CHEMISTRY DEPARTMENT

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
CHEMISTRY DEPARTMENT

TYPES OF CAREERS

- INDUSTRY
  ADVANSIX, AMGEN, INC. DOW, 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

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Graduates</th>
<th>Graduates Attending Graduate School</th>
<th>Graduates Attending Professional School</th>
<th>Graduates with Jobs or Job Offers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>21</td>
<td>10</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>2016</td>
<td>40</td>
<td>7</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>2017</td>
<td>28</td>
<td>5</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
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<td>2020</td>
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<td>8</td>
</tr>
<tr>
<td>2021</td>
<td>11</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>164</td>
<td>51</td>
<td>11</td>
<td>65</td>
</tr>
</tbody>
</table>

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)

INTERNERSHIP 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

Millersville University
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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Students who Started as First-Year Students and Graduated</th>
<th>Number of Students who Graduated in 4 Years or Less</th>
<th>Number of Students who Graduated in 4.5 or 5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>8</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>2016</td>
<td>18</td>
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<tr>
<td>2020</td>
<td>21</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>2021</td>
<td>9</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>74</td>
<td>14</td>
</tr>
<tr>
<td>Percentage</td>
<td></td>
<td>83%</td>
<td>16%</td>
</tr>
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</table>

PASSHE BACHELOR COMPLETIONS IN CHEMISTRY

FROM 2011-2018 MILLERSVILLE UNIVERSITY GRADUATED 166 CHEMISTRY MAJORS, 66% MORE THAN THE NEXT CLOSEST PASSHE DEPARTMENTS.
### MILLERSVILLE UNIVERSITY YOUNG ALUMNI ACHIEVEMENT AWARD RECIPIENTS

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

Joined the department in August 2012. He received his BS (1991) in mathematics and his M5 (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 Amsterdum (Fall 2003) with Steven Stolte. He has held two tenure-track assistant professorships prior to arriving at Millersville. Dr. Ellof’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.
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.
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. 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. 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