I am truly honored to be nominated for the annual F. Jay Taylor Undergraduate Teaching Award. I do meet the criteria stated in the nomination letter.

I am enthralled by the study of organic chemistry, the major building blocks of life as we know it. From the basics of biological molecules and processes to the prevalence of plastics and other polymeric materials, organic molecules and reactions are everywhere. As a teacher, I want to pass on this fascination and appreciation of organic molecules to the students I have under my tutelage. I believe the instruction of undergraduates is an honor and a tremendous responsibility. About half the students in my lecture classes are from the College of Natural Sciences having aspirations to become Physicians, Dentists, Pharmacists, and Environmental Scientists. These students must develop a firm foundation in organic chemistry in order to fully understand the intricacies of their chosen professions. It is essential that the students embrace the connections between various classes of organic compounds and how each has a role in the overall biological processes of life. The other half of the students in my lecture classes are students from the College of Engineering and Sciences. Although some of these students will become medical professionals as well, many will be working in chemical processing and development of more efficient and environmentally responsible manufacturing. These students also need a firm foundation in organic (and polymer) chemistry in order to understand and recognize when various classes of compounds aid one another or when they conflict and potentially can do harm. The student needs to have the knowledge of the physical and chemical properties of each class of organic compound for safety and productivity. Formative and summative assessments are achieved by pre-lecture review of material to be covered, in-class discussion and practice, building and manipulating 3-D models, assigned on-line homework problems, encouragement of seeking extra assistance by visiting during office hours, and written exams where each student has to construct answers on their own. Real-life examples of organic molecules are integrated into each lecture and current chemical news items are discussed when they occur (e.g. recent Propofol deaths, fires and explosions near Houston TX in March/April 2019). I strive to support and encourage students to go beyond merely learning the testable material so that they will become excellent problem-solvers by integrating the principles and common characteristics into new challenges.

For students enrolled in the organic lab courses (most of whom are enrolled in the lecture classes), commonly used techniques, including spectroscopic analyses, are taught and used repeatedly so that the students become familiar with laboratory work associated with most industrial laboratories. Beyond “cook-book” experimental procedures, the students are encouraged to take ownership of their work by planning what order certain parts of the lab experiment can take place (e.g. delay identifying and characterizing products until the following week rather than remain an extra 15-30 minutes on the day of the experiment). Safe practices in handling chemicals and the resulting chemical waste are always emphasized -- there is NO “AWAY”, all chemicals go somewhere! It is my desire that each student who passes through the lab will have a better appreciation for the importance of environmental responsibility.

Organic Chemistry is a traditionally difficult subject at any school with any instructor. Teaching Organic Chemistry takes patience, endurance, repetition and rigor. It is like teaching a foreign language in that the students must learn a new vocabulary and a new way of recognizing focused patterns. Due to the larger class sizes, difficult material, and my insistence that high standards and rigor must be maintained, my overall University evaluation numbers have suffered. The lowest numbers are generally in the first of the three Organic classes but steadily increase as the year goes along. In addition, I have the students evaluate the major topics covered each quarter via a Moodle Questionnaire (rankings Strongly Agree (4 pts) through Strongly Disagree (0 pts)) and track how well the student feels that he understands the concepts in question. The student may not enjoy the course (lower University Evaluation) but will admit that he did actually learn what was expected (higher Moodle Evaluation). The results are noted in each case and used as a guide to provide additional instruction on the lower ranking concepts for the next time the course is offered.

I begin each quarter by affirming that everyone has a 100-A average and that they should adopt that positive outlook. Each quarter is a clean slate and I "erase" any memory of past performance. I use an absolute grading scale so in theory, everyone can make an A. I cite studies about positivity and the effects on job performance and strive to be encouraging at all interactions with the students. Students are encouraged to seek help at the first sign of trouble. I do expect students to give their best and that includes active engagement and participation. It is an honor to be guiding the next generation of health professional and chemical processing engineers as well as chemists. I take this responsibility seriously by maintaining high standards in my classes. Louisiana Tech's mission statement affirms that "Louisiana Tech maintains as its highest priority the education and development of its students in a challenging, yet safe and supportive, community of learners." I have described how I uphold this mission statement in the description of my teaching methods.

I was invited to join Louisiana Tech in Fall 2003 as a one-year Acting Instructor in anticipation of the faculty Lecture rank being instituted the following year. I applied and received an appointment as Lecturer in Fall 2004 and have continued at that rank since then. (My application for Senior Lecturer recently has been approved through the Dean's level). Overall, I have taught 12 different courses: mostly sophomore level Organic Chemistry and Lab classes with an occasional General, Introductory, or upper division Chemistry class. I have taught over 9,800 students generating nearly 17,400 Student Credit Hours (SCH) since Fall 2003. **Detailed Teaching Information, TABLE A**, is attached on page 5. The University Evaluation numbers for the last three quarters are: 3.6 (SP), 3.1 (F), 3.5 (W), and with a detailed breakdown shown in a chart below. The retention rates for the last three years are displayed in a second chart. The retention rates of the classes range from 64.3% to 100% with the average usually over 90%. Some attrition is expected as students decide to pursue other careers opportunities or have to adjust their course loads for various reasons.

