

curriculum vitae

Robert M. Seiser, Ph.D.

Associate Professor of Biology and Chemistry
Roosevelt University

1400 N. Roosevelt Blvd., Schaumburg, IL 60173
847-619-8758
rseiser@roosevelt.edu
www.linkedin.com/in/robertseiser

Education and Training

<i>Years</i>	<i>Institution</i>	<i>Degree</i>	<i>Program</i>
1992-1996	Lawrence University, Appleton, WI	B.A.	Biochemistry
1996-2002	Duke University, Durham, NC	Ph.D.	Cell & Molecular Biology
2002-2004	University of Wisconsin-Madison	Postdoctoral	Biochemistry

Appointments and Employment

2003-2004	Course Director, <i>Ways of Knowing Biology</i> , UW - Madison
2004-2010	Assistant Professor of Biology and Chemistry, Roosevelt University
2008-2013	Program coordinator and co-Program Director, NIH Bridges to the Baccalaureate, Roosevelt University / Elgin Community College
2010-present	Associate Professor of Biology and Chemistry, Roosevelt University
2012-2015	Assistant Chair, Department of Biological, Chemical and Physical Science, Roosevelt University
2013-present	Co-Director, SENCER Center for Innovation-Midwest, National Center for Science and Civic Engagement
2013-present	Director of MS Graduate Programs, Department of Biological, Physical & Health Science
2015-2020	Director of Schaumburg Campus Academic Partnerships, Dean's Office, College of Arts & Sciences
2017-present	Senior Fellow / Ambassador, National Center for Science and Civic Engagement
2021-present	Chair, Department of Biological, Physical and Health Science, College of Science, Health and Pharmacy, Roosevelt University

Professional Affiliations and Activities

2003-2004	Future Faculty Partner, UW Teaching Academy, UW - Madison
2005-present	Member, American Association of University Professors
2007-2016	National Leadership Fellow, Science Education for New Civic Engagements & Responsibilities
2008-2011	Engaged Faculty Fellow, Mansfield Institute for Social Justice and Transformation
2010-present	Reviewer and contributing author, Jones & Bartlett Learning, Pearson, Wiley publishers
2011-2013	Chair, College of Arts and Sciences Faculty Council, Roosevelt University
2013-present	College Representative, Graduate Council, Roosevelt University
2014-2016	Coordinator, MS Biology Graduate Cohort for High School Teachers, Roosevelt University / NECSS
2015-2016	SENCER Visiting Scientist, National Center for Science and Civic Engagement
2020-2021	Treasurer, Roosevelt University chapter, American Association of University Professors
2020-present	Chair, College of Science, Health and Pharmacy Faculty Council, Roosevelt University
2022-present	College Representative, Student Learning and Assessment Committee, Roosevelt University

Honors and Awards

2007	Faculty Research Leave, Roosevelt University
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- 2011 Advisor of the Year, Roosevelt University Student Organizations
- 2012 William E. Bennett Award for Extraordinary Contributions to Citizen Science, National Center for Science and Civic Engagement (*with Roosevelt University colleagues*)
- 2015 Faculty Research Leave, Roosevelt University

