chesapeake Energy, Rock Mechanics November 2016 - September 2017**

* Coordinated with geologists and engineers to provide mechanical rock properties to Chesapeake Energy using a variety of testing methods.
* Responsibilities included collecting and preparing core samples for ultrasonic and rebound hardness analyses.
* Other significant contributions included assisting coworkers with unconfined compressive strength testing, confined triaxial strength testing, and data processing.

**Research Assistant, University of Wyoming August 2015 - November 2016**

* Organized lab materials, improved and repaired lab equipment, and ensured smooth operations within the Hydrothermal laboratory.
* Developed a standard operating procedure for experimental design, setup, operation, and fluid sample analysis.
* Assisted undergraduate and graduate students with laboratory equipment operation and data analysis.

**AAPG Imperial Barrel Award, University of Wyoming January 2015 - March 2015**

* Collaborated with fellow graduate students to present geologic interpretations about hydrocarbon generation, migration, accumulation, and production to a panel of experienced exploration geologists.
* Individual contributions included source rock evaluation, regional paleogeography, and petrophysical log interpretation/correlation in the Taranaki Basin, New Zealand.

**Lab Technician, SGS Minerals June 2010 - December 2014**

* Provided daily coal quality reports to mine foremen and laboratory supervisors. Received Experienced Surficial Miner’s License and hazard training.
* Responsibilities included collecting and preparing samples for analysis, compiling and distributing chemical reports, and operating/servicing laboratory equipment such as calorimeters, sulfur analyzers, and ash/moisture ovens.

**Research Assistant, Kentucky Geologic Survey February 2013 - December 2013**

* Utilized Microsoft Access to manage coal quality data for the entire state of Kentucky with the goal of making a complete mining record and coal quality database for public use.
* Used gamma ray and resistivity logs from various statewide sources to identify stratigraphic correlations and improve the geologic understanding of coal beds in Kentucky.

**Laboratory Equipment and Software Experience**

**Operational proficiency with:**

* Equotip 3 Hardness Tester
* Leco SC-144DR Sulphur/Carbon analyzer
* Parr 6100 Calorimeter
* Katanax K1 Prime Electric Fluxer
* Optima 8300 ICP-OES Spectrometer
* QIDI Tech 3D Printer
* NextEngine 3D Scanner
* Micromeritics Autopore IV
* Helium Pycnometer
* Ultrasonic Wave Velocity Analyzer
* Dionex ICS-5000 Ion Chromatograph
* UIC CM5015 Coulometer
* Steady-State Permeameter
* Quanta FEG 450 Scanning Electron Microscope
* Microelectronics (Arduino, RaspberryPi)
* Micromeritics TriStar II Plus
* AutoLab 1500 Triaxial System
* InfiniiVision 4000x Oscilloscope
* Glowforge Laser Cutter

**Operational experience with:**

* SCINTAG XDS 2000 XRD (copper tube)
* Gemini 2375 Surface Area Analyzer
* Quikchem 8500 Series 2 Flow Injection Analyzer
* HP 8452A Diode Array Spectrophotometer
* ECS 4010 Elemental Analyzer
* PinAAcle 900F Atomic Absorption Spectrometer

**Software/Programming Languages:** AutoCAD, Geochemist’s Workbench, Simplify 3D, TinkerCAD, Inkscape, LabVIEW, MATLAB, Python, C/C++

**Publications**

* Author: “Ionic Strength and pH Effects on Water-Rock Interactions in an Unconventional Reservoir: On the Use of Formation Water in Hydraulic Fracturing”, *Energy & Fuels*. 2021; 35: 18414–18429.