

It is an honor to be the College of Engineering and Science nominee for the 2019 University Senate Chair Award. Please find the data and details of my teaching, research, and service activities over the last five years below.

LIST OF COURSES TAUGHT AND THE OVERALL TEACHER EVALUATION FOR EACH COURSE

The list of courses and overall teaching evaluation for each course over the last five years are shown in the table below. My typical yearly schedule was to teach Numerical Methods (CMEN 425) to primarily juniors in the Fall, Mass Transport (CMEN 304) to seniors in the Winter, and Fluid Mechanics (CMEN 213) to sophomores in the Spring. The teacher evaluations over the last five years were fairly uniform across grade levels with an average of 3.85.

Quarter	Course Number	Course Title	Teacher Evaluation
Spring 2019	CMEN 213	Unit Operations – Design I (Fluid Mechanics)	TBD
Winter 2018-19	CMEN 304	Transport Phenomena (Mass Transport)	4.00
Fall 2018	CMEN 425	Numerical Methods for Chemical Engineers	3.93
Spring 2018	CMEN 213	Unit Operations – Design I (Fluid Mechanics)	3.62
Winter 2017-18	CMEN 304	Transport Phenomena (Mass Transport)	4.00
Fall 2017	CMEN 425	Numerical Methods for Chemical Engineers	4.00
Spring 2017	CMEN 213	Unit Operations – Design I (Fluid Mechanics)	3.74
Winter 2016-17	CMEN 304	Transport Phenomena (Mass Transport)	3.93
Fall 2016	CMEN 425	Numerical Methods for Chemical Engineers	3.93
Spring 2016	CMEN 213	Unit Operations – Design I (Fluid Mechanics)	3.77
Winter 2015-16	CMEN 304	Transport Phenomena (Mass Transport)	3.92
Fall 2015	CMEN 425	Numerical Methods for Chemical Engineers	3.94
Spring 2015	CMEN 213	Unit Operations – Design I (Fluid Mechanics)	3.71
Winter 2014-15	CMEN 522	Advanced Thermodynamics	3.80
Fall 2014	CMEN 425	Numerical Methods for Chemical Engineers	3.67
5-year average			3.85

The following comments from the anonymous student-faculty evaluation provide first-hand accounts of elements and qualities that I try to incorporate into courses.

- Dr. Sherer is amazing! He stimulates interest in any subject. He tries to add additional thinking by comparing material in class to real world examples, which other teachers don't do. He encourages questions to stimulate discussion, where other professors don't want other discussions. He gives a lot of work including homework and a quiz every day. This set up helps me because the material is seen multiple times. The exams are hard, but they are appropriate to the material and reasonable. With the added work that holds a high value of the total grade, this system works well for people that work hard and it works well for the people that do well on tests. Dr. Sherer is always open for questions, and is in his office when he says he will be. He is open for criticism, and always asks for feedback on what would make his class more effective. He also gives great advise and tries to help us any way that he possibly can. He truly cares about us. He is an absolutely essential part of the success of chemical engineers from Louisiana Tech University. His pushing and encouraging are the main reason I decided to stick with the program.
- This class has been one of the best of my college career. The quality of the lectures is unbelievable; the Mass Transfer lectures are ones that rival the quality of Dr. Ciccirelli's. Dr. Sherer is extremely organized

and outlines everything from the first day of class. The exams are reasonable for the material covered in class and the homework and quizzes directly match what was discussed in the lecture. Overall, this was an A+ experience. I am very fortunate to have taken this class with Dr. Sherer.

- Dr. Sherer is an excellent teacher who is well respected, shows concern for his students' knowledge, and does well at relaying difficult-to-understand material. Dr. Sherer also does an exceptional job at making the assignments and exams as efficient in learning and testing knowledge as possible.
- This teacher is one of the best I've ever had. He's always available in office hours and always willing to answer any questions. He was also very willing to work with a personal situation that came up for me, when not all of my teachers were, reducing the amount of stress that I had after missing a week of school. Cannot express how much I appreciate Dr. Sherer.

SELECTED LIST OF PUBLICATIONS, GRANTS, AND SIMILAR ACTIVITIES

In the past five years I had 12 peer-reviewed journal publications; 9 conference or symposium publications; 8 oral presentations at national meetings; 8 poster presentations at national meetings; and numerous oral and poster presentations at regional, state, and local meetings (not listed).

