

KAITLYN C. M. GRANDO, Ph.D.

Molecular Immunologist and Microbiologist

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EDUCATION

- 2019-2025 **Ph.D.** | Temple University Lewis Katz School of Medicine, Philadelphia, PA
Biomedical Sciences | Concentration in Infectious Disease and Immunity
- 2011-2015 **B.S.** | Messiah University, Mechanicsburg, PA
Molecular Biology | Magna cum laude | Dean's List

CERTIFICATION

- 2026-Present **Teaching in Higher Education** | Temple University College of Education and Human Development, Philadelphia, PA

RESEARCH POSITIONS

- 2025-Present **Postdoctoral Fellow** | Temple University Lewis Katz School of Medicine, Philadelphia, PA
Faculty Mentors, Çağla Tükel, Ph.D. (Center for Microbiology and Immunology) and Steven Popoff, Ph.D. (Department of Biomedical Education and Data Science)
The mechanisms by which genetics and diet contribute to complex autoimmune disease associated with bacterial infection. Mechanisms of *Salmonella* biofilm components contributing to neuroinflammation. Teaching post-baccalaureate, podiatry, and medical students basics of microbiology and immunology.
- 2019-2025 **Graduate Research Assistant** | Temple University Lewis Katz School of Medicine, Philadelphia, PA
Doctoral Dissertation Advisor, Çağla Tükel, Ph.D. (Center for Microbiology and Immunology)
Center for Microbiology and Immunology: The mechanisms by which bacterial biofilms and their components interact with genetic predisposition to contribute to the development of autoimmune disorders during *Salmonella* infection
- 2015-2019 **Research Specialist** | Center for Neurodegenerative Disease Research, University of Pennsylvania, Philadelphia, PA
Principal Investigator, Vivianna Van Deerlin, M.D., Ph.D. (Center for Neurodegenerative Disease Research)
The genetics behind neurodegenerative diseases like Alzheimer's disease, Parkinson's disease, and amyotrophic lateral sclerosis in human patients
- 2014 **Undergraduate Research Assistant** | Messiah University, Mechanicsburg, PA
Research Advisor, Lawrence Mylin, Ph.D.
The development of hybridoma lines expressing an intron sequence of the cholecystokinin C receptor involved in pancreatic cancer, fused to SV40 T antigen

TEACHING EXPERIENCE

- 2026 *Guest Lab Instructor*, 3D Biofilms experiential learning module. General Microbiology (BIOL 3317). Temple University Undergraduate program.
- 2025-2026 *Guest Basic Science Instructor*, Case-based learning activities for Fundamentals 3 (MEDS M013), Fundamentals 4 (MEDS M014), Systems 5 (MEDS M022), Systems 6 (MEDS M021). Temple University Lewis Katz School of Medicine Medical Doctor program.
- 2025-Present *Lecturer*, Biology of the Immune Response (BMSC 8602). Temple University Lewis Katz School of Medicine Biomedical Sciences Graduate program.
- 2025-Present *Lecturer*, Molecular Basis of Microbiology and Immunology (ACMS 5006). Temple University Lewis Katz School of Medicine Advanced Core Medical Science Postbaccalaureate program.
- 2025-Present *Lecturer*, Foundations of Medical Sciences II (PA8203).
Temple University Lewis Katz School of Medicine Physician Assistant Master of Medical Science.
- 2025-2026 *Lecturer*. Medical Microbiology and Immunology (P120).
Temple University School of Podiatric Medicine.

2023-Present *Lecturer*, Cellular and Molecular Basis of Immunology and Microbiology for Pre-Health Postbaccalaureates (ACMS 4006). Temple University College of Science and Technology Advanced Core Health Science Postbaccalaureate program.

MENTORING, TUTORING, & TRAINING EXPERIENCE

2026-Present *Undergraduate Eliza Huang*. Temple University, project TBD.

2023-Present *PhD candidate Sophia Olubajo*. Lewis Katz School of Medicine “Curli-induced inflammation in mouse models of Alzheimer’s disease”

2026-Present *PhD student Megan Van Der Bas*. Lewis Katz School of Medicine “Curli-induced autoimmunity and neuroinflammation in lupus mouse models”

2026 *MD/PhD rotating student Catarina Alexandria Bettencourt*. Lewis Katz School of Medicine “Immune response to curli in endothelial cell culture”

2026 *MD/PhD rotating student Manaswini Gopalakrishnan*. Lewis Katz School of Medicine “Immune response to curli in endothelial cell culture”

2023-2026 *MD/PhD candidate Molly Elkins*. Lewis Katz School of Medicine “Immune response to Z-DNA in *Salmonella* biofilms”

2024 *Lab Technician Kofi Adade*. Temple University “Commensal enteric curli production”

2024 *Visiting Postdoc. Peter Verstraelen, PhD*. University of Antwerp. Lab technique training.

