

Curriculum Vitae

Kirti M. Yenkie

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Education and Professional Experience

- 09/2017 - present** **Assistant Professor at Rowan University, Glassboro, New Jersey**
Department of Chemical Engineering
Current Projects:
1) *Mathematical modeling and optimization in cancer therapeutics using systems engineering principles*
2) *Design and optimization for generation of efficient wastewater treatment networks*
3) *Predictive analytics for management of IBS (irritable bowel syndrome) through customized supplements of probiotics and diet management*
4) *Solvent recovery and reuse for efficient and sustainable industrial manufacturing practices*
5) *Optimization of pipeline flushing and cleaning operations in lubricant blending facility*
- 04/2017 - 08/2017** **Postdoctoral Research Associate at University of Delaware (UD) - Newark**
Department of Chemical and Biomolecular Engineering
Project: *Systems biology models for COPD (Chronic Obstructive Pulmonary Diseases)*
Advisor: Dr. Babatunde A. Ogunnaike
- 01/2015 - 03/2017** **Postdoctoral Research Associate at University of Wisconsin (UW) - Madison**
Department of Chemical and Biological Engineering
Project: *Separation strategies for bio-based chemicals produced from microbial bioconversions*
Advisor: Dr. Christos T. Maravelias
- 01/2011 - 12/2014** **University of Illinois at Chicago (UIC), IL and Vishwamitra Research Institute (VRI), IL**
Ph.D. in Bioengineering
Thesis: *Stochastic processes from batch crystallization to in-vitro fertilization (IVF)*
Advisor: Dr. Urmila M. Diwekar
- 07/2010 - 11/2010** **Senior Research Fellow, Indian Institute of Technology (IIT) Bombay, India**
Department of Chemical Engineering
Project: *Metabolic modeling of cyanobacteria for enhanced ethanol production*
Advisor: Dr. Pramod P. Wangikar
- 07/2008 - 06/2010** **Indian Institute of Technology (IIT) Bombay, India**
M. Tech in Chemical Engineering
Thesis: *Mathematical modeling to correlate morphology and metabolism in Actinomycetes*
Advisors: Dr. Pramod P. Wangikar and Dr. Sameer R. Jadhav
- 08/2004 - 05/2008** **Laxminarayan Institute of Technology, RTM Nagpur University, India**
Project: *Design and performance comparison studies for rotary and belt conveyer dryers*
B. Tech in Chemical Engineering

Awards & Honors

- **Invited Panelist** for the Rowan University Women in Engineering (WIE) Chapter's VINE Panel to discuss the challenges and opportunities for Women Engineers, November 15, 2019.
- **Junior Faculty Travel Award** sponsored by the NSF to attend the 2019 FOPAM (Foundations of Process Analytics and Machine Learning) Meeting (August 5-10, 2019) in Raleigh, NC
- Selected as one of the **Outstanding Young Chemical Engineering Educators** by the CACHE (Computer Aids for Chemical Engineering) Committee and invited to present at their 50th Anniversary Meeting (July 19-20, 2019), Breckenridge, CO
- **Junior Faculty Travel Award** sponsored by the NSF to attend the 2019 FOCAPD (Foundations of Computer-Aided Process Design) Meeting (July 14-18, 2019) in Copper Mountain, CO

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- **Winning Team Member** of the **Inspira Health Hack Competition-2018**, conducted at the South Jersey Tech Park, Rowan University, NJ for project proposal on IBS (Irritable Bowel Syndrome) patient management tool
- **Invited Seminar Speaker** by the **AICHe-DVS** (American Institute of Chemical Engineers – Delaware Valley Section) for Continuing Education Program for Professional Development at KBR, Inc. in Newark, DE, June 19th, 2018
- **Invited Panelist** at University of Illinois at Chicago for International Engineering Alumni Q&A Panel (March 14th, 2018 and March 7th, 2017)
- **Invited Seminar Speaker** and **Winner of the NSF Advance Travel Grant** for Postdoctoral Seminar at University of Wisconsin-Green Bay (February 3rd, 2017), conducted by the Women and Science Program by UW Oshkosh
- **Best Graduate Research Award** for Women and Gender Studies at UIC's Research Symposium, April 14th, 2014
- **Conference Travel Awards:** FOPAM 2019, FOCAPD 2014, AIChE 2013 (Graduate Student Council at UIC)
- **Awarded Membership of AEMB** (2012-2013), National Biomedical Engineering Honor Society
- **Best Presentation Award** - Chemference National Conference at IIT Kanpur, India, July 13th – 14th, 2010
- **Outstanding Contribution Award** by CHEA (Chemical Engineering Association) at IIT Bombay in recognition of exceptional contribution to the department activities (2008-2010)
- **All India Rank #109 in GATE** (Graduate Aptitude Test for Engineering) -2008 and awarded 2 year scholarship from Ministry of Human Resource Development, India
- **Winner of Prodigy (01/2008) - Chemical Engineering Quiz** at Institute of Chemical Technology (ICT), Mumbai, India