Laboratory Investigations

h-index = 7, 663 total citations, 151 citations since 2018

1. Radeva-Petrov S and **Seiser RM**. Worm Biochemistry: Experiments with the Oxygen-Transporting Protein Hemerythrin in the Undergraduate Laboratory (unpublished manuscript). (2016)
2. Piotrowski AL and **Seiser RM**. Characterization of Double Budding in Wild-type *Saccharomyces cerevisiae* (refereed poster). *Genetics Society of America Conferences - Yeast Genetics Meeting* (2014).
<http://www2.genetics-gsa.org/yeast/2014/index.shtml>
3. Fassio C, Schofield B, **Seiser RM**, Johnson AW and Lycan DE. Dominant Mutations in the Late 40S Biogenesis Factor Ltv1 Affect Cytoplasmic Maturation of the Small Ribosomal Subunit in *Saccharomyces cerevisiae*. *Genetics* 185:199-209 (2010) <https://doi.org/10.1534/genetics.110.115584>
4. **Seiser RM**, Sundberg AE, Wollman BJ, Zobel-Thropp P, Baldwin K, Spector MD and Lycan DE. Ltv1 is required for efficient nuclear export of the ribosomal small subunit in *S. cerevisiae*. *Genetics* 174: 679–691 (2006) <https://doi.org/10.1534/genetics.106.062117>
5. Loar JW, **Seiser RM**, Sundberg AE, Sagerson HJ, Ilias N, Zobel-Thropp P, Craig EA and Lycan DE. Genetic and biochemical interactions between Yar1, Ltv1 and RpS3 define novel links between environmental stress and ribosome biogenesis in *S. cerevisiae*. *Genetics*, 168:1877-1889 (2004)
<https://doi.org/10.1534/genetics.104.032656>
6. Lerner RS, **Seiser RM***, Zheng T, Lager PT, Reedy MC, Keene JD and Nicchitta CV. Partitioning and translation of mRNAs encoding soluble proteins on membrane-bound ribosomes. *RNA*, 9:1123-1137 (2003) **Co-primary author* <https://doi.org/10.1261/rna.5610403>
7. Rozak PR, **Seiser RM**, Wacholtz WF and Wise RR. Rapid, reversible alterations in spinach thylakoid appression upon changes in light intensity. *Plant, Cell & Environment*, 25 (3): 421-429 (2002)
<https://doi.org/10.1046/j.0016-8025.2001.00823.x>
8. Potter MD, **Seiser RM** and Nicchitta CV. Ribosome exchange revisited: a mechanism for translation-coupled ribosome detachment from the ER membrane *Trends in Cell Biology*, 11(3):112-115 (2001)
[https://doi.org/10.1016/S0962-8924\(00\)01905-X](https://doi.org/10.1016/S0962-8924(00)01905-X)
9. **Seiser RM** and Nicchitta CV. The Fate of Membrane-bound Ribosomes Following the Termination of Protein Synthesis. *Journal of Biological Chemistry*, 275: 33820-33827 (2000)
<https://doi.org/10.1074/jbc.M004462200>

Scholarship of Teaching and Learning

1. Smyth DS, Jordan T, **Seiser R et al**. Promoting RAPID Vaccine Science Education at the Onset of the COVID-19 Pandemic (publication). *Journal of Microbiology & Biology Education* (2023)
<https://doi.org/10.1128/jmbe.00051-23>
2. **Seiser R**. Immunity and Vaccine Action (publication). In: COVID Vaccination: From Science to Society Faculty Mentoring Network, *QUBES Educational Resources* (2023).
<http://dx.doi.org/10.25334/WC8X-7447>
3. **Seiser R**. Vaccine Development and Testing (publication). In: COVID Vaccination: From Science to Society Faculty Mentoring Network, *QUBES Educational Resources* (2023).
<http://dx.doi.org/10.25334/VV2G-MZ30>

4. **Seiser RM.** Exploring Fermentation Science Through Cultural and Commercial Practices (refereed presentation). *ASM Conference for Undergraduate Educators*, virtual conference (2021).
5. **Seiser RM.** The 15-week PhD: Formal Research Methods Training Through Laboratory Investigations of Yeast Cell Physiology (refereed poster). *Genetics Society of America Conferences - Yeast Genetics Meeting* (2014). <http://www2.genetics-gsa.org/yeast/2014/index.shtml>
6. Cordova CP and **Seiser RM.** Science and Social Justice: Student and Faculty Initiatives (poster). *NCSCE Washington Symposium and Capitol Hill Poster Session* (2011). <https://sencer.net/washington-symposia/>
7. **Seiser RM** and Wentz-Hunter K. Implementation of Civic Engagement Activities in Core Biology Majors Courses (refereed poster). *American Society for Cell Biology Annual Meeting*, Washington, DC (2007).

