

2021

CHEMISTRY DEPARTMENT

OF MILLERSVILLE UNIVERSITY



Millersville University



DEGREE PROGRAMS

- B.S. IN CHEMISTRY (ACS CERTIFIED)
 - BIOCHEMISTRY OPTION (ACS CERTIFIED)
 - ENVIRONMENTAL OPTION
 - POLYMER OPTION
 - NANOTECHNOLOGY OPTION
 - ENGINEERING INSTRUMENTATION AUTOMATION OPTION
- B.S.E. IN CHEMISTRY
- B.S. CHEM/3+4 PRE-PHARMACY

COURSE WORK

INTRODUCTORY COURSES

- 72 STUDENTS IN LECTURE
- 24 STUDENTS IN RECITATION

UPPER LEVEL COURSES

- 10 – 20 TYPICAL CLASS SIZE
- RESERVED SEATS FOR MAJORS

SCHOLARSHIPS & AWARDS

SCHOLARSHIPS

JOSEPH A. & LINDA R. CAPUTO AWARD
 CECIL M. UPTON ORGANIC CHEMISTRY AWARD
 GERALD S. WEISS CHEMISTRY SCHOLARSHIP
 SANDRA A. YEAGER, PH.D., CHEMISTRY SCHOLARSHIP
 THE RICHARD SASIN SCHOLARSHIP IN CHEMISTRY
 YVONNE & SANDRA TURCHI BIOCHEMISTRY SCHOLARSHIP
 DR. EDWARD RAJASEELAN EXCELLENCE IN CHEMISTRY SCHOLARSHIP
 JAMES E. KOKEN SCIENCE SCHOLARSHIP
 STARBRAD EXCELLENCE IN SCIENCE AWARD

AWARDS

CRC CHEMISTRY ACHIEVEMENT AWARD
 POLYMER EDUCATION UNDERGRADUATE AWARD
 MU ACS STUDENT CHAPTER AWARD
 AMERICAN CHEMICAL SOCIETY AWARDS IN:
 ANALYTICAL CHEMISTRY
 INORGANIC CHEMISTRY
 ORGANIC CHEMISTRY
 PHYSICAL CHEMISTRY
 AMERICAN INSTITUTE OF CHEMISTS AWARD
 ACS SOUTHEASTERN PA SECTION AWARD

**AN ESTIMATED
 \$30,000 IS
 AWARDED
 TO CHEMISTRY
 MAJORS
 ANNUALLY
 THROUGH
 SCHOLARSHIPS**

TYPES OF CAREERS

- **INDUSTRY**

ADVANSIX, AMGEN, INC. DUPONT, JOHNSON & JOHNSON, MERCK, LANCASTER LABORATORIES, PEACH BOTTOM NUCLEAR POWER PLANT, EPA. SOLENIS

- **GRADUATE SCHOOL**

PRINCETON, NORTHWESTERN, TEXAS A&M, PENN STATE, COLORADO, OHIO STATE, ARIZONA, WISCONSIN, UCLA, PITT, INDIANA, GEORGIA, KANSAS, MARYLAND, USC, ROCHESTER, CAL

- **MEDICAL/DENTAL/PHARMACY SCHOOLS**

UNIVERSITY OF MARYLAND SCHOOL OF PHARMACY, LECOM, TEMPLE UNIVERSITY, UNIVERSITY OF THE SCIENCES

- **CHEMISTRY TEACHING**

BELLEVILLE HIGH SCHOOL, CINNAMINSON HIGH SCHOOL, ELIZABETHTOWN COLLEGE, DESALES UNIVERSITY, FLORIDA INSTITUTE OF TECHNOLOGY, HACC LANCASTER, LANCASTER CATHOLIC HIGH SCHOOL, UNIONVILLE CHADDS FORD SCHOOL DISTRICT, UNIVERSITY OF SOUTH CAROLINA

CHEMISTRY STUDENT OUTCOME AT GRADUATION

Year	Total Graduates	Graduates Attending Graduate School	Graduates Attending Professional School	Graduates with Jobs or Job Offers
2015	21	10	2	4
2016	40	7	4	18
2017	28	5	2	12
2018	20	7	0	9
2019	19	6	1	9
2020	25	11	2	8
2021	11	5	0	5
Total	164	51	11	65
Percentage		31%	7%	40%