Teaching and Mentoring

- 09/2017 – present **Course Instructor at Rowan University**
- **Process Optimization** – Graduate and Senior level Elective (Spring 2018, Spring 2019)
 - **Process Dynamics and Control** – Required Senior level (Fall 2017, 2018, and 2019)
- 09/2017 – present **Research Advisor at Rowan University**
- **PhD Students:** John Chea (11/2018 – present), Fred Ghanem (01/2019 – present), Emmanuel Aboagye (09/2019 – present), Swapana Jerpoth (09/2019 – present)
 - **Junior/Senior Engineering Research Clinics** (Fall 2019)
Students: Eric Purcell, Casey Wagner, Gabrielle Moskalow, Vanessa Pierce, Jake Stengel, Hailey Lynch, Austin Lehr, Jordan Holman, Maya Desai, Marissa Martine, Kiana Ramirez, Samantha Resnick, Carley Tran, Spencer Verdoni
 - **Undergraduate Summer Research Students** (Summer 2019)
Eric Purcell, Jake Stengel, Rohan Zia, Austin Lehr
 - **Junior/Senior Engineering Research Clinics** (Fall 2018, Spring 2019)
Students: Katherine Schmidt, Alex D'Aloia, Eric Purcell, Matthew Razze, Zachary Lubelski, Amanda McCahill, Gabrielle Moskalov, Rohan Zia, Amanda Christon, Julia Reily, Vanessa Pierce, Maxim Russ, Anthony Pace, Hannah Work, Jake Stengel, Alexa Lynch
 - **Undergraduate Summer Research Students** (Summer 2018)
Student: Katherine Schmidt
 - **Junior/Senior Engineering Research Clinics** (Fall 2017, Spring 2018)
Students: Ian Dunn, James Dailey, Sean Burnham, Sommer Vandergrift, Matthew Schwenger, Chaun Giddings
- 08/2014 - 12/2014 **Teaching Associate - Applied Optimization (University of Illinois, Chicago)**
Taught a section on heuristic optimization – Genetic algorithm and simulated annealing
- 08/2012-05/2014 **Teaching Assistant at University of Illinois, Chicago**
- Introduction to Cell & Tissue Engineering (Spring 2014)
 - Senior Design (Fall 2013)
 - Introduction to Applied Optimization (Fall 2012)
- 04/2012-12/2016 **Undergraduate and High School Student Mentor**

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- Mentored undergraduate students for the NSF funded REU programs at UIC and Bose-Khorana scholars at UW-Madison
- Mentored undergraduate and high school students visiting VRI-CUSTOM

09/2009-06/2010

Teaching Assistant at IIT Bombay, India

- Chemical Engineering Thermodynamics (Jan-May, 2010)
- Undergraduate Reaction Engineering Laboratory (July-Dec, 2009)
- Plant Utilities (Jan-May, 2009)

06/2009 - 06/2010

Graduate Student Mentor at IIT Bombay, India

Mentored 15 graduate students from M. Tech 2009 batch. Responsibilities included providing sound and timely advice regarding academic and extracurricular issues

Industrial Experience

06 - 08/2012

Summer Internship at Mallinckrodt Pharmaceuticals, St. Louis, MO

Project: *Kinetic studies and policy predictions for API (active pharmaceutical ingredient) crystallizations*
Mentor: Dr. Keith Tomazi, Technical fellow, Mallinckrodt Pharmaceuticals (formerly Covidien)

05 - 06/2007

Summer Internship at Indian Oil Corporation Limited (IOCL), R&D, India

Project: *Overview of petroleum refining processes and study of diesel hydrotreating micro-reactor unit*
Mentors: Dr. Madhusudan Sau and Mr. Ganesh Butley, R&D - Hydroprocessing IOCL

Invited Seminars & Talks

11/2019

AIChE Annual Meeting's session in Honor of Warren K. Lewis Award Winner, Prof. Ogunnaiké

Topic: *Enhancement of Chemical Engineering Education through Design Thinking: Integration of Theory and Cyber-Assisted Methods.*

07/2018

Pazmany Peter Catholic University in Budapest Hungary, July 2, 2018

Topic: *Methodology for Generation of Efficient Wastewater Treatment Networks and Future Directions with application of P-graph Framework and Sustainability Metrics*

06/2018

KBR, Inc. in Newark, DE as a part of Continuing Education Program offered by AIChE-DVS

Topic: *Generating Wastewater Treatment Networks: An integrated approach comprising of contaminant properties, technology suitability, plant design and process optimization*

01/2018

Laxminarayan Institute of Technology (L.I.T.), R.T.M. Nagpur University, India, Jan 10, 2018

01/2018

Department of Chemical Engineering, Visvesvaraya National Institute of Technology (V.N.I.T.), Nagpur, India, January 9, 2018

Topic: *Process Systems Engineering in Healthcare & Environment and Graduate Programs at Rowan University*

06/2017

Air Liquide's Delaware Research and Technology Center (DRTC), DE, USA, June 29, 2017

Topic: *Treatment Strategies and Design Decisions for COPD using Systems Engineering Principles*

02/2017

Department of Chemical Engineering and Materials Science, Wayne State University, Detroit, MI, USA, February 24, 2017

Topic: *Process Systems Engineering for Treatment Strategies and Design Decisions in Health and Environment*

