

CURRICULUM VITAE
JUSTIN M. GREENLY, Ph.D.

justin.greenly@gmail.com
jgreenly@franciscan.edu

**Associate Professor of Engineering
Chair, Department of Engineering and Computing**

Franciscan University, Steubenville, OH
(Assistant Professor 2014 - 2020)

COURSES TAUGHT

Engr. Innovations I (Intro to Engr.) and II (Intro to Engr. Analysis), Engineering Analysis, Rigid Body Statics and Dynamics, Strength of Materials, Engr. Thermodynamics, Intro to Chemical Engr. Analysis, Calculus I, II, and III, and Matrix Theory I and II, Differential Equations, Survey of Physical Science

RESEARCH INTERESTS

Ultrasonic Cavitation, Engineering Education, Sustainable Energy, Hydrothermal Processing

SPECIAL PROJECTS and AWARDS

- Fostering on-campus and off-campus projects, internships and collaborations for students in our four-year engineering programs and our dual-degree partnership with The Catholic University of America, Gannon University, Saint Francis University, University of Notre Dame, and University of Pittsburgh
- Introduced the Gizmo Engineering and Education Project and Expo, a collaborative project for engineering and education students, culminating in an annual community event displaying devices (“gizmos”) designed to teach science and technology concepts
- Received the St. Elizabeth Ann Seton Outstanding Faculty Mentor Award, Gallery of Research, Artistry, and Community Engagement (GRACE) Symposium, Spring 2018

DEGREES

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| 2014 | Cornell University, Ithaca, New York
Doctor of Philosophy in Chemical and Biomolecular Engineering
School of Chemical and Biomolecular Engineering
Advisee of Jefferson W. Tester, Ph.D.
Internal Minor: Sustainable Energy Systems
External Minor: Biological and Environmental Engineering |
| 2012 | Cornell University, Ithaca, New York
Masters of Science in Chemical Engineering (<i>Awarded in curso</i>) |
| 2008 | Bucknell University, Lewisburg, Pennsylvania
Bachelor of Science in Chemical Engineering, <i>summa cum laude</i>
Donald F. Othmer Chemical Engineering Academic Excellence Award
President's Award for Distinguished Academic Achievement |

PUBLICATIONS etc.

- *Accepted in Summer 2022 and in progress for copy editing:* Manuscript for Transformative Dialogues: Teaching and Learning Journal: “The Gizmo Project: Collaborative and Experiential Learning to Benefit All”
- Stephen Frezza and Justin Greenly, “Identifying Core Engineering Virtues: Relating Competency and Virtue to Professional Codes of Ethics.” Proceedings of the ASEE Virtual Conference, 12pp, July 2021.

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- *Currently in preparation:* Manuscript for the Journal of the American Oil Chemists' Society: "Hydrothermal liquefaction of triolein in subcritical water"
- Writing and building Open Educational Resource (OER) material for an Ordinary Differential Equations Course in a small team of mathematics faculty and staff. This effort to create and curate OERs is funded by the Ohio Dept. of Ed. Innovation Grant through a partnership with North Central State College, The Ohio State U., and Ohio Dominican U. Work completed in 2019.
- Students Emily Johnson, Daniel Deal, and Stephen Bolster presented "3D Printed 6-Axis Robotic Arm" Gallery of Research, Artistry, and Community Engagement (GRACE), Steubenville, OH, April 2019
- Reister, M. & Greenly, J.M. (2018, November). Elevating STEM through a unique collaboration: Extraordinary science through gizmos! Council for Exceptional Children-Teacher Education Division National Conference, Las Vegas, NV.
- Greenly, J.M., Reister, M., Manzer, J., & Burke, K. (2018, April). Gizmo collaboration with student voices. Gallery of Research, Artistry, and Community Engagement (GRACE), Steubenville, OH.
- Reister, M. & Greenly, J. M. (2018, March). Extraordinary Science through Gizmos: Elevating STEM for Students with Special Needs through a Unique Collaboration. American Council on Rural Special Education (ACRES), Salt Lake City, UT.
- Student Paul Helgemo presented poster "Design, Fabrication and Testing of a 3D Printed Centrifugal Pump", American Institute of Chemical Engineers Annual Conference, October 2017, Minneapolis, MN
- Greenly, JM, Tester, JW. Ultrasonic cavitation for disruption of microalgae, Bioresource Technology. May 2015; 184: pp. 276-9
- Presented poster "The Use of Power Ultrasound for Harvesting and Extraction of Microalgal Lipids" at the 1st International Conference on Algal Biomass, Biofuels, Bioproducts, July 2011