Professional Presentations

1. Pivarski M and **Seiser R.** SENCERizing Your Class: Adding Context and Connection (workshop). *Chicago Symposium Series, Excellence in Teaching Mathematics and Science: Research and Practice*, Chicago, IL (2023). <https://chicagosymposium.org/breakouts/2023/1/>
2. **Seiser R.** COVID-19 Vaccines, from Trials to Vials (podcast). *Roosevelt University: And Justice for All - COVID-19 Vaccine Explained series* (2021). <https://shows.acast.com/5cc20acb2408edd42cf0ca78/602590e2d66a43099e3cfa22>
3. Jordan T, **Seiser R**, Moran M, Smyth D, Kahl N, Hasager U, Shachter A and Oates K. Combating Misinformation: Vaccine Hesitancy and COVID-19 (invited panel discussion). *SENCER Summer Institute*, virtual conference (2021). <https://tinyurl.com/bjnubmu>
4. Smyth DS and **Seiser RM.** Online Vaccine Science Resources For Covid-19 Education (refereed presentation). *ASM Conference for Undergraduate Educators*, virtual conference (2021). <https://www.vaccine-science-education.org>
5. **Seiser RM.** Beyond Brewing: Developing a Fermentation Science Course (poster). *SENCER Summer Institute*, virtual conference (2020).
6. **Seiser RM.** Dr. Seiser's Immunology Class; or, How I Learned to Stop Worrying and Love the Textbook. In: *Teaching Through COVID-19* (invited commentary). *Science Education and Civic Engagement – An International Journal*, 12(2): 64-65 (2020) <https://tinyurl.com/anfz3pux>
7. **Seiser RM.** Same Fish, Different Ponds - Adapting to Changes in Higher Education (workshop). *SENCER Summer Institute*, Cleveland, OH (2019). <https://tinyurl.com/4e96n2ar>
8. **Seiser RM.** The weekly student seminar as an open-ended SENCER course (workshop). *SENCER Summer Institute*, Cleveland, OH (2019). <https://tinyurl.com/4e96n2ar>
9. Jacobs K, McHugh-Kurtz V, Pelzel H, Reilly E and **Seiser RM.** Big Ideas and Global Concepts (invited panel discussion). *Advancing the Introductory Biology Experience NABT/HHMI Meeting*, Chevy Chase, MD (2019).
10. Jacobs K and **Seiser RM.** A SENCER-based Biology Teaching Manual with Application for Secondary and Higher Education (poster). *National Association of Biology Teachers Professional Development Conference*, San Diego, CA (2018). <https://nabt.org/Post/2018-Professional-Development-Conference>
11. **Seiser RM**, Pelzel H, and Sieg RD. Working Toward a SENCER-based Biology Teaching Manual (presentation). *SENCER Summer Institute*, Santa Clara, CA (2018). <https://tinyurl.com/mrycw6r7>
12. **Seiser RM**, McKinley V and Bruce, K. The RU-NECSS Graduate Biology Cohort: A partnership to enhance teacher training and build multi-level STEM education pathways (presentation). *Illinois State Academy of Sciences Annual Meeting*, Palatine, IL (2017).
13. Labov J, Scherer L and **Seiser RM.** SENCER and Graduate Education (workshop). *SENCER Summer Institute*, Stony Brook, NY (2017).
14. **Seiser RM.** Supporting Transformation Across the Curriculum at Roosevelt University (presentation). *SENCER Summer Institute*, Chicago, IL (2016).
15. **Seiser RM** and McHugh-Kurtz V. Engaging Students in Biomedical Science Through the Health Disparities

Project (presentation). *SENCER Summer Institute*, Santa Clara, CA (2012).

16. **Seiser RM** et al. Junior Faculty On a Mission: STEM Education Reform and Professional Development (presentation). *Bennett Awardee Session, SENCER Summer Institute* (2012).
17. **Seiser RM** and Watson C. Science and Social Justice (poster). *NIGMS MORE Program Directors Meeting*, Chicago, IL (2010)
18. **Seiser RM**. Civic Engagement in the Biology Curriculum (presentation). *Biotechnology Institute Annual Meeting/ BIO Conference*, Chicago, IL (2010)
19. **Seiser RM** and Wentz-Hunter K. Mission in Progress: Social Justice In the Biology Curriculum at Roosevelt University (presentation). *Campus Compact Summit on Service-Learning in STEM*, Ithaca, NY (2009).

Intramural and Extramural Funding

J. Art (PI), **R. Seiser** (co-PI), K. Lepard (co-PI) *in preparation, 2024 submission*

National Institutes of Health / University of Illinois-Chicago, Roosevelt University

TBA - NIH/NIGMS Bridges to the Doctorate (T32)

The proposed training program, focused on graduate students in biomedical science, seeks to reduce equity gaps and improve the recruitment, retention, and graduation rates of these first generation and disadvantaged students. My role will be to direct the activities of Roosevelt MS students in the training program.

R. Seiser (PI), J. Allen (co-PI), K. Poulson-Ellestad (co-PI) *submitted 9/30/23 (pending)*

Max Goldenberg Foundation

Acquisition of a Flow Cytometry system to enhance undergraduate education and research at Roosevelt U.

If funded, this equipment grant will enable the BPHS department to upgrade its flow cytometry equipment at the Chicago campus and expand opportunities for discovery in cell biology, immunology and biochemistry.

A. Qubbaj (PI), **R. Seiser** (team co-lead) *5/15/23-present*

National Science Foundation (2204577) / UT-Rio Grande Valley

ADVANCE: THRIVE Partnership (Healthy Department Initiative for Inclusive Excellence) Chairs Cohort

The goal of the Latina THRIVE Partnership is to transform Hispanic Serving Institution academic STEM departments into psychologically healthy workplaces for faculty, with specific emphasis on supporting Latina/x engagement and success. My role is as a member of a cohort of department chairs who are leading campus change teams at a dozen US institutions.

B. Anderson (PI), **R. Seiser** (content author) *6/1/22-present*

US Department of Education FIPSE / University of Illinois System/CARLI

Support for the Creation of Open Educational Resources (SCOERs) Phase I: Development and Implementation of Open Access Problems and Activities for Health-Focused Chemistry Courses

The project is a multi-institution collaboration to update an open textbook for General, Organic and Biochemistry and adds ancillary materials including problem sets, case studies, health science applications and 3-D printed teaching materials. My role is as one of five faculty members who are developing new textbook content.

A. Schacter (PI), **R. Seiser** (module specialist) *9/1/20-8/31/22*

National Science Foundation (2049163) / Santa Clara University

RAPID: Online Educational Resources on the Science of Vaccines <https://www.vaccine-science-education.org>

This project supported development, dissemination and assessment of educational resources intended to reduce vaccine hesitancy among students and the public. My role was as one of four module developers who developed and published educational materials during the COVID-19 pandemic.

R. Seiser (PI)

submitted 2/4/20 (not funded)

National Science Foundation

IUSE: Development and Dissemination of Civic-Minded Biology Teaching Modules

The project was to develop, disseminate and assess the effectiveness of open educational resources for undergraduate biology courses that are grounded in civic issues and adaptable for multiple settings. Although we received positive reviews, the PI and co-authors elected to focus on other priorities during the COVID pandemic.

R. Seiser (PI), O. Onajole (co-PI), M. Maly (co-PI)

submitted 3/7/19 (not funded)

National Science Foundation

S-STEM: Roosevelt University Natural Science Connections (RU-NSC)

This proposal was to fund scholarships, civic engagement opportunities and career development activities for undergraduate students in biology and biochemistry.