02/2017

Department of Natural & Applied Sciences, University of Wisconsin-Green Bay (UWGB), WI, USA, Feb 3, 2017

Topic: *Separation Networks for Recovery of Bio-based Chemicals: Roadmap for Matching Biological and Process Feasibility*

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Peer-Reviewed Publications

Journal Publications

1. **Yenkie, K. M.***. 2019. Integrating the three E's in Wastewater Treatment: Efficient Design, Economic Viability, and Environmental Sustainability. *Current Opinion in Chemical Engineering*, 26: 131-138.
2. Wu, W.†; **Yenkie, K. M.+***; Maravelias, C. T. 2019. Synthesis and analysis of separation processes for extracellular chemicals generated from microbial conversions. *BMC Chemical Engineering*, 1(1): 1-14. † Equal Contributions, Corresponding author
3. **Yenkie, K. M.**; Diwekar, U. M. 2018. The 'No sampling' parameter estimation algorithm for stochastic differential equations. *Chemical Engineering Research & Design*, 129: 376-383.
4. **Yenkie, K. M.**; Wu, W.; Maravelias, C. T. 2017. Synthesis and analysis of separation networks for the recovery of intracellular chemicals generated from microbial-based conversions. *Biotechnology for Biofuels*, 10:119.
5. Wu, W.; **Yenkie, K. M.**; Maravelias, C. T. 2016. A superstructure based framework for bio-separation network synthesis. *Computers and Chemical Engineering*, 96: 1-17.
6. **Yenkie, K. M.**; Wu, W.; Clark, R. L.; Pflieger, B. F.; Root, T. W.; Maravelias, C. T. 2016. Roadmap for selection of separation technologies in the recovery of bio-based chemicals: matching biological and process feasibility. *Biotechnology Advances*, 34(8): 1362-1383.
7. **Yenkie, K. M.**; Diwekar, U.; Linninger, A. A. 2016. Simulation-free estimation of reaction propensities in cellular reactions and gene signaling networks. *Computers and Chemical Engineering*, 87: 154-163.
8. Doshi, R.; Diwekar, U.; Benavides, P.; **Yenkie, K. M.**; Cabezas, H. 2014. Maximizing sustainability of ecosystem model through socio-economic policies derived from multivariable optimal control theory. *Clean Technologies and Environmental Policy*, 1-11.
9. **Yenkie, K. M.**; Diwekar, U. 2014. Uncertainty in clinical data and stochastic model for in-vitro fertilization. *Journal of Theoretical Biology*, 367: 76-85.
10. **Yenkie, K. M.**; Diwekar, U. 2014. Comparison of optimal control methods for customized drug dosage prediction in superovulation stage of in-vitro fertilization. *Computers and Chemical Engineering*, 71: 708-714.
11. **Yenkie, K. M.**; Diwekar, U.; Bhalerao, V. 2014. Modeling and prediction of outcome for the superovulation stage in in-vitro fertilization. *JFIV Reprod.Med.Genet.* 2(2):1000122(1-8).
12. **Yenkie, K. M.**; Diwekar, U. 2014. Optimal control for predicting customized drug dosage for superovulation stage of in-vitro fertilization. *Journal of Theoretical Biology*, 355: 219-228.
13. **Yenkie, K. M.**; Diwekar, U.; Bhalerao, V. 2013. Modeling the superovulation stage in in-vitro fertilization. *IEEE Trans. Biomed. Eng.*, 60(11): 3003-3008.
14. **Yenkie, K. M.**; Diwekar, U. 2013. Stochastic optimal control of seeded batch crystallizer applying Ito process. *Ind. Eng. Chem. Res.*, 52:108-122.

Conference Publications

15. Schmidt, K.; Kodate, P. M.; **Yenkie, K. M.*** 2019. Improved biomarker-based diagnostics of leukemia subtypes using machine learning methods. Proceedings of the 1st International Conference on Foundations of Process Analytics and Machine Learning (FOPAM), The StateView Hotel – Marriot Autograph Collection, Raleigh, North Carolina, 6th -9th August, 2019.
16. Chea, J. D.; Christon, A.; Reilly, J.; Pierce, V.; Russ, M.; Slater, C. S.; Savelski, M. J.; **Yenkie, K. M.*** 2019. Framework for Solvent Recovery, Reuse, and Recycling in Industries. Proceedings of 9th International Conference on Foundations of Computer-Aided Process Design (FOCAPD), Copper Mountain, Colorado, 14th – 18th July, 2019.
17. **Yenkie, K. M.***; Burnham, S.; Dailey, J. M.; Cabezas, H.; Friedler, F. 2019. Generating Efficient Wastewater Treatment Networks: an integrated approach comprising of contaminant properties, technology suitability, plant design and process optimization. Proceedings of 29th European Symposium on Computer Aided Process Engineering (ESCAPE), Eindhoven, Netherlands, 16th – 19th June, 2019.

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- Dunn, I. C.; **Yenkie, K. M.*** 2018. Prediction of Optimal Chemotherapy Dosing Regimens: Balancing Tumor Degradation and Toxicity Effects (Paper MoAPo1.13). IFAC's Nonlinear Model Predictive Control (NMPC) Conference, Madison, WI, 19th – 22nd August, 2018.
- Yenkie, K. M.**; Diwekar, U. M. 2015. Uncertainty in clinical data and stochastic model for superovulation stage in in-vitro fertilization. Proceedings of 12th International symposium on Process Systems Engineering (PSE) and 25th European Symposium on Computer-Aided Process Engineering (ESCAPE), Copenhagen, Denmark, 31st May – 4th June, 2015.
- Yenkie, K. M.**; Diwekar, U. M. 2014. Comparison of optimal control methods for customized drug dosage prediction in superovulation stage of in-vitro fertilization. Proceedings of the 8th International conference on Foundations of Computer-Aided Process Design (FOCAPD), 807-812, Cle Elum, Washington, 13th-17th July, 2014.
- Yenkie, K. M.**; Diwekar, U. M.; Bhalerao, V. 2012. Modeling the superovulation stage in in-vitro fertilization. Proceedings of the 11th International symposium on Process Systems Engineering (PSE), 840-844, Singapore, 15th-19th July, 2012.
- Yenkie, K. M.**; Singh, K. P.; Jadhav, S.; Wangikar, P. P. Morphological model to correlate morphology and metabolism in Actinomycetes, Chemference 2010, Session 5:Bioprocess Engineering, S-501, Kanpur, UP, India.

Book Chapter

- Diwekar, U. M.*; Nisal, A.; **Yenkie, K. M.** Customized Modeling and Optimal Control of Superovulation stage in in-vitro fertilization (IVF) treatment. Book Chapter in Control Applications for Biomedical Engineering Systems. Elsevier (*accepted*)

Conference Presentations, Posters, Abstracts and Attendance

Podium Presentations

- Schmidt, K.; D'Aloia, A.; Kodate, P. M.; **Yenkie, K. M.** Data Analytics and Optimization for Minimization of Chemotherapeutic Toxicity. *AICHE Annual Meeting, 2019, 510g, Orlando, FL.*
- Yenkie, K.M.**; Burnham, S.; Zia, R.; Cabezas, H. Generation of Wastewater Treatment Networks: Integrating Process efficiency, economics and sustainability. *AICHE Annual Meeting, 2019, 670g, Orlando, FL.*
- Yenkie, K. M.** Enhancement of Chemical Engineering Education through Design Thinking: Integration of Theory and Cyber-Assisted Methods. *AICHE Annual Meeting, 2019, 273f, Orlando, FL.*
- Yenkie, K.M.**; Burnham, S.; Zia, R.; Cabezas, H.; Friedler, F. Generation of Wastewater Treatment Networks: Process efficiency, economics and sustainability. 19th European Roundtable for Sustainable Consumption and Production (ERSCP), 10/2019, UPC, Barcelona, Spain.
- Yenkie, K. M.**; Chea, J. D.; Slater, C. S.; Savelski, M. J. Roadmap for Solvent Recovery, Reuse, and Recycling in Industries. 19th European Roundtable for Sustainable Consumption and Production (ERSCP), 10/2019, UPC, Barcelona, Spain.
- Yenkie, K. M.** Enhanced Undergraduate Learning through Integration of Theory and Computational Tools. CACHE 50th Anniversary Meeting, Future of Cyber Assisted Chemical Engineering Education, 07/2019, Breckenridge, CO.
- Yenkie, K. M.**, Chea, J. D.; Slater, C. S.; Savelski, M. J. Framework for Solvent Recovery, Recycling and Reuse in Industries. *ACS Green Chemistry and Engineering Conference, 06/2019, Reston, Virginia.*
- Pierce, V.; Christon, A.; Russ, M.; Stengel, J.; Chea, J. D.; Slater, C. S.; Savelski, M. J.; **Yenkie, K. M.** Solvent Recovery Roadmap for Industries. *AICHE's Mid-Atlantic Student Regional Conference, 2019, Penn State University, PA.*
- D'Aloia, A.; Purcell, E.; Razze, M.; **Yenkie, K.M.** Optimal Chemotherapy Dosing Regimens: Balancing Tumor Degradation and Toxicity Effects. *AICHE's Mid-Atlantic Student Regional Conference, 2019, Penn State University, PA.*
- Burnham, S.; Zia, R.; **Yenkie, K.M.** Design and Optimization of Efficient Wastewater Treatment Networks. *AICHE's Mid-Atlantic Student Regional Conference, 2019, Penn State University, PA.*
- Christon, A.; Reilly, J.; Slater, C. S.; Savelski, M. J.; **Yenkie, K. M.** Framework for Solvent Recovery, Reuse and Recycling in Industries. *Sustainable Packaging Symposium, 2018, Rutgers University, NJ*
- Burnham, S.; **Yenkie, K.M.**, Cabezas, H.; Friedler, F. Design and Optimization for Generation of Efficient Wastewater Treatment Networks. *Sustainable Packaging Symposium, 2018, Rutgers University, NJ*

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- Dunn, I. C.; **Yenkie, K.M.** Prediction of Optimal Chemotherapy Dosing Regimens: Balancing Tumor Degradation and Toxicity Effects. *AICHE Annual Meeting, 2018*, 97a, Pittsburgh, PA.
- Yenkie, K. M.**; Dailey, J. M.; Burnham, S. Generating Wastewater Treatment Networks: An integrated approach comprising of contaminant properties, technology suitability, plant design and process optimization. *ICOSSE (International Congress on Sustainability Science and Engineering) Meeting, 2018*, Cincinnati, OH.
- Dunn, I. C.; **Yenkie, K.M.** Optimization in Cancer Chemotherapy Regimens. *AICHE's Mid-Atlantic Student Regional Conference, 2018*, Princeton University, NJ. (awarded first prize in paper presentation competition)
- Dailey, J. M.; Burnham, S.; **Yenkie, K.M.** Design of Efficient Wastewater Treatment Networks for Municipal Wastewater Treatment. *AICHE's Mid-Atlantic Student Regional Conference, 2018*, Princeton University, NJ.
- Wu, W.; **Yenkie, K.M.**; Maravelias, C. T. General bio-separation superstructure optimization framework. *AICHE Annual Meeting, 2016*, 580e, San Francisco, CA.
- Yenkie, K.M.**; Diwekar, U. Stochastic optimal control for prediction of robust drug dosing policies in superovulation stage of in-vitro fertilization. *AICHE Annual Meeting, 2015*, 393d, Salt Lake City, UT.
- Yenkie, K. M.**; Diwekar, U. Stochastic optimal control for prediction of robust drug dosing policies in superovulation stage of in-vitro fertilization (ThB3b). *AICHE's 7th Annual Midwest Regional Conference, 2015*, IIT, Chicago, IL.
- Yenkie, K.M.**; Diwekar, U.; Linninger, A. Parameter estimation in cellular systems modeled as stochastic differential equations (ThB3f). *AICHE's 7th Annual Midwest Regional Conference, 2015*, IIT, Chicago, IL.
- Yenkie, K.M.**; Diwekar, U.; Linninger, A. Parameter estimation in cellular systems modeled as stochastic differential equations. *AICHE Annual Meeting, 2014*, 235g, Atlanta, GA.
- Yenkie, K.M.**; Diwekar, U. Uncertainty in clinical data and stochastic model for in-vitro fertilization. *AICHE Annual Meeting, 2014*, 376f, Atlanta, GA.
- Doshi, R.; Diwekar, U.; Benavides, P. T. ; **Yenkie, K. M.**; Cabezas, H. 2014. Maximizing sustainability of ecosystem model through socio-economic policies derived from multivariable optimal control theory. *AICHE Annual Meeting, 2014*, 562e, Atlanta, GA.
- Yenkie, K. M.**; Diwekar, U. Comparison of different methods for predicting customized drug dosage in superovulation stage of in-vitro fertilization (T1B3). *AICHE's 6th Annual Midwest Regional Conference, 2014*, UIC, Chicago, IL.
- Yenkie, K. M.; Diwekar, U. Comparison of different methods for predicting customized drug dosage in superovulation stage of in-vitro fertilization. *AICHE Annual Meeting, 2013*, 666d, San Francisco, CA.
- Yenkie, K.M.**; Diwekar, U.; Linninger, A.; Kim, S. A new method for parameter estimation in stochastic differential equations. *AICHE Annual Meeting, 2013*, 589e, San Francisco, CA.
- Yenkie, K.M.**; Diwekar, U. Comparison of different methods for predicting customized drug dosage in superovulation stage of in-vitro fertilization. *INFORMS Healthcare 2013*, MC-06(2), Chicago, IL.
- Yenkie, K. M.**; Diwekar, U. Optimal control for predicting drug dosage in superovulation stage of in-vitro fertilization. *AICHE's 5th Annual Midwest Regional Conference, 2013*, Fr2D(1), IIT, Chicago, IL.
- Yenkie, K. M.**; Diwekar, U.; Bhalerao, V. Modeling the superovulation stage in in-vitro fertilization (IVF). *AICHE Annual Meeting, 2012*, 312b, Pittsburgh, PA.
- Yenkie, K. M.**; Diwekar, U. Optimal control for predicting drug dosage in superovulation stage of in-vitro fertilization. *AICHE Annual Meeting, 2012*, 744ev, Pittsburgh, PA.
- Yenkie, K. M.**; Diwekar, U. Optimal control for predicting drug dosage in superovulation stage of in-vitro fertilization. *INFORMS Annual Meeting, 2012*, TD-20(2), Phoenix, AZ.
- Yenkie, K. M.**; Diwekar, U. Stochastic optimal control in batch crystallization applying Ito Processes. *AICHE Annual Meeting, 2011*, 131c, Minneapolis, MN.

Poster Presentations

- Stengel, J.; Lehr, A.; Pierce, V.; Chea, J. D.; Slater, C. S.; Savelski, M. J.; **Yenkie, K. M.** Systematic Framework for Solvent Recovery, Reuse, and Recycling in Industries. *AICHE Annual Meeting, 2019*, 372r, Orlando, FL. (presenting students were ranked top 5 among 149 participants in Computing & Systems Technology poster competition)
- Yenkie, K.M.**; Pimentel, J.; Orosz, A.; Friedler, F. Systematic Synthesis of Wastewater Treatment Networks Using the P-Graph Approach. *AICHE Annual Meeting, 2019*, 562al, Orlando, FL.