PROFESSIONAL and COMMUNITY AFFILIATIONS

- Member, American Society for Engineering Education, 2016 – present
- Member, Engineers' Society of Western Pennsylvania, 2016 – present
- Member, Christian Engineering Society, 2017 – present
- Member, Knights of Columbus, 2011 – present
- Board of Directors, Bucknell Engineering Alumni Association, 2010 – 2013 and 2018 – 2021
- Passed Fundamentals of Engineering Examination for Chemical Engineering, 2008
- Tau Beta Pi, Bucknell Chapter, past member
- Volunteer for Trail Life Troop in Steubenville, (I was an Eagle Scout)

PROFESSIONAL HISTORY and TRAINING

Since 2016	Visiting Assistant/Associate Professor at Cornell University, Six-week summer session: Engineering Thermodynamics course in the School of Mechanical and Aerospace Engineering (2016, 2018, and 2020) and Multivariable Calculus for Engineers in the Department of Mathematics (2020, 2021, and 2022)
2016	SOLIDWORKS Essentials Four Day Training at 3DVision Technologies Mechanical design automation software for parametric models of parts and assemblies
2015	Project Catalyst (<i>How to Engineer Engineering Education</i>) Bucknell University, Lewisburg, Pennsylvania Three-day workshop on principles of instructional design: instructional objectives, active learning, inductive teaching, flipped classroom, assessment, classroom technology, rubrics
2014	Consulting for clients in the energy industry in the area of corrosion issues relevant to the processing of brines and related wastewaters at sub- and supercritical conditions.

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2008-2014 Ph.D. Student and Researcher

Research and Project Experience:

- Experimental and theoretical approaches to the utilization of ultrasonic cavitation for the rupture of algal cells and release of lipid products
 - Experimental application of cavitation across variables such as microalgae species, cell concentration, dissolved gas content, and acoustic amplitude
 - Numerical modeling of effects of cavitation collapse
- Hydrothermal conversion (liquefaction) of lipid feedstock: Experimentation with high pressures, high temperature water (in near- and supercritical state) as solvent, catalyst, and reactant for lipid conversion
- Provided supervision and training, and to undergraduate laboratory assistants
- Established Tester group experimental and analytical laboratories in Biofuel Research Lab and in Snee Hall at Cornell University, established group web-page, and coordinated lab safety training and compliance for 15-member group

Teaching Experience:

- Lectured and assisted in courses with topics including: Analysis of Sustainable Energy Systems (Modules in Biofuels, Nuclear Energy, Wind Energy), Thermodynamics, Kinetics, Supercritical Fluid Engineering, Biofuels and Bioenergy, Separations
- Coordinated 40 undergraduate/graduate students for week-long Sustainable Energy Fellowship program at Cornell, June 2010 (Participant at U. of Michigan in 2009)

Summer
2008Process Research
ExxonMobil, Clinton, New Jersey

- Research in upgrading of heavy crudes with novel catalytic pathways: Explored radical chemistry associated with intermetallic hydrides and co-catalysts with microwave stimulation. High throughput experimentation with gas chromatography.

Summer
2007Process Engineering
Air Products and Chemicals, Allentown, Pennsylvania

- Study for External Customer: Worked in collaboration with an engineer to investigate natural gas liquefaction at sea. Utilized the AspenTech process simulator to evaluate the sensitivity of power requirements to varying refrigerant compositions.

Summer
2006Institute for Leadership in Technology and Management
Bucknell University, Lewisburg, Pennsylvania

- Studied business, ethics, communication, critical thinking, teamwork, and leadership
- Concurrent consulting project: Assessed various outpatient data capture technologies at Geisinger Health System and presented final cost-benefit analysis