Peer-Reviewed Journal Publications

Joseph G, Heidarnajad F, and **Sherer E**, "Evaluating the cost-effective use of follow-up colonoscopy based on screening findings and age." *Computational and Mathematical Methods in Medicine*, **2019**: Article ID 2476565, 2019.

Carpenter G, Myers H, **Sherer E**, Evans K, and O'Neal P, "Closed loop intravenous drug administration using photoplethysmography." *IEEE Journal of Translational Engineering in Health and Medicine*, **6**: 1-8, 2018.

Cicciarelli B, **Sherer E**, and Melvin A, "ChemE Camp: A two-day workshop to increase student preparedness for chemical engineering curricula." *Chemical Engineering Education*, **52**: 187-196, 2018.

Sehdev A, **Sherer E**, Hui S, Wu J, and Haggstrom D, "Patterns of computed tomography surveillance in survivors of colorectal cancer at Veterans Health Administration facilities." *Cancer*, **123**: 2338-2351, 2017.

Journal impact factor: 5.649 (Ranking: 17/198 in Cancer Research)

Kordal R, Cahoy D, Minkabo S, and **Sherer E**, "Discovery Process – R&D lead time needed for innovation." *Technology Transfer and Entrepreneurship*, **3**: 32-39, 2016.

Sherer E, Fisher D, Barnd J, Jackson G, Provensale D, and Haggstrom D, "The accuracy and completeness for receipt of colorectal cancer care using Veterans Health Administration administrative data." *BMC Health Services Research*, **16**: 50, 2016.

Journal impact factor: 1.712 (Ranking: 27/212 in Health Policy)

Kordal R, Cahoy D, Koev B, and **Sherer E**, "Prevalence of serial inventors within academia." *Technology and Innovation*, **17**: 113-126, 2016.

Imler T, Morea J, Kahi C, **Sherer E**, Cardwell J, Johnson CS, Xu H, Ahnen D, Antaki F, Ashley C, Baffy G, Cho I, Dominitz J, Hou J, Korsten M, Nagar A, Promrat K, Robertson D, Saini S, Shergill A, Smalley W, and Imperiale T, "Multi-center colonoscopy quality measurement utilizing natural language processing." *The American Journal of Gastroenterology*, **110**: 543-552, 2015 (Corrigendum **110**: 1743, 2015).

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Journal impact factor: 10.755 (Ranking: 3/130 in Gastroenterology)

Magaña I, Yendluri R, Adhikari P, Goodrich G, Schwarz J, **Sherer E**, and O’Neal DP, “Suppression of the reticuloendothelial system using λ -carrageenan to prolong the circulation of gold nanoparticles.” *Therapeutic Delivery*, **6**: 777-783, 2015.

Journal impact factor: 3.027 (Ranking: 36/205 in Pharmaceutical Science)

Li C, **Sherer E**, Lewis L, and Bies R, “Clinical trial simulation to evaluate population pharmacokinetics and food effect: Capturing abiraterone and nilotinib exposures.” *Journal of Clinical Pharmacology*, **55**: 556-562, 2015.

Journal impact factor: 2.472 (Ranking: 74/252 in Pharmacology (medical))

Sale M and **Sherer E**, “A genetic algorithm based global search strategy for population pharmacokinetic/pharmacodynamics model selection.” *British Journal of Clinical Pharmacology*, **79**: 28-39, 2015.

Journal impact factor: 2.958 (Ranking: 28/252 in Pharmacology (medical))

Imperiale T, Juluri R, **Sherer E**, Glowinski E, Johnson C, and Morelli M, “A risk index for advanced neoplasia on the second surveillance colonoscopy in persons with previous adenomatous polyps.” *Gastrointestinal Endoscopy*, **80**: 471-478, 2014.

Journal impact factor: 6.210 (Ranking: 7/130 in Gastroenterology)

Conference or Symposium Publications

Husband H and **Sherer E**, “Simulation with PBPK model-guided controller for improved therapeutic exposure of doxorubicin.” *Journal of Pharmacokinetics and Pharmacodynamics*, **45**: S35, 2018.

Imperiale T, Myers L, Imler T, **Sherer E**, Larson J, and Kahi C, “Outcomes in veterans with advanced colorectal adenomas.” *Gastroenterology*, **154**: S-769, 2018.

Imperiale T, Myers L, **Sherer E**, Imler T, Kahi C, Larson J, and Ransohoff D, “Colorectal cancer outcomes in veterans with non-advanced neoplasia.” *American Journal of Gastroenterology*, **112**: S110-S113, 2017.

Imperiale T, Imler T, **Sherer E**, Kahi C, Larson J, Cardwell J, Johnson C, Antaki F, Ashley C, Baffy G, Cho I, Dominitz J, Hou J, Korsten M, Nagar A, Patel S, Kittichai P, Robertson D, Saini S, Shaw R, Shergill A, and Smalley W, “An electronic medical record-based scoring system for estimating the risk of advanced neoplasia in veterans.” *American Journal of Gastroenterology*, **111**: S105, 2016.

*2016 ACG award recipient in the area of CRC prevention

Imperiale T, Imler T, **Sherer E**, Kahi C, Larson J, Cardwell J, Johnson C, Antaki F, Ashley C, Baffy G, Cho I, Dominitz J, Hou J, Korsten M, Nagar A, Patel S, Promrat K, Robertson D, Saini S, Shaw R, Shergill A, and Smalley W, “Risk factors for advanced colorectal neoplasia in veterans.” *American Journal of Gastroenterology*, **111**: S136-S137, 2016.

Sehdev A, **Sherer E**, Hui S, Wu J, and Haggstrom D, “The quality of CT surveillance in resected colorectal cancer survivors at Veterans Health Administration facilities.” *Journal of Clinical Oncology*, **34**: supplement 4S, abstract 525, 2016.

Adhikari P, Eklund W, **Sherer E**, and O’Neal DP, “Assessment of multi-wavelength pulse photometry for non-invasive dose estimation of circulating drugs and nanoparticles.” *Progress in Biomedical Optics and Imaging - Proceedings of SPIE*, 9715, 2016.

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Sherer E, Carpenter W, Evans K, Grigsby H, and O’Neal DP, “Real-time pharmacokinetic analysis.” *Journal of Pharmacokinetics and Pharmacodynamics*, **42**: S, 2015.

Sherer E, Sale M, and Bies R, “Three case studies of pharmacokinetic model building using genetic algorithms.” *Journal of Pharmacokinetics and Pharmacodynamics*, **41**: S, 2014.

Oral Presentations at National Meetings

Sherer E, “Pharmacometric model guided control for improved therapeutic exposure”, Paper No. 207b, AIChE 2018 Annual Meeting, Pittsburgh, PA, November 2018.

Joseph G and **Sherer E**, “Cost-effective use of follow-up colonoscopies in colorectal cancer screening”, Infinite Possibilities Conference, Washington DC, April 2018.

Heidarnejad F and **Sherer E**, “Model-based identification and evaluation of abdominal aortic aneurysm surveillance and surgery strategies on the population level”, Paper No. 709a, AIChE 2016 Annual Meeting, San Francisco, CA, November 2016.

Sherer E, “Model predictive control of drug exposure enabled by real-time pharmacokinetics”, The sixth annual Indiana Clinical and Translational Sciences Institute (CTSI) symposium on disease and therapeutic response modeling, Indianapolis, IN, November 2016.

Imperiale T, *Imler T*, **Sherer E**, *Kahi C*, *Larson J*, *Cardwell J*, *Johnson C*, *Antaki F*, *Ashley C*, *Baffy G*, *Cho I*, *Dominitz J*, *Hou J*, *Korsten M*, *Nagar A*, *Patel S*, *Kittichai P*, *Robertson D*, *Saini S*, *Shaw R*, *Shergill A*, and *Smelley W*, “An electronic medical record-based scoring system for estimating the risk of advanced colorectal neoplasia in Veterans”, Paper 9 (President’s plenary session 2), 2016 ACG Annual Scientific Meeting & Postgraduate Course, Las Vegas, NV, October 2016.

*2016 ACG award recipient in the area of CRC prevention

Sherer E, “A genetic algorithm based global search strategy for population pharmacokinetic / pharmacodynamic model selection”, ASCPT webinar series, April 2016.

Heidarnejad F and **Sherer E**, “Optimizing surveillance intervals and surgery for patients diagnosed with abdominal aortic aneurysm (AAA)”, Paper No. 543f, AIChE 2015 Annual Meeting, Salt Lake City, UT, November 2015.

Carpenter G, **Sherer E**, *O’Neal DP*, *Magana I*, *Adhikari P*, *Grigsby H*, and *Evans K*, “Development and Implementation of a pharmacokinetic model as the target equation for a PID control system”, MMA MathFest 2015, Washington DC, August 2015.

Poster Presentations at National Meetings

Husband H and **Sherer E**, “Simulation with PBPK model-guided controller for improved therapeutic exposure of doxorubicin”, American Conference on Pharmacometrics (ACoP-9), San Diego, CA, October 2018.

Carpenter G, *Myers H*, **Sherer E**, *Evans K*, and *O’Neal DP*, “A method for reduction of variability in drug delivery”, 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Honolulu, HI, July 2018.

Leehy C, **Sherer E**, *Rodrigues J*, and *Poh S*, “Modeling concentration flux in nanoparticle-assisted drug delivery”, 255th National ACS Conference, New Orleans, LA, March 2018.

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Sherer E, “Application of a flipped classroom for teaching programming in a numerical methods course”, American Society of Engineering Education Summer School for Chemical Engineering Faculty, North Carolina State University, Raleigh, NC, August 2017.

Pillai N, **Sherer E**, Sale M, and Bies M, “Application of global search methods for parameter estimation in models with poorly defined objective function surfaces”, Abstract 7356, Annual Meeting of the Population Approach Group in Europe (PAGE), Budapest, Hungary, June 2017.

Sehdev A, **Sherer E**, Hui S, Wu J, and Haggstrom D, “The quality of CT surveillance in resected colorectal cancer survivors at Veterans Health Administration facilities”, Abstract #160076, 2016 Gastrointestinal Cancers Symposium, San Francisco, CA, January 2016.

Sherer E, Carpenter W, Evans K, Grigsby H, and O’Neal DP, “Real-time pharmacokinetic analysis”, T-40, American Conference on Pharmacometrics (ACoP) 2015, Crystal City, VA, October 2015.

Sherer E, Sale M, and Bies R, “Three case studies of pharmacokinetic model building using genetic algorithms”, M-064, American Conference on Pharmacometrics (ACoP) 2014, Las Vegas, NV, October 2014.

Grants

I have one active grant.

9/2017 – 8/2020, Quantification of colonic neoplasia growth and impact on colonoscopy follow-up, National Institutes of Health (National Cancer Institute), \$360,665.

It is notable that this is the only active grant at Louisiana Tech from the National Institutes of Health (NIH); it also represents the only NIH funding to a Louisiana Tech University PI/co-PI in the past 3 years.

SELECTED LIST OF COMMUNITY/UNIVERSITY SERVICE ACTIVITIES

I have served the profession over the last five years by serving three times as a panelist for the NSF Graduate Research Fellowship Program; as an ad hoc reviewer for *American Journal of Applied Sciences*, *American Journal of Biostatistics*, *British Journal of Clinical Pharmacology*, *Chemical Engineering Science*, *Clinical and Experimental Gastroenterology*, *Epidemiology – Theory, Research and Practice (book)*, *IMA Journal of Applied Mathematics*, *Journal of Clinical Gastroenterology*, *Journal of Pharmacokinetics and Pharmacodynamics*, *Open Access Surgery*, and *Pharmaceutical Research*; and by presenting a tutorial on multiple objective genetic algorithms at ACoP6.

I have served the university over the last five years as the Louisiana Region II Science and Engineering Fair Treasurer and Judge; as Sigma Xi Vice President; and by serving on eleven MS and PhD committees.

I have served the College of Engineering and Science over the last five years by being a Leadership Team Associate; serving on three chemical engineering tenure-track faculty search teams, two biomedical engineering tenure-track faculty search teams, and two statistics tenure-track faculty search teams; and judging for the Freshman Design Expo.

I have served chemical engineering program as the MS-CMEN coordinator since 2015 and the CMEN program chair since 2016. I am also the academic advisor for 20-30 chemical engineering students.