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3. Lehr, A.; Stengel, J.; Chea, J. D.; Slater, C. S.; Savelski, M. J.; Yenkie, K. M. Evaluation of Solvent Recovery Options for Economic Feasibility through a Superstructure-Based Framework. *AIChE Annual Student Conference 2019*, Orlando, FL. (presenting undergraduate students (underlined) won 3rd place in Computing and Process Control Category)
4. Lynch, H.; Purcell, E.; Schmidt, K.; Kodate, P. M.; **Yenkie, K. M.** Application of Machine Learning Methods to Improve Leukemia Diagnostics. *AIChE Annual Student Conference 2019*, Orlando, FL
5. **Yenkie, K. M.**, Chea, J. D.; Russ, M.; Stengel, J.; Pierce, V.; Christon, A. Solvent Recovery and Reuse for Efficient and Sustainable Industrial Manufacturing Practices. *ACS Green Chemistry and Engineering Industrial Roundtable Poster Session*, 06/2019, Reston, Virginia.
6. Pace, A.; Work, H.; **Yenkie, K.M.** Optimizing the diagnostics and treatment for irritable bowel syndrome (IBS). *AIChE's Mid-Atlantic Student Regional Conference, 2019*, Penn State University, PA.
7. Russ, M.; Stengel, J.; Pierce, V.; Christon, A.; Slater, C. S.; Savelski, M. J.; **Yenkie, K. M.** A case study for DME (Dimethoxy ethane) recovery. *AIChE's Mid-Atlantic Student Regional Conference, 2019*, Penn State University, PA.
8. McCahill, A.; Moskalow, G.; Zia, R.; Burnham, S.; Lubelski, Z, **Yenkie, K.M.** Effective Design of Wastewater Treatment Systems Under Regional Limitations and Influences. *Sustainable Packaging Symposium, 2018*, Rutgers University, NJ.
9. Dunn, I. C.; **Yenkie, K.M.** Optimization in Cancer Therapeutics: Model Integration for Tumor Dynamics and Myelosuppression to Predict Chemotherapy Dosing Profiles, *AIChE Annual Meeting, 2018*, 182o, Pittsburgh, PA.
10. Burnham, S.; Dailey, J. M.; **Yenkie, K.M.** Design and Optimization for Generation of Efficient Wastewater Treatment Networks. *AIChE Annual Student Conference 2018*, Pittsburgh, PA.
11. Burnham, S.; Dailey, J. M.; **Yenkie, K.M.** Design of Efficient Wastewater Treatment Networks in the Pharmaceutical Industry. *ISPE New Jersey Chapter's Student Poster Competition, 2018*, Bristol-Myers Squibb, New Brunswick, NJ.
12. Dunn, I. C.; Schwenger, M. S.; Vandergrift, S. M.; **Yenkie, K.M.** Modeling and optimization in Cancer Therapeutics. *AIChE Delaware Valley Section's Student Poster Symposium, 2017*, FMC Towers, Philadelphia, PA.
13. Dailey, J. M.; Giddings, C. S.; **Yenkie, K.M.** Design and optimization for generation of efficient wastewater treatment networks. *AIChE Delaware Valley Section's Student Poster Symposium, 2017*, FMC Towers, Philadelphia, PA.
14. **Yenkie, K.M.**; Diwekar, U.; Bhalerao, V. IVF modeling, optimal control, and customized drug treatment: Results of the first Clinical trial. *AIChE Annual Meeting, 2017*, 585ae, Minneapolis, MN.
15. Wu, W.; **Yenkie, K.M.**; Maravelias, C. T. A superstructure-based assessment framework for downstream bio-separations. *AIChE Annual Meeting, 2017*, 246i, Minneapolis, MN.
16. Ng, R. T. L.; Won, W.; **Yenkie, K.M.**; Maravelias, C. T. Process systems engineering for biofuels and bio-based chemicals. *U. S. DOE Genomic Sciences Annual Meeting, 2017*. Washington DC.
17. **Yenkie, K.M.**; Wu, W.; Maravelias, C. T. Assessment of bioseparation technology options for bio-based chemicals generated from microbial cultures. *AIChE Annual Meeting, 2016*, 228dg, San Francisco, CA.
18. **Yenkie, K.M.**; Diwekar, U. Uncertainty in clinical data and stochastic model for in-vitro fertilization. *Health Systems Optimization Workshop at Northwestern University, 12-13 September, 2014*.
19. **Yenkie, K. M.**; Diwekar, U. Mathematical perspective to enhance success rate of in-vitro fertilization by modeling and optimal control. *UIC Research Forum, 8 April, 2014*.
20. **Yenkie, K. M.**; Diwekar, U.; Bhalerao, V. Modeling the superovulation stage in in-vitro fertilization (IVF). *Midwest Biomedical Engineering Career Conference (MBECC) 2013*, UIC, Chicago, IL.
21. **Yenkie, K. M.**; Diwekar, U.; Bhalerao, V. Modeling the superovulation stage in in-vitro fertilization (IVF). *UIC College of Medicine 2012 Research Forum*.
22. **Yenkie, K. M.**; Diwekar, U. Uncertainties and stochastic optimal control in batch crystallization for different types of objective functions. *AIChE Annual Meeting, 2012*, 599f, Pittsburgh, PA.