Most Recent University Evaluations (Number of students who responded)

SPRING 2018	FALL 2018	WINTER 2019
252-1 Organic: 3.5 (23)	250-1 Organic: 3.0 (27)	251-1 Organic: 3.4 (31)
252-2 Organic: 3.5 (17)	250-2 Organic: 3.0 (3)	252-2 Organic: 3.3 (27)
254-5 Org. Lab: 3.7 (11)	250-3 Organic: 3.3 (35)	253-1 Org. Lab: 3.5 (12)
		253-3 Org. Lab: 3.9 (14)
		409-1 Adv. Organic: 3.4 (9)

CHEMISTRY Courses Taught: Enrollments (Retention%)

	2018-2019	**2017-2018**	**2016-2017**
Summer		251-30 Organic: 20 (75%)	252-60 Organic: 32 (87.5%) 254-61 Org. Lab: 13 (100%)
Fall	250-1 Organic: 58 (88%) 250-2 Organic: 18 (72.2%) 250-3 Organic: 62 (98.4%) 498A Research 8 (100%)	250-1 Organic: 62 (91.9%) 250-2 Organic: 62 (90.3%) 251-1 Organic: 24 (83.3%) 490 Seminar: 1 (100%)	101-2 General: 65 (96.9%) 250-1 Organic: 60 (88.3%) 250-2 Organic: 41 (87.8%) 251-1 Organic: 28 (64.3%)
Winter	251-1 Organic: 62 (85.5%) 252-2 Organic: 54 (79.6%) 253-1 Org. Lab: 22 (100%) 253-2 Org. Lab: 22 (100%) 409-1 Adv. Organic: 15 (100%) 490 Seminar: 5 (80%) 498A Research: 5 (100%)	251-1 Organic: 36 (100%) 252-2 Organic: 63 (90.5%) 253-1 Org. Lab: 22 (100%) 253-3 Org. Lab: 21 (90.5%) 253-4 Org. Lab: 10 (100%) 253-7 Org. Lab: 21 (100%) 490 Seminar: 1 (100%)	251-1 Organic: 43 (83.7%) 252-2 Organic: 42 (95.2%) 253-1 Org. Lab: 20 (100%) 253-2 Org. Lab: 24 (100%) 254-1 Org. Lab: 12 (91.7%)
Spring	252-1 Organic: 40 252-2 Organic: 43 254-5 Org. Lab: 22 498A Research: 5	252-1 Organic: 43 (95.3%) 252-2 Organic: 36 (97.2%) 254-5 Org. Lab: 19 (94.7%) 490 Seminar: 9 (100%)	252-1 Organic: 50 (88%) 252-2 Organic: 62 (96.8%) 254-2 Org. Lab: 25 (96%) 254-4 Org. Lab: 22 (100%) 254-5 Org. Lab: 17 (100%)

The following are a few excepts from student comments:

> Dr. Cox teaches organic the easiest way for beginners to learn the material.
>
> The worksheets we did in class were very helpful, not only to cement the material in our minds, but to help us learn how Dr. Cox liked things drawn. She was always on hand to

answer questions as we did the sheets which was great. The stereochemistry sets were also helpful in visualizing molecules. Dr. Cox always answered my emails quickly.

Dr. Cox does a good job at explaining the information, especially with organic being a difficult chemistry to understand.

In addition to classroom and laboratory instruction, I have received the following funding for education enhancement:

"Nuclear Magnetic Resonance Spectroscopy in the Undergraduate Curriculum in Louisiana Tech University", Board of Regents Support Fund, Enhancement Program, Co-PI, $196,351, June 2019-June 2020.

"Improvements to the Sophomore, Junior, and Senior Level Laboratory Experience at Louisiana Tech University", Board of Regents Support Fund, Traditional Enhancement; Co-PI, $70,988 plus $12,750 COES match, June 2014-June 2015.

"Refurbishing the Chemistry Computer Lab", Louisiana Tech Student Technology Fee Board, PI, $23,365 plus $2,577 COES match, November 2012-May 2013.

"Infrared Spectroscopy Use in Undergraduate Organic Labs", Board of Regents Support Fund, Traditional Enhancement, PI, $55,950 plus $6,384 COES match, August 2008-June 2009.

"Online Supplemental Organic Chemistry", 2007 Summer Instructional Innovations Grant, Louisiana Tech University, Co-PI, $3450, June 2007-May 2008

In conclusion, I have devoted my teaching career to upholding high standards of achievement while giving "priority to the education and development of Louisiana Tech students in a challenging, yet safe and supportive" environment. I have endeavored to teach concepts that are fundamental and vital to the students' career choices. I have encouraged and supported students in becoming better analytical problem-solvers so they may work independently and be leaders in their work environment. Again, I am honored to be nominated and appreciate this opportunity to apply for the F. Jay Taylor Undergraduate Teaching award.

TABLE A. Detailed Teaching Information

Course	Course Number	Total Sections since Fall 2003	Total Enrollments	SCH's
General Chemistry	CHEM 100	2	176	352
General Chemistry	CHEM 101	3	215	430
Introduction to Inorganic Chemistry	CHEM 120	6	399	1197
Introduction to Organic and	CHEM 121	3	38	114
Organic Chemistry	CHEM 250	45	2635	5270
Organic Chemistry	CHEM 251	47	2234	4468
Organic Chemistry	CHEM 252	28	1405	2810
Organic Chemistry Lab	CHEM 253	82	1643	1643
Organic Chemistry Lab	CHEM 254	55	1013	1013
Advanced Organic Chemistry	CHEM 409/503C	2	21	63
Chemistry Seminar	CHEM 490	4	17	17
Undergraduate Research	CHEM 498	3	18	18
TOTAL		280	9814	17395