Burns, WD (PI), **R. Seiser** (co-director of regional hub)

10/1/12-9/30/17

National Science Foundation (1224488) / Harrisburg University of Science & Technology

Science Education for New Civic Engagements and Responsibilities (SENCER)

Roosevelt University was lead institution for a regional implementation sub-award of the SENCER grant. As regional co-director, my role was to organize regional conferences and oversee implementation grants to participating faculty in the Upper Midwest.

R. Seiser (PI)

1/1/16-5/15/16

Roosevelt University

Faculty Research Leave Proposal

The leave period involved both investigations into growth and form in the brewer's yeast *S. cerevisiae* and project development as a SENCER Visiting Scientist for the National Center for Science and Civic Engagement.

R. Seiser (co-PI) and M. Adeyeye (co-PI)

submitted 5/1/15 (not funded)

National Science Foundation

NRT-IGE: Cross-college Master's Program in Biopharmaceutical Technology

The proposal was to support curriculum development and student support in an interdisciplinary master's thesis program between the College of Arts and Sciences and College of Pharmacy at Roosevelt University.

C. Watson (PI) and **R. Seiser** (Coordinator / Co-PI)

9/1/08-8/31/13

National Institutes of Health (GM083900)

Elgin Community College – Roosevelt University Bridge Program (R25)

This Bridges to the Baccalaureate program provided academic year support and research opportunities at Roosevelt University for underserved minority students in STEM disciplines at Elgin Community College. My roles were as program co-director (2011-2013), program coordinator (2008-2011) and head of research and instruction.

- R. Seiser** (co-PI) and K. Leckrone (co-PI) 10/1/06-9/30/08
National Science Foundation sub-award / National Center for Science and Civic Engagement
Implementation of SENCER Ideals in Core Majors Courses at Roosevelt University
This faculty development initiative introduced civic engagement projects and other curriculum reforms into courses for biology, chemistry, and math majors at Roosevelt.
- R. Seiser** (PI) 11/1/07-10/31/08
Max Goldenberg Foundation
Seeing the Difference - Molecular Imaging for Biology Research and Teaching Labs
This equipment grant supported acquisition of 2-D imaging and analysis systems.
- R. Seiser** (co-PI) and K. Leckrone (co-PI) 8/15/06/-5/15/08
McCormick-Tribune Service Learning Grant
In the Service of Learning: Implementing SENCER Ideals at Roosevelt University
This student-centered program introduced service-learning activities and supported other faculty development initiatives.
- R. Seiser** (PI) 6/1/05-12/15/07
Roosevelt University – Faculty Summer Grants and Research Leave (multiple awards)
Ribosome biology as an example of eukaryotic cellular systems
The study examined the relationship between ribosome biogenesis and cell growth in a yeast model system.
- R. Seiser** (co-PI) and K. Leckrone (co-PI) 11/1/05-10/31/06
Max Goldenberg Foundation
Liquid Chromatography As An Interdisciplinary Teaching Tool In The Natural Sciences
This equipment grant supported acquisition of HPLC and low-pressure chromatography equipment.
- R. Seiser** (PI) and E. Craig (sponsor) 5/01/03-8/15/04
National Institutes of Health (GM68208)
NIH-NRSA: Regulation of protein translation by heat shock proteins (F32)
The study involved the role of a yeast molecular chaperone in protein synthesis and paved the way for early-career investigations with student researchers at Roosevelt.

Other Service Activities

External

- 2014-present Co-Organizer, SENCER Midwest Regional Conferences – *Teaching College Science and Math Through Food, Health, and Sustainability Themes; Engaging Science; Connecting With Your Community Through the Classroom: A SENCER Workshop*
- 2015-2017 SENCER House Calls (institutional consultations) - University of Minnesota-Rochester, Truman State University, Case Western Reserve University
- 2011 Abstract reviewer and poster session judge, ABRCMS
- 2010 Poster session judge, Minority Affairs Committee, American Society for Cell Biology
- 2004-2008 Cell Biology Session Chair, Argonne Undergraduate Research Symposium