Conference and Symposiums Attended

1. 9th EESD (Engineering Education for Sustainable Development) Conference, Glassboro, NJ. June 3-6, 2018
2. 1st Annual Faculty Research Day at Rowan University, Glassboro, NJ. March 28, 2018.
3. UIC Women's Health Research Day, UIC Chicago, IL. April 28, 2014.
4. AIChE's 4th Annual Midwest Regional Conference, UIC, Chicago, IL. November 10-11, 2011.

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Research Grants

- 09/2019 Industry Sponsored **Engineering Clinic Project** from **ExxonMobil** Paulsboro Lubricants Oil Blending Plant, New Jersey (PI, 09/2019-08/2020, \$64,500)
- 07/2019 **KEEN** (Kern Entrepreneurship Education Network) & **Rowan ExEED** (Experiential Engineering) **Curricular Reimagination Grant** for Integrating Design Thinking in pedagogy (PI,07/2019-06/2020, \$2500)
- 02/2019 **Inspira Health Hack Grant** for research proposal on IBS (Irritable Bowel Syndrome) management tool in collaboration with Cooper Medical School (Co-PI, 02/2019-01/2020, \$20,000)
- 10/2018 **US EPA Pollution Prevention (P2) Grant** for Designing a Solvent recovery roadmap and Computation tool for Industries (PI, 10/2018 – 09/2020, \$289,000)
- 07/2018 **Rowan Seed Funding Award** for the project titled, 'Understanding Chemotherapeutic Cardiotoxicity in Cancer Patients' (PI, 07/2018 – 06/2019, \$10,000)

Professional Workshops/Courses Attended

- 08/2019 **Process Analytics and Machine Learning Workshop** offered during the 2019 FOPAM (Foundations of Process Analytics and Machine Learning) Meeting organized by Drs. S. Joe Qin (USC), Leo H. Chiang (DOW), and Richard D. Braatz (MIT).
- 06-08/2019 **Faculty Online Teaching Course** offered by the Rowan University Faculty Center for Excellence in Teaching & Learning and Rowan Online
- 06/2019 **PATH** (Process Engineering Academic Teaching Highway) **Workshop** offered during the 29th ESCAPE (European Symposium on Computer Aided Process Engineering) Meeting organized by Process Systems Enterprise (PSE) to include modeling in teaching chemical engineering courses.
- 05/2019 **EPA-P2 Grantee Meeting and Workshop** offered to current P2 grantees by the Pollution Prevention Program Coordinators, EPA Region 8 Office, Denver, CO.
- 04/2019 **NSF CAREER Proposal Writing Workshop** offered by NSF and Kansas State University in Arlington, VA. April 1-2, 2019
- 11/2018 **Sustainable Development Goals (SDGs) Workshop** offered during the 2018 AIChE Annual Meeting organized by Dr. Heriberto Cabezas (US EPA) supported by the United Engineering Foundation (UEF) grant to discuss the technical and engineering challenges of addressing the United Nations 17 SDGs.
- 2018-19 **Innovation & Entrepreneurship Faculty Certificate Program 2018-19** offered by Rowan Faculty Center for Excellence in Teaching & Learning and the Experiential Engineering Department, Rowan University.
- 08/2018 **Chemours Faculty Workshop on Process Safety** offered by Center for Chemical Process Safety (CCPS) of the American Institute of Chemical Engineers (AIChE) at Fayetteville, NC.
- 08/2018 **National Effective Teaching Institute's NETI-1 Faculty Workshop** offered by the American Society for Engineering Education (ASEE) at Philadelphia, PA.
- 05/2018 **NIH Seminar and Workshops** on Grant Writing in Washington, D.C., May 1-4, 2018.

Professional Society Memberships

- 2019 - Present American Chemical Society (ACS)
- 2019 - Present American Society for Engineering Education (ASEE)
- 2011 - Present American Institute of Chemical Engineers (AIChE)
- 2011 - Present AIChE's Computing and Systems Technology (CAST) Division
- 2018 – Present AIChE's Environmental Division
- 2012 - Present Institute for Operations Research and Management Sciences (INFORMS)
- 2017 - Present AIChE's Delaware Valley Section (DVS)
- 2015 – 2017 University of Wisconsin – Postdoctoral Association (UWPA)
- 2011 - 2015 AIChE's Chicago Local Section
- 2012 - 2013 Alpha Eta Mu Beta (AEMB) - National Biomedical Engineering Honor Society

Curriculum Vitae

Software Skills

Programming Languages: Matlab, GAMS, Fortran 77, C, Visual Basic 6.0

Software and Packages: SuperPro Designer, OriginLab, HPC – High-performance and parallel computing, Cytoscape, Open-Flux, XL Data Analytics, GetData, Simulink, P-graph Studio, SNS-LIN, SimaPro, R Studio

Bioinformatics tools:

Databases – KEGG, METACYC, miRBase, GenBank, EcoCyc, Swiss-Prot, etc.