71% OF GRADUATES HAVE JOBS, JOB OFFERS, OR ADMISSION TO GRADUATE OR PROFESSIONAL SCHOOL BEFORE GRADUATION

STUDENT RESEARCH

- **1 CREDIT INDEPENDENT STUDY REQUIRED (UP TO 3 ELECTIVE)**
- **PRESENTATIONS AT LOCAL, REGIONAL AND NATIONAL CONFERENCES**
- **PUBLICATIONS**
- **MURLEY SUMMER RESEARCH FELLOWSHIP**
- **NSF – RESEARCH EXPERIENCE FOR UNDERGRADUATES**
(UNC-CHAPEL HILL, TULANE, FLORIDA STATE, PRINCETON, MICHIGAN, BOSTON UNIVERSITY, NC STATE, KANSAS, ARIZONA, PENN STATE, TENNESSEE)

INTERNSHIP OPPORTUNITIES

- **EARN CREDITS ON THE JOB!**
- **COMPETITIVE SALARIES**
- **VALUABLE EXPERIENCE**
- **OUR STUDENTS HAVE BEEN PLACED AT:**
PFIZER, ALCOA, LANCASTER LABS(EUROFINS), ENERSYS, GLATFELTERS, K&L PLATING, STONER, MRG LABS,TIER ENVIRONMENTAL, TEVA PHARMACEUTICAL, PHARM.TECH. ASST., CNF RESEARCH., ITT

FOR MORE INFORMATION PLEASE SEE OUR STUDENT HANDBOOK:
[HTTPS://WWW.MILLERSVILLE.EDU/CHEMISTRY/FILES/CHEMISTRY-STUDENT-HANDBOOK-FALL-2020-ONLINE.PDF](https://www.millersville.edu/chemistry/files/chemistry-student-handbook-fall-2020-online.pdf)

CHEMISTRY STUDENT TIME TO GRADUATION

83% OF GRADUATES WHO STARTED AS FIRST-YEAR CHEMISTRY MAJORS AT MU GRADUATE IN 4 YEARS OR LESS, 16% MORE IN 4.5 TO 5 YEARS.

Year	Number of Students who Started as First-Year Students and Graduated	Number of Students who Graduated in 4 Years or Less	Number of Students who Graduated in 4.5 or 5 Years
2015	8	6	2
2016	18	16	2
2017	13	12	1
2018	9	6	3
2019	11	10	1
2020	21	19	2
2021	9	5	3
Total	89	74	14
Percentage		83%	16%

PASSHE BACHELOR COMPLETIONS IN CHEMISTRY

FROM 2011-2018 MILLERSVILLE UNIVERSITY GRADUATED 166 CHEMISTRY MAJORS, 66% MORE THAN THE NEXT CLOSEST PASSHE DEPARTMENTS.

PASSHE Bachelor Completions in Chemistry by CIP Code & Fiscal Year								
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Bloomsburg	13	8	13	8	9	5	15	9
Chemistry, General (400501)	13	8	13	8	9	5	15	9
California	13	11	15	10	10	5	6	3
Chemistry, General (400501)	13	11	15	10	10	5	6	3
Cheyney	2	8	1	1			2	
Chemistry, General (400501)	2	8	1	1			2	
Clarion	7	8	21	13	9	10	13	1
Chemistry, General (400501)	7	8	21	13	9	10	13	1
East Stroudsburg	5	10	6	11	11	8	10	11
Chemistry, General (400501)	5	10	6	7	6	4	8	9
Chemistry, Other (400599)				4	5	4	2	2
Edinboro	10	5	17	5	10	10	14	7
Chemistry, General (400501)	10	5	17	5	10	10	14	7
Indiana	14	9	9	13	11	10	11	13
Chemistry, General (400501)	14	9	9	13	11	10	11	13
Kutztown	3	9	8	8	11	9	7	9
Chemistry, General (400501)	3	9	8	8	11	9	7	9
Lock Haven	5	5	2	4	7	8	5	5
Chemistry, General (400501)	5	5	2	4	7	8	5	5
Mansfield	8	4	7	9	10	4	7	6
Chemistry, General (400501)	8	4	7	9	10	4	7	6
Millersville	19	18	10	14	23	38	26	18
Chemistry, General (400501)	19	18	10	14	23	38	26	18
Shippensburg	8	7	10	6	12	8	10	14
Chemistry, General (400501)	8	7	10	6	12	8	10	14
Slippery Rock	9	3	17	15	14	10	13	19
Chemistry, General (400501)	9	3	17	15	14	10	13	19
West Chester	3	2	12	11	15	14	18	22
Chemistry, General (400501)	3	2	12	11	15	14	18	22
Grand Total	119	107	148	128	152	139	157	137