Internal

2022-2023 Enrollment Management and Retention Task Force
2021-present Roosevelt Student Research and Inquiry Symposium (RSRIS) planning committee
2020-2023 College Reorganization Task Forces
2019-present Schaumburg Campus Operations Council
2018-present Schaumburg Student Activities Fund Allocation Committee (SAFAC)
2015-present RU PULSE Team (Partnership for Undergraduate Life Science Education)
2015-present Internal reviewer for proposals to National Science Foundation and Max Goldenberg Foundation
2012-2013 Roosevelt University Strategic Planning Group
2010-present Classroom Peer Observations

Teaching

New Course Development

Biology 113 - The Nature of Science
Biology 405 - Molecular Cell Biology
Biology 468 - Research Methods
Biology 482 - Biotechnology Industry Practice
Biochemistry 322/422 - Fermentation Science
Biochemistry 356/456 - Experimental Methods in Biochemistry & Biotechnology
History 342 - History of Science (honors)

Other Courses Taught

Biology 301 - Molecular and Cellular Biology
Biology 458 - Cell Biology
Biochemistry 393/493 - Biochemistry Seminar
Biology 351/451 - Genetics laboratory
Biochemistry 355/455 - Biochemistry
Biology 367/467 - Immunology (with laboratory)
Biology 150 - Science As a Way of Knowing
Biology 151 - Introduction to Basic Scientific Inquiry

Curriculum Development

BS - MS Accelerated Degree Pathway in Biology
Biotechnology Management concentration, MS Biotechnology & Chemical Science graduate program
MS Biology curriculum for in-service high school teachers
Course-based undergraduate and graduate research experiences

Collaboration and Sponsorship

Collaborators

Bernard Santarsiero, University of Illinois-Chicago
Jennifer Kowalski, Butler University
Davida Smyth, Texas A&M University-San Antonio

Amy Shachter, Santa Clara University
Trace Jordan, New York University
Karen Oates, Worcester Polytechnic Institute
Heather Pelzel, University of Wisconsin-Whitewater
Robert Drew Sieg, Truman State University
Karel Jacobs, Chicago State University
Virginia McHugh-Kurtz, Harper College
Deborah Lycan, Department of Biology, Lewis and Clark College
Jessica Allen, Norbert Cordeiro, Kristen Leckrone, Oluseye Onajole, Kelsey Poulson-Ellestad, Melanie Pivarski & Kelly Wentz-Hunter, Roosevelt University

Research Advisors

Elizabeth Blackwell, Lawrence University, undergraduate advisor
Robert Wise, University of Wisconsin-Oshkosh, undergraduate advisor
Christopher Nicchitta, Duke University, graduate advisor
Elizabeth Craig, University of Wisconsin-Madison, postdoctoral advisor

Student Sponsorship

3 MS theses – A. Baker, A. Piotrowski, A. Slesar
4 Roosevelt Scholars (undergraduate honors research)
32 other Roosevelt University MS and MA students (non-thesis research experience)
9 other Roosevelt University undergraduate students (introductory research experience)
4 Elgin Community College students (summer research experience)

Examples of Student Placement and Career Outcomes

Andrew Baker, PhD - *RU MS Biology* – AbbVie (study management associate)
Cheryl Barner - *RU MS Biotechnology* – Arrowhead Pharmaceuticals (scientist, clinical pharm.)
Urszula Juskiewicz - *RU BS Biochemistry*, MS Biotechnology – Pfizer (clinical site care partner)
Nnenna Nwogu, PhD - *RU MS Biotechnology* – Integral Molecular (research scientist)
Neha Patel - *RU MS Biotechnology* – LabWare (validation engineer)
Rikita Shah - *RU BS Biochemistry*, MS Biotechnology – Abbott (quality assurance support specialist)
Anupam Sharma - *RU MS Biotechnology* – creative werks, llc (quality and FSQ manager)
Abby Slesar - *RU MS Biology* – bioMérieux (field application specialist lead)