Sequence alignment tools – BLAST, FASTA, DIALIGN

Heuristic optimization tools: Genetic algorithm and Simulated annealing

Applications: Microsoft Office, Microsoft Visual Studio, LaTeX

Experimental Skills

-IR(Infrared) Spectroscopy

-FBRM(Focused Beam Reflectance Measurement)

-Reaction Calorimeter

-PVM(Particle Vision Microscopy) Imaging

Languages

English, Hindi, Marathi and German

08/2005 - 05/2008 **Higher Diploma in German Language, Department of Foreign Languages, RTM Nagpur University**
3rd position in the three-year course (certificate course, junior and higher diploma)

Professional Services

08/2019 – present Member of the Chemical Engineering Department Head Search Committee, Rowan University

2019 Session chair & co-chair for 2019 AIChE Annual Meeting, Orlando, FL

- *Data-Driven Techniques for Dynamic Modeling, Estimation, and Control (CAST 10B)* - Chair

- *Applied Math for Energy and Environmental Applications (CAST 10D)* – Co-chair

- *Fundamentals of Food, Energy, and Water Systems (Environmental Division)* - Chair

07/2019 Session chair at the 9th International Conference on Foundations of Computer-Aided Process Design (FOCAPD), Copper Mountain, CO

- *Sustainable Design and Energy Systems*

06/2018- present Member of AIChE YPC's (Young Professionals Committee) Publications Subcommittee

09/2017- present Member of Academic Awards Subcommittee of AIChE-DVS (Delaware Valley Section)

08/2018 – 03/2019 Member of the Faculty Search Committee, Department of Chemical Engineering, Rowan University

2018 Session co-chair for 2018 AIChE Annual Meeting, Pittsburgh, PA

- *Sustainable Energy Generation and Utilization in System Design (CAST 10A)*

- *Process Modeling and Identification (CAST 10B)*

2016 - 2018 Judge for Undergraduate Poster Sessions at 2018 (Pittsburgh, PA), 2017 (Minneapolis, MN) & 2016 (San Francisco, CA) AIChE Annual Meetings

10/2019 - present Reviewer for Computers and Chemical Engineering, Elsevier

10/2019 - present Reviewer for Journal of Process Control, Elsevier

07/2019 - present Reviewer for Chemosphere, Elsevier

06/2019 - present Reviewer for Current Opinion in Chemical Engineering, Elsevier

06/2019 - present Reviewer for MDPI Mathematics Journal

05/2019 Reviewer for Rowan's Division of University Research, SEED Funding Program

05/2019 – present Reviewer for IFAC (International Federation of Automatic Control) Conferences

06/2018 - present Reviewer for Chemical Engineering Research & Design, Elsevier

06/2017 - present Reviewer for Clean Technologies and Environmental Policy, Springer

10/2016 - present Reviewer for Journal of Applied Mathematics, Hindawi Publishing Corporation

Curriculum Vitae

- 2015** Session co-chair for 2015 AIChE Annual Meeting, Salt Lake City, UT
- *Design and Operations under Uncertainty-II (CAST 10A)*
- 2013 - 2014** Reviewer for the Bioengineering Student Journal at the University of Illinois at Chicago
- 2009 - 2010** Competitions Manager in Azeotropy, Annual Chemical engineering symposium at IIT Bombay
- *Prepared and conducted Chemical Engineering Quiz Competitions (online and onsite)*
- *Formulated and conducted Equipment Design problems*
- *Conducted technical paper and poster presentations*
- 2007 - 2008** Reviewer for the Technical Souvenir at L.I.T., Nagpur

Extra-curricular Activities and Interests

- 2017 - present** Member of the American Federation of Teachers (AFT) at Rowan University
- 2017 - present** Member of the Association of Asian Professionals at Rowan University (AAPRU)
- 2015 - 2017** Volunteer for Tzu Chi USA, Madison Chapter
- 2015 - 2017** Volunteer for Association for Indians in America (AIA), Madison chapter
- 2016 - 2017** Member of 'Saaz' the Indian Musical Club at UW-Madison
- 2015 - 2017** Part of the Singing team for Musical events at UW-Madison (IGSA Diwali Night, Geet Purvai)
- 2012 - 2014** Member of the Bioengineering Organizational Alliance at UIC
- 2012 - 2014** Volunteer for AIChE Chicago Local section
- 2011 - 2014** Member of Indian Graduate Students Association (IGSA) at UIC
- 07/2012** Volunteer for Juvenile Arthritis Foundation Conference in St. Louis, MO
- 10/2008** Winner of the Inter-hostel Carom General Championship at IIT Bombay
- 2008 - 2010** Member of the Stage Decoration and Planning Committee for Performing Arts Festival (PAF), IIT Bombay
- 01/2008** Represented LIT, Nagpur in Young Innovators choice competition (YICC), UICT, Mumbai
- 03/2008** Joint secretary in 'Umang' the annual social gathering of L.I.T., Nagpur
- 2004 - 2008** Member of the National Service Scheme (NSS) in L.I.T., Nagpur
- 2005 - 2008** Member of Team 'Pratibimb' the literary society of L.I.T., Nagpur