NUMBER OF DOCTORATE RECIPIENTS IN CHEMISTRY

(NSF WebCASPAR Integrated Science and Engineering Resource Data)

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Year: 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007												
2	Academic Institution (standardized): All values												
3	Academic Discipline, Detailed (standardized): Chemistry												
4	Highest Degree (standardized): Master's-granting Institutions, Bachelor's-granting Institutions												
5	Year		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2007-2016
6			Number of Doctorate Recipients by Baccalaureate Institution (Sum)										Total
7	Academic Institution (standardized)	Highest Degree (standardized)											
8	Truman State University	Master's-granting Institutions	7	4	8	8	6	3	7	8	8	5	64
9	Carleton College	Bachelor's-granting Institutions	3	6	3	6	7	3	7	5	9	9	58
10	California Polytechnic State University, San Luis Obispo	Master's-granting Institutions	4	5	5	3	6	2	5	10	7	3	50
11	Alegheny College	Master's-granting Institutions		6	6	6	6	5	4	2	8	3	46
12	Western Washington University	Master's-granting Institutions	5	1	4	6	3	3	3	4	6	10	45
13	College of Wooster, The	Bachelor's-granting Institutions	4	4	6	4	5	4	2	1	8	4	42
14	James Madison University	Master's-granting Institutions	6	6	3	3	3	7	3	2	1	7	41
15	College of New Jersey, The	Master's-granting Institutions	2	3	4	1	3	1	3	3	12	8	40
16	Franklin & Marshall College	Bachelor's-granting Institutions	2	3	5	6	6	4	2	3	3	5	39
17	Reed College	Master's-granting Institutions	2	3	4	8	5	3	1	3	3	5	37
18	Furman University	Master's-granting Institutions	2	4	6	4		3	4	3	6	4	36
19	Grand Valley State University	Master's-granting Institutions	1	3	4	2	3	3	8	4	3	5	36
20	Grinnell College	Bachelor's-granting Institutions	4	1	4	2	5	4	3	4	4	4	35
21	Harvey Mudd College	Master's-granting Institutions	4	3	1	3	2	5	3	1	4	9	35
22	St. Olaf College	Bachelor's-granting Institutions	5	4	4	4	2	1	4	5	4	2	35
23	Rochester Institute of Technology	Master's-granting Institutions	3	1	2	3	3	4	3	7	3	5	34
24	Macalester College	Bachelor's-granting Institutions	4	2	3	2	5	1	3	4	6	2	32
25	Millersville University of Pennsylvania	Master's-granting Institutions	4	2	6	6	3	1	2	3	3	2	32
26	Western Kentucky University	Master's-granting Institutions		4	1	7	4	4	3	1	4	4	32
27	College of the Holy Cross	Bachelor's-granting Institutions	3	4	5	3	5	1	2	2	2	4	31
28	Kalamazoo College	Bachelor's-granting Institutions		5	7	2	1	3	3	2	3	5	31
29	Juniata College	Bachelor's-granting Institutions	3	2	1	3	2	3	5	4	3	3	29
30	Whitman College	Bachelor's-granting Institutions	1	3	1	3	4	5	3	1	2	6	29
31	Albion College	Bachelor's-granting Institutions	1	2	3	3	4	2	1	5	3	3	27
32	College of Charleston	Master's-granting Institutions	1	1	2	5	1	3	2	4	3	5	27
33	Hope College	Bachelor's-granting Institutions	5		4	1	3	4	1	3	1	5	27
34	Wellesley College	Bachelor's-granting Institutions	4	1	5	1	1	2	2	3	3	5	27
35	Haverford College	Bachelor's-granting Institutions	3	2	4	5		2	4		1	5	26
36	Trinity University	Master's-granting Institutions	2	3		2	2	5	2	5	2	3	26
37	University of Puerto Rico at Cayey	Bachelor's-granting Institutions	4	1	3	1	4	1	5	2	2	3	26
38	University of Wisconsin-La Crosse	Master's-granting Institutions	3	1	4	1	2	1	6	3	2	3	26
39	University of Wisconsin-Stevens Point	Master's-granting Institutions	3	1	5	2	1	2	2	2	5	5	26
120	Edinboro University of Pennsylvania	Master's-granting Institutions	2			2	1	3	3	1	1	1	14
135	Lincoln University of the Commonwealth of Pennsylvania	Master's-granting Institutions	2		3	3	1		1	1	1	1	13
206	Shippensburg University of Pennsylvania	Master's-granting Institutions		1	1	1	2	1	1	2	1	1	10
215	West Chester University of Pennsylvania	Master's-granting Institutions		1	2		1		3		2	1	10
244	York College Pennsylvania	Master's-granting Institutions				1	2	2	1		1	2	9
291	Slippery Rock University of Pennsylvania	Master's-granting Institutions	2			1		1		1	2		7
311	Bloomsburg University of Pennsylvania	Master's-granting Institutions	1	1			1		1		2		6
353	California University of Pennsylvania	Master's-granting Institutions		4						1			5
355	Clarion University of Pennsylvania	Master's-granting Institutions		2	1		1			1			5