2023 *Undergraduate Alejandro Magana Pantoja*. Temple University, “Cecum staining from *Salmonella*-infected mice and macrophages for curli and unfolded protein response markers”

2023 *MD candidate Max Horowitz*. Lewis Katz School of Medicine, “Sterile Prepping an external fixator device – is it even possible?”

2023 *Visiting Scientist Neha Jain, PhD*. Indian Institute of Technology. Lab technique training.

2022-2023 *Undergraduate Kathrine Kyrilchuk*. Temple University “Adaptive Immune Response Elicited by Curli-Amyloid Presenting Dendritic Cells” & “Antigen-specific CD4+ T Cell Response to Curli

2022 *Graduate Aikaterini Dimou*. Lewis Katz School of Medicine. Peer tutoring for Molecules to Cells class.

2022 *Lab Technician Kayla Harrell*. Temple University “Curli interacts with HLA-B27 to trigger inflammation”

2021 *Graduate Kathleen Rajavong*. Lewis Katz School of Medicine. Peer tutoring for Organ Systems and Essentials of Neuroscience classes.

2021 *Graduate Rumesa Hashmi*. Lewis Katz School of Medicine. Peer tutoring for Organ Systems class.

2021 *Graduate Allie Heller*. Lewis Katz School of Medicine. Peer tutoring for Molecules to Cells class.

2021 *Undergraduate Edison Kim*. Temple University “Curli induces the unfolded protein response in bone-marrow derived macrophages.”

AWARDS & ACCOMPLISHMENTS

2026 *Peggy Cotter Travel Award from EPA-ASM | ASM Microbe 2026*

2025 *Dr. Mark E Shirliff Award for Excellence in Biofilm Research*
Mid-Atlantic Microbial Pathogenesis Meeting (MAMPM)

2024 *2nd place poster award | EPA-ASM 33rd Annual Philadelphia Infection & Immunity Forum*

2024 *American Society for Microbiology (ASM) Student Chapter Excellence Award*
as Co-President of the EPA-ASM Student Board at ASM Microbe

2021 *3rd place poster award | EPA-ASM 30th Annual Philadelphia Infection & Immunity Forum*

2014-2015 *Biology Departmental Honors | Messiah University*

2014-2015 *Sigma Zeta National Science & Mathematics Honors Society | Messiah University*

2014 *Steinbrecher Summer Research Scholarship | Messiah University*

2011-2015 *Honors College, President’s Scholarship | Messiah University*

ACADEMIC SERVICE & PROFESSIONAL DEVELOPMENT

Eastern Pennsylvania Branch of the American Society for Microbiology (EPA-ASM)

2026-Present	Executive Committee, Treasurer
2025	34 th Annual Philadelphia Infection & Immunity Forum Poster Judge
2023-2024	Peggy Cotter Travel Award Selection Committee
2023-2024	Student Consultant to the Education Committee
2023-2024	Student Board Co-President
2022-2023	Student Board Vice President
2021-2022	Student Board Secretary
2021-2023	Organizer of the 30 th -32 nd Annual Philadelphia Infection & Immunity Forum

Temple University | Lewis Katz School of Medicine

2023-Present	Graduate student mentor
2022-2024	Undergraduate student mentor
2021-2023	Co-head of student-led journal club
2021-2022	Graduate student tutor
2022	Career Programming Committee, IDIM Cluster representative
2022	Graduate Preliminary Exam (IRP) Study Section Reviewer

Professional Workshops Attended

2026	(2-day) Temple University Center for the Advancement of Teaching 24 th Annual Faculty Conference on Teaching Excellence
2025	(1-hr) "Welcoming People with Mental Health Disabilities in Academia" by Dr. Mark Salzer, Temple University Lewis Katz School of Medicine Diversity Committee
2024	(1-hr) "Bringing Outreach in – Making Outreach Mainstream to Increase STEM Recruitment" at ASM Microbe
2024	(1-hr) "Advancing Inclusive and Equitable Mentoring in Biology Laboratory Course Contexts" at ASM Microbe
2024	(1-hr) "Microbial Diversity: Empowering Disabled Scientists in Microbiology" at ASM Microbe
2024	(1-hr) "Embracing Active Learning and Artificial Intelligence in Microbiology Education" at ASM Microbe
2023	(2-day) "Teaching Students How to Teach 101" by Temple University Office of Health Equity, Diversity & Inclusion and the Center for the Advancement of Teaching

PUBLICATIONS

(*co-first author)

Kaitlyn Grando, Molly Elkins, Lauren Nicastro, Shingo Bessho, Sophia Olubajo, Anita Kowal, Vincent Tam, Roberto Caricchio, David Pisetsky, Gregg J Silverman, and Çağla Tükel. 2026. "Salmonella infection and biofilms drive anti-C1q and anti-dsDNA autoantibodies in systemic autