Dr. James Upton Dyer

PROFESSIONAL EXPERIENCE

Dates of Employ	Hr/Wk	Title, Location, Overview of Responsibilities
8/2022 – present	40	Visiting Assistant Professor of Organic Chemistry, *Regis University, Denver, CO* Courses Taught: Organic Chemistry Lab, Health Related Science Lab
8/2020 – 5/2022	40	Teacher, Math/Chemistry, *Colorado Springs Christian School, Colorado Springs, CO* - Courses Taught: Algebra, Geometry, Honors Chemistry 2 - Lecturer-CU Succeed (Gold): MATH 1110, CHEM 2031, and CHEM2038
7/2014 – 6/2020	40	Professor (2014), *Math and Science Dept., Corban University, Salem, OR* - Courses Taught: General Chemistry (w/ Lab), Organic Chemistry (w/ Lab), Biochemistry, and Freshman Seminar.
9/2017 – 6/2019	9	Chemistry Teacher, *High School, Abiqua Academy, Salem, OR* - Courses Taught: Chemistry (w/ Lab)
7/2016 – 6/2017	--	Sabbatical Year, *Corban University, Salem, OR* - Visiting Professor, *Chung-Buk National University, CheongJu, South Korea*
7/2008 – 6/2014	40	Associate Professor (2008), *Math and Science Dept., Corban University, Salem, OR* - Courses Taught: General Chemistry (w/ Lab), Organic Chemistry (w/ Lab), Biochemistry, and Freshman Seminar.
8/2007 – 6/2008	40	Assistant Professor, *Math and Science Dept., Corban University, Salem, OR* - Courses Taught: Organic Chemistry (w/ Lab), College Algebra, and Pre-Calculus
9/2005 – 8/2007	40	Asst. Prof. (Adjunct/Full Time), *Chem. Dept., Western Oregon Univ., Monmouth, OR* - Courses Taught: Introductory Chemistry, General Science (honors class), Introductory, General Chemistry, and Earth Science Labs
5/2004 – 5/2005	15-20	PIE Fellow (PIE-Partners Investigating the Environment), *Biology Department (Interdepartmental), Ball State University, Muncie, IN* - The PIE program is funded by the National Science Foundation's (NSF) GK-12 program. Assigned to Crispus Attucks Middle School in Indianapolis, IN
8/2003 – 12/2003	15-20	Assistant to the Director, Lennox Head, Australia, *International Programs, Ball State University, Muncie, IN*
1/2004-5/2004, 2001-8/2003	15-20	Instructor/Graduate Assistant, *Chemistry Dept., Ball State University, Muncie, IN* - Courses Taught: Introduction to Chemistry, General Chemistry 1, People and Chemistry, General Chemistry 1 & 2 Lab, General, Organic, and Biochemistry for the Health Sciences Lab
6/1998-9/2001	40	Instructor of Chemistry, *Dept. of Chemical Technology, ITT Tech, Indianapolis, IN* - Courses Taught: Introduction to Chemistry, Microsoft Office, Algebra, Applied Analytical Chemistry, Instrumentation I, Instrumentation II, Physical Chemistry, Environmental Chemistry, Working in the Industry, & Capstone Projects
12/1997-7/1998, 8/1994-1/1996	40	Quality Assurance/Quality Control Officer/Chemist, *Hoosier Microbiological Laboratories, Muncie, IN*
9/1997-7/1998	9	Math Instructor, *Department of Math & Science, IVY Tech State College, Muncie, IN* - Courses Taught: Intermediate Algebra, Geometry and Trigonometry
8/1997-10/1997	40	Math Teacher (9-week contract), *Wes-Del High School, Gaston, IN* - Courses Taught: Geometry, Algebra, Applied Math
8/1996-12/1996	40	Instructor/Laboratory Coordinator, *Chemistry Dept., Ball State Univ., Muncie, IN*
8/1994-7/1997	6-40	Instructor/Asst. Director of Education, *Sylvan Learning Center, Muncie, IN*
8/1992-12/1994	15-20	Graduate Assistant, *Chemistry Department, Ball State University, Muncie, IN*
6/1991-8/1992	40	Actuarial Assistant, *Midland Mutual Life Insurance Company, Columbus, OH*
8/1989-5/1991	15-20	Graduate Assistant, *Mathematics Department, Ball State University, Muncie, IN*

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EDUCATION

7/2005	Ed.D. – Science (Chemistry), *Ball State University, Muncie, IN* Dissertation: Evaluation of Physical Chemistry in Practice (PCIP) DVD Modules Advisor: Dr. Marcy Hamby Towns
9/2001	M.P.M. – Project Management, *ITT Technical Institute, Indianapolis, IN*
12/1996	M.A. – Chemistry, *Ball State University, Muncie, IN*
5/1991	M.A. – Actuarial Science, *Ball State University, Muncie, IN*
5/1989	A.B. – Chemistry Major, Math Minor, *Wabash College, Crawfordsville, IN*

TEACHING MINDSET

Each student in my classroom, or online, regardless of background, has the potential to learn, grow and succeed. My mission is to discover and create a wide range of strategies to improve the student learning experience. Examples include, organizing information for efficient and effective learning, leveraging technology to allow for asynchronous learning, and providing intentional exam review sessions for increased hands-on practice in the presence of an expert.

Areas of Intentional Emphasis:

- Model excellence and provide opportunities for students to demonstrate excellence.
- Success leads to success. Design learning experiences allowing students to succeed early and often. Build up confidence along with competence to strengthen resolve and persistence to push through challenges.
- Enhance intrinsic motivation: Increase the student's awareness of their motivations and train them to leverage them for their personal, academic and professional success.
- Provide opportunities for high-achieving students to be stretched and challenged.

DIVERSITY BRIEF, EXEMPLARS & STATEMENT

Brief: Diversity brings tremendous potential for growth and strength. I am confident that I have learned and benefitted more through the diversity of my students culturally than they have learned from me. My life and teaching are the richer for it. Below are some of the teaching contexts that have provided me opportunities for enrichment through diversity.

Exemplars:

- Crispus Attucks: worked with and encouraged inner-city middle school students through hands on environmental science experiences
- IVY Tech and ITT Tech: taught and advised urban, blue color, and first-generation students chemistry and
- Western Oregon University: taught pre-nursing, allied-health majors, comprised significantly of a rural demographic
- Corban University: taught chemistry, organic chemistry and biochemistry to student population with increasing Latinx, Pacific Islander, and international student demographic
- Chung-Buk National University: Interacted with South Korean chemistry students with American culture and conversational English; Collaborated with faculty and provided instructional feedback in analytical chemistry class

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INNOVATIVE TEACHING

- Course design: Online lecture materials have been created for general chemistry and organic chemistry courses allowing courses to be flipped and/or hybridized.
- Both semesters of organic chemistry have been flipped: Primary lecture content is delivered online allowing face-to-face time to be more flexible ("big picture" framing, digging deeper on essential/underlying concepts, practicing problems, addressing questions)
- Second semester of organic chemistry has been hybridized (replacing one of the three weekly class periods the students meet with their group): This provides for stronger teamwork, leading to greater depth of understanding of concepts.

LABORATORY CURRICULUM DEVELOPMENT

- Designed lab experiments from the ground up from available materials and equipment
- Revised and enhanced labs to increase time efficiency in lab (converted activities such as pre-lab, post-lab quizzes and pre-lab videos to Converge, LMS)
- Acquired and integrated FTIR instrument into organic chemistry lab and additional laboratory experiences for public school students.

RESEARCH INTERESTS

In addition to providing guidance/mentoring for academic scholarship I am interested in researching and presenting in areas such as the following.

- Develop and implement proactive strategies transforming the cadet with academic deficiencies into a successful self-reliant lifelong learner. Build broad-based, multi-level, cross-institutional platform to mitigate increasing demand for supplemental instruction.
- Education research and technological applications in chemistry, such as motivation design in learning and instructional design. Collegial and community collaborations are welcome.
- Increase efficiency and effectiveness of lecture/laboratory instruction across multiple concurrent sections of general chemistry.

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STUDENT RESEARCH

Corban is a teaching institution. Even so, I believe students benefit by being involved in research. If they are interested, then I am happy to find a place for them. As such, my student researchers have embarked on a wide range of research projects, such as investigating FTIR and developing protocols for peers and labs for high school students, troubleshooting and fixing problem areas in lab experiments, and creating pre-lab templates for subsequent video production.

- Students are encouraged to present their research at symposia and/or conferences. Below is a list of just those students on my team who presented their research.

Corban University Science Symposium (April, 2016). *Leveraging O-Chem Pre-Lab Videos: Endeavoring to Increase Efficiency and Effectiveness of Time in Lab* Olivia Erskine and Amber Lennier

National Council of Undergraduate Research (NCUR), Eastern Washington University, Cheney, WA (April, 2015). *Colligative Properties: Freezing Point Depression Lab for General Chemistry* Vileka Fisher, James Dyer

Corban University Science Symposium (April, 2015). *Improving the General Chemistry Lab Experience: Round Two – Freezing Point Depression, Rates of Reactions, and Titration Curves* Vileka Fisher

Corban University Science Symposium (April, 2014). *Improving the General Chemistry Lab Experience: Freezing Point Depression and Titration Curves* Vileka Fisher

Corban University Science Symposium (April, 2014). *Organic Chemistry Lab Research - Improving Organic Chemistry Labs: Ethyl Phenyl Ether Synthesis and Aspirin Synthesis (Semi-micro scale)* Megan McClure

Corban University Science Symposium (April, 2013). *An Apprenticeship Approach to Teaching Organic Chemistry,* Nathaniel Edwards

Corban University Science Symposium (April, 2013). *Fragrant Esters; How to Please a Corbanite Nose,* Sami Greif

PRESENTATIONS/CONTRIBUTIONS

American Chemical Society, 229th ACS National Meeting, San Diego, CA, (Mar. 13-17, 2005). *Physical Chemistry in Practice: Results of Classroom Implementation*, Marcy Towns[1], Gabriela C. Weaver[2], & J.U. Dyer[1].

228th ACS National Meeting, Philadelphia, PA, (August 22-26, 2004) *Using current research to teach Raman spectroscopy: Student response to a multimedia unit about SERS*, Gabriela Weaver[2], Marcy Towns[1], & Jim Dyer[1].

18th Biennial Conference on Chemical Education, Iowa State University, Ames, Iowa (July 18 - 22, 2004). *Physical Chemistry in Practice: Preliminary Evaluation Findings*, Marcy Towns[1], Jim Dyer[1], and Gabriela Weaver[2].

American Chemical Society, 36th Central Regional Meeting, IUPUI, Indianapolis, IN (June 3, 2004). *Preliminary Analysis of Physical Chemistry in Practice (PCIP) DVD Modules*, James U. Dyer[1], Marcy Hamby Towns[1], and Gabriela C. Weaver[2].

1 – Ball State University, 2 – Purdue University

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PUBLICATIONS

Dyer J.U., (November 8, 2013), *A Discussion of Creation for Christian Learners of Science*, Dedicated: School of Ministry Journal, Corban University, Salem, Oregon.

Dyer J.U., Towns M. and Weaver G.C., (July 11, 2007), *Physical Chemistry in practice: evaluation of DVD modules*, Journal of Science Education and Technology.

Dyer J.U., (2005), *Evaluation of physical chemistry in practice (PCIP) DVD modules,* Doctoral thesis, Ball State University, Muncie, Indiana.

Dyer J.U., (Summer 2004), '*Wet' and 'Dry' Moons*, The Hoosier Science Teacher.

AWARDS/GRANTS

Sabbatical Leave (2016-17), *Corban University*

Excellence in Teaching Grant (Co-Awardee with Dr. Sarah Comstock) ($1,000) (2014-15), *Corban University*

Excellence in Teaching Grant ($2,000) (2013-14), *Corban University*

Juan Young Trust Grant ($12,000) (2010-11), *Corban University*

Certificate of Teaching Excellence (2006), *Center for Teaching and Learning at Western Oregon University*

Instructor of the Quarter, Employee of the Quarter, *ITT Tech*

Teacher of the Month, Teaching When You're Off The Clock, Dedication, *Sylvan Learning Center*

Graduate Assistant Award (Chemistry), Lincoln Scholar Award (Actuarial Science)*, Ball State University*

Glee Club Senior Award, *Wabash College*

TEACHING FEEDBACK FROM STUDENTS AND SUPERVISOR

The following is a summary from the most recent (2022) CSCS Classroom Observation.

"Jim does a great job of developing higher level thinking skills with his students. In this observation, Jim had students in groups working through different equations on the board. The students did a great job in the activity and one student even commented the activity was helpful and fun for her to process the material of the day. Jim is passionate about his subject area and develops a classroom environment that fosters critical thinking skills through effect questioning. Jim adds value to our faculty both in the math and science department."

The following are excerpts from the most recent (2019) faculty portfolio review. They are representative and consistent with results throughout my time at Corban.

Top marks* from Chair during Teaching Observation and Evaluation:

- * "A model for other instructors. Demonstrates a sophisticated, nuanced understanding and/or enactment of the objective."
- Objectives:
    - Engages Students in Learning
    - Instructor is Clearly Engaged in Teaching/Learning Process
    - Knowledge and Expertise in Content/Subject are Evident
    - Humility is Evident in Presentation and Relationships
    - Instruction is Coherent and Purposeful

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ADVISING, SUPERVISING, and MENTORING

- Advise and mentor students: Course scheduling, Career planning (dental, veterinary, nursing, physical therapy, ophthalmology, allied health, physical therapy), internships, travel abroad, and research opportunities
- Heads-Up Program: Mentor students who have either academic or disciplinary concerns
- Supervise laboratory assistants for general chemistry and organic chemistry labs
- Supervise student research assistants in a variety of topics related to the enhancement of the educational experience of future chemistry students. All research assistants are encouraged to present their findings at Corban's Science Symposium and have gone on to do so at regional and/or national conferences.
- Mentor Peer/Faculty: Mentor middle-school science teacher bolstering chemistry concepts and foundation

SERVICE

Chemistry Tutor (2020-present), *Department of Science, USAFAPS*
- Address questions/concerns cadet candidates may have regarding their chemistry coursework

Corban Education Committee (2017-20), *Corban University*
- Provide assistance to and advocate for biology-education majors

Instructional Technology Committee (2008-20), *Corban University*
- Discuss and determine technological needs and directions for students and faculty

Science Teacher Mentoring (2018-19), *Abiqua Academy*
- Middle School Support for Science, including Science Fair Projects

Supervisor for college student volunteers (2018-19), *Corban University*
- Coordinate and debrief with college students for their volunteer projects with middle school students

Den Leader (Cub Scouts), *Troop 7002* (2017-18) *Salem, Oregon*

Faculty Development Committee (a.k.a. Faculty Senate) (2012-14) (Chair 2013-14), *Corban University*
- Address faculty issues such as salaries and benefits, updates and revisions to faculty handbook, etc.

Budget Committee (2013-14), *Corban University*
- Review of and provide voice into budgetary matters as they affect faculty interests

General Education Curriculum Review Committee (Chair 2011-12), *Corban University*
- Coordinate with faculty to review, revise, and approve general education curriculum

INSTRUMENTS & SKILLS

FTIR, H^1NMR, C^{13}NMR, AA, GC/MS, GC/ECD, GC/FID, GC/TCD, HPLC, DSC
Computer: Online meetings (MS Teams, Zoom), MSOffice, PowerPoint to online video production, multimedia, website development