MILLERSVILLE UNIVERSITY YOUNG ALUMNI ACHIEVEMENT AWARD RECIPIENTS

Year	RECIPIENT	POST GRADUATE WORK	CURRENT POSITION
2015	Dr. Matt Stolfus	Ph.D. - Ohio State Author of a text book	Ohio State University Professor
2016	Dr. Tom Bernhardt	Ph.D. - Texas A&M Post Doctoral Research - Case Western Reserve	Harvard Medical School Professor
2017	Dr. Mike Zdilla	Ph.D. - Princeton Post Doctoral Research - Purdue	Temple University Professor
2018	Dr. Joe Dennes	Ph.D. - Princeton	DuPont Global Director of Marketing University of Virginia
2019	Dr. Cliff Stains	Ph.D. - Arizona Post Doctoral Research - MIT	Professor University of Virginia
2020	Dr. Jonathan Shue	DMD - University of Pennsylvania School of Dental Medicine	Vandenberg Air Force Base Dentist

MEET THE FACULTY

**Dr. Daniel Albert**

Joined the Chemistry Department in August 2016. He received his B.A. (2007) from Ohio Wesleyan University, his M.S. (2008) the University of Wisconsin-Madison, and his Ph.D. (2013) in Physical Chemistry from Cornell University. As a graduate student, Dr. Albert's research involved using molecular beam scattering to characterize chemical reactions. Much of his graduate work involved developing high-intensity vacuum ultraviolet laser sources for molecule detection via "soft" single-photon ionization. Before coming to Millersville, Dr. Albert was an Assistant Professor of Chemistry at the University of Wisconsin-Stevens Point from 2013 – 2016. His major teaching responsibilities are Introductory Chemistry and Physical Chemistry. Dr. Albert's current research interests involve investigating chemical reactions taking place on aerosol particles and how molecules on the surfaces of these particles influence their reactivity. Dr. Albert is also interested in developing low- cost instruments for teaching about and using instrumentation in classrooms.

Dr. Kathryn Allen

Joined the Chemistry Department in August 2014. She received her B. S. (2004) from Juniata College and her Ph.D. (2010) from Columbia University. Prior to coming to Millersville University, she did her post-doctoral studies at the University of Southern California. Dr. Allen's research involves the development and synthesis of unique polymer structures for materials applications. Dr. Allen is interested in the use of these polymers for implementation in solar cells. She teaches Polymer Chemistry, the Short Course in Organic Chemistry, and Introductory Chemistry courses.

**Dr. Steven Bonser**

Joined the Chemistry Department in July of 2007. He received his B.S. (1974) in Chemist from Kutztown University, his M.S. (1977) in Chemistry from Bucknell University, and his Ph.D. (1983) in Organic Chemistry from the University of Minnesota. While at Bucknell, he was the recipient of a summer Research Fellowship at the University of Leiden, The Netherlands. After obtaining his Ph.D., Dr. Bonser joined the Research and Development Laboratories of the Eastman Kodak Company in Rochester, NY, where he designed, synthesized, and developed a wide range of complex heterocyclic imaging chemicals. During his time with Kodak, Dr. Bonser was also a Visiting Scholar in Chemistry at Harvard University (1991-1993) where he worked in the Laboratory of Professor George W. Whitesides. Before coming to Millersville, Dr. Bonser taught organic chemistry at Bloomsburg University. He is teaching Introductory Organic Chemistry and Advanced Organic Chemistry. Dr. Bonser's research interests are in the areas of synthetic organic and physical organic chemistry, with a particular emphasis on small ring chemistry, heterocyclic chemistry, polyaromatic chemistry, and process development chemistry.

Dr. Michael Elioff

Joined the department in August 2012. He received his BS (1991) in mathematics and his MS (1995) in chemistry from the University of Texas. After teaching high school chemistry and calculus, he entered the PhD program at Boston University to work with Amy Mullin on quantum state-resolved energy transfer mechanisms in vibrationally excited molecules. He received his PhD (2001) in chemistry from BU and went on to do a post-doctoral fellowship (2001-2004) at Sandia National Laboratories in Livermore, CA, during which time he did a visiting fellowship at Vrije Universiteit in Amsterdam (Fall 2003) with Steven Stolte. He has held two tenure-track assistant professorships prior to arriving at Millersville. Dr. Elioff's research interests are in the areas of atmospheric photophysics, cold molecule formation, fluorescence, propellants, and combustion. He is currently interested the problems associated with calculating solid-phase heats of formation for various propellants and explosives, as well as in studying the dynamics and kinetics of fluorescence and fluorescence quenching of biologically important fluorophores. His teaching responsibilities include Introductory Chemistry and Physical Chemistry.



MEET THE FACULTY



Dr. Steven Kennedy

Joined the Chemistry Department in July of 2012. He received his B.S. (2004) in Chemistry from Lewis-Clark State College and his Ph.D. (2010) in Organic Chemistry from the University of California, Irvine. While at UC Irvine, he was the recipient of the 2007 – 2008 Eli Lilly Research Fellowship for his studies toward the synthesis of the anticancer polyketide, spirastrellolide A. After obtaining his Ph.D., Dr. Kennedy contributed to the development of environmentally responsible palladium catalyzed reaction methods as a Postdoctoral Fellow at the University of Pennsylvania (2010 – 2012) where he worked in the laboratory of Professor Gary A. Molander. Dr. Kennedy's research interests are in the areas of synthetic organic, organometallic catalysis, and reaction methods development. The central themes of his research include: design, synthesis and biological evaluation of truncated natural product analogues; utilization of high-throughput screening techniques to expedite new reaction discovery; development of synthetic routes and synthetic methods that are environmentally conscientious.

Dr. Jeremiah Mbindyo

Joined the Chemistry Department in August of 2002. He received his B.Ed. [Sc.] (1987) from Kenyatta University-Nairobi, his M.Sc. (1993) from the University of Nairobi-Kenya and his Ph.D. (1999) from the University of Connecticut. Before coming to Millersville, Dr. Mbindyo did post doctoral research at Pennsylvania State University in the area of nanotechnology. His research interests are in the areas of nanotechnology, electroanalytical and environmental chemistry. He is developing nanoscale sensors for environmental monitoring and studying electron transfer reactions in the solid state. Since coming to Millersville, Dr. Mbindyo has taught Environmental Chemistry and Introductory Chemistry.



