

Jonah M. Greene

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Denver, CO | United States

Formal Education

Master of Science (M.S.); Mechanical Engineering

Colorado State University | July 2019 | GPA: 3.55

Bachelor of Science (B.S.); Mechanical Engineering

Colorado State University | May 2018 | GPA: 3.68

International Baccalaureate Diploma

Poudre High School | May 2012 | GPA: 4.0

Research Experience

Research Associate III

Colorado State University | Fort Collins, CO | September 2020 – Present

**Research Associate II (July 2019 – September 2020)*

- Developing/validating temporally and regionally resolved models for algae growth and conversion
- Analyzing enzymatic membranes for carbon delivery to algal ponds
- Characterizing algae growth systems and performing data analysis of culture crashing
- Carbon accounting for sustainable building design and local power production
- Collaborating with national labs and industry professionals to reach performance targets

Graduate Research Assistant

Colorado State University | Fort Collins, CO | May 2018 – July 2019

- Quantified the economic and environmental performance of a novel offshore macroalgae biorefinery
- Investigated the economic performance of micro-utility systems for developing countries

Peer-Reviewed Publications

1. **JM Greene**, D Quiroz, S Compton, PJ Lammers, JC Quinn. “A validated thermal and biological model for predicting algal productivity in large scale outdoor cultivation systems.” *Algal Research*, January, 2021.
2. Z Cui, **JM Greene**, F Cheng, JC Quinn, U Jena, CE Brewer. “Co-hydrothermal liquefaction of wastewater-grown algae and crude glycerol: A novel strategy of bio-crude oil-aqueous separation and techno-economic analysis for bio-crude oil recovery and upgrading.” *Algal Research*, October, 2020.
3. **JM Greene**, J Gulden, G Wood, M Huesemann, JC Quinn. “Techno-economic analysis and global warming potential of a novel offshore macroalgae biorefinery.” *Algal Research*, August, 2020.

Conference Presentations

‡ indicates oral podium presentation

1. ‡**JM Greene**, Z Cui, F Cheng, CE Brewer, U Jena, JC Quinn. “Reducing the Cost of Renewable Fuel Production using Co-Hydrothermal Liquefaction of Microalgae and Crude Glycerol.” *Algal Biomass Biofuels and Bioproducts (ABBB)*, 2020 – conference postponed due to COVID19.
2. ‡**JM Greene**, C Hawthorne, K Reardon, D Dandy, JC Quinn. “Evaluating the Economic Impacts of Using Enzymatic Membranes to Optimize Bicarbonate Production and Delivery to Open Raceway Ponds.” *Algal Biomass Biofuels and Bioproducts (ABBB)*, 2020 – conference postponed due to COVID19.
3. ‡**JM Greene**, D Quiroz, S Compton, JC Quinn. “Utilizing Dynamic Growth Modeling to Add Temporal and Regional Resolution to Techno-Economic and Life-Cycle Models of Microalgae Biofuel Systems.” *Algal Biomass Summit - Algal Biomass Organization (ABO); Virtual Conference*, September, 2020.

4. †**JM Greene**, Z Cui, F Cheng, U Jena, CE Brewer, JC Quinn. “Driving Down the Cost of Renewable Fuel Production through Co-Hydrothermal Liquefaction of Microalgae and Crude Glycerol.” Algae Biomass Summit - Algae Biomass Organization (ABO); Virtual Conference, September, 2020.
5. †**JM Greene**, M Huesemann, J Gulden, GM Wood, T Mumford, JC Quinn. “Techno-Economic and Life Cycle Analysis of a Macroalgae Biorefinery: Using a Modular Approach to Quantify the Impacts of Emerging Technology on System Performance.” LCA XIX - American Center for Life Cycle Assessment (ACLCA); Tucson, AZ, September 2019.
6. †**JM Greene**, M Huesemann, J Gulden, GM Wood, T Mumford, JC Quinn. “Utilizing Techno-Economic Modeling to Identify Effective Methods to Reduce the Cost of Fuel Production from Macroalgae.” Algae Biomass Summit - Algae Biomass Organization (ABO); Orlando, FL, September, 2019.
7. †**JM Greene**, M Huesemann, J Gulden, GM Wood, T Mumford, JC Quinn. “Utilizing Life Cycle and Economic Modeling to Identify Effective Methods of Reducing Greenhouse Gas Emissions and Fuel Selling Price for a Marine Macroalgae Biorefinery.” Algal Biomass Biofuels and Bioproducts (ABBB); Boulder, CO, June, 2019.
8. †**JM Greene**, M Huesemann, J Gulden, GM Wood, T Mumford, JC Quinn. “Evaluating the Economic Viability of Offshore Macroalgae Production and the Impacts of Emerging Technologies and Downstream Processing into Bio-Products.” Aquaculture 2019; New Orleans, LA, March 2019.
9. **JM Greene**, M Huesemann, J Gulden, GM Wood, T Mumford, JC Quinn. “Modeling the Techno-Economic Feasibility of Bio-fuels Production from Marine Macroalgae.” Algae Biomass Summit - Algae Biomass Organization (ABO); Houston, TX, October 2018.
10. **JM Greene**, M Huesemann, J Gulden, GM Wood, T Mumford, JC Quinn. “Environmental Impact of a Macroalgae Biorefinery.” LCA XVIII - American Center for Life Cycle Assessment (ACLCA); Fort Collins, CO, September 2018.

Contracts & Grants

Externally Funded Projects as Technical Lead for TEA/LCA Tasks:

Years	Project Title	Organizations	Funding	Project Type
2021 – 2023	UNrealized Critical Lanthanide Extraction via Sea Algae Mining (UNCLE-SAM): Domestic production of critical minerals from seawater	CSU, PNNL, ARPA-e, DOE	\$1,000,000	DOE Award Number: FOA-00001953
2020 – Present	Living Ink: Life Cycle Analysis of algae-based black pigments compared to Carbon Black	CSU, Living Ink	\$12,500	CSU – Energy Institute
2020 – Present	Optimizing Selection Pressures and Pest Management to Maximize Algal Biomass Yield (OSPREY)	CSU, LANL, NMSU, UCSD, Qualitas Health, DOE	\$6,250,000	DOE Award Number: DE-EE0008902
2019 – Present	Integrating an Industrial Source and Commercial Algae Farm with Innovative CO ₂ Transfer Membrane and Improved Strain Technologies	CSU, NREL, Qualitas Health, DOE	\$4,864,565	DOE Award Number: DE-EE0008514
2020	Power House II: Analysis of Carbon Emissions and Methods of Reaching Net Zero Carbon	CSU, Neenan Archistructure	\$5,000	CSU-Energy Institute
2019	Platte River Power Authority: Life Cycle Impact Assessment Support	CSU, Platte River Power Authority	\$60,471	Contract

2019	Techno-Economic Evaluation of an Integrated Micro-Utility Concept for Developing Countries	CSU, Factor[e] Ventures, WASE, Sistema.Bio	\$50,000	Contract
2018 – 2019	Techno-Economic Analysis and Life Cycle Assessment of the Nautical Offshore Macroalgal Autonomous Device (NOMAD)	CSU, PNNL, OSU, ARPA-e, DOE	\$500,000	DOE Award Number: DE-AR0000913

References (More Available on Request)

Dr. Jason Quinn | CSU | Graduate/Current Advisor

Email: jason.quinn@colostate.edu

Phone: (970) 581-7992

Dr. Michael Huesemann | PNNL | NOMAD Project PI

Email: michael.huesemann@pnnl.gov

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Dr. John Petro | CSU | Undergraduate Professor

Email: John.Petro@colostate.edu

Phone: (970) 491-8340