Dr. Aimee Miller *Department Chair*

Joined the Chemistry Department in August of 2003. She received her B.A. (1992) from Eastern Mennonite University and her Ph.D. (2000) from the University of Virginia. Prior to coming to Millersville, she did post-doctoral studies of nuclear transport at Washington University in St. Louis and Vanderbilt University. Dr. Miller's research utilizes the power of yeast genetics to unravel biochemical functions at a cellular level. Her interests include studies of proteins involved in inositide pathways as well as characterization of novel genes in *Saccharomyces cerevisiae* (baker's yeast). She teaches Introductory Chemistry and Biochemistry. She is currently serving as the department chair.



Dr. Melissa Mullen Davis

Joined the Chemistry Department in August 2018. She received her B.A. (2005) in Chemistry and Spanish from Colby College and her Ph.D. (2011) in Chemistry from The Pennsylvania State University. Her graduate work focused on nucleic acid biochemistry, studying interactions between nucleic acids with metals and small molecules as well as how those interactions affect nucleic acid folding. Prior to coming to Millersville University, Dr. Mullen Davis completed a Postdoctoral Research Fellowship at the Cleveland Clinic Lerner Research Institute (2011-2014) where she studied mechanisms of eukaryotic transcription and was a Visiting Assistant Professor of Biochemistry and Molecular Biology at The College of Wooster (2014-2018). Dr. Mullen Davis' research focuses on gene regulation by transcription factors in prokaryotes and by long non-coding RNAs in model plant systems. Her current research investigates how these organisms respond to abiotic stresses including oxidative stress and low nutrient stress. Dr. Mullen Davis teaches Biochemistry courses and Introductory Chemistry courses.



MEET THE FACULTY

**Dr. R. Edward Rajaseelan**

Joined the Chemistry Department in August of 1990, following a year of teaching and research at St. Olaf College. He received his B.S. (1981) from the University of Peradeniya-Sri Lanka and his Ph.D. (1989) from the University of Arizona. Dr. Rajaseelan's research interests are in the areas of coordination and organometallic chemistry. His current research involves synthesis and characterization of N-heterocyclic Carbene Complexes of Rhodium and Iridium and studying their catalytic properties in various transfer hydrogenation reactions. He teaches Introductory Chemistry courses for science majors and non-science majors, Inorganic chemistry, Advanced Lab and Advanced Inorganic Chemistry. He served as chair of the department from 2014-2020.

Dr. Lyman Rickard

Joined the Chemistry Department in August 1989. He received his B.S. (1973) and M.S. (1975) from the University of Southern Mississippi and his Ph.D. (1985) from the Florida Institute of Technology. Before coming to Millersville, Dr. Rickard taught chemistry at High Point College in North Carolina for fourteen years. Dr. Rickard's research interests are in chemical education and the electron transfer reactions of biological molecules. He has been active in the ACS serving in various offices and as councilor of the Central North Carolina Section. His major teaching responsibilities are in Introductory Chemistry. He served as chair of the department from 1999-2002.

**Dr. Maria Schiza**

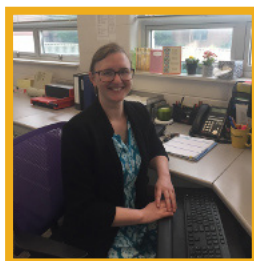
Joined the Chemistry Department in August of 2005. She received her B.S. (1995) in Chemistry from Roosevelt University and her Ph.D. (2001) in Analytical Chemistry from the University of South Carolina. Following graduation she did postdoctoral research at the University of South Carolina in the area of thin film fabrication and optical sensing. Dr. Schiza also worked for Science and Technology Corporation in the area of bacterial spore detection. Before coming to Millersville, she taught chemistry for a year at Armstrong Atlantic State University. Dr. Schiza's research interests include the development and characterization of new materials, particularly nanomaterials, for potential applications to sensing and photocatalysis of organic contaminants such as organochlorides and organophosphides. Dr. Schiza is interested in the synthesis of inorganic nanoparticles using the sol-gel process and the study of their chemical and physical properties by spectroscopic and microscopic techniques.



MEET THE STAFF



Mr. Stephen Peurifoy
Lab Technician



Ms. Emily Drennen
Department Secretary

CONTACT US:

717-871-4297

Department Chair:
Dr. Aimee Miller
aimee.miller@millersville.edu

Department Secretary:
Ms. Emily Drennen
emily.drennen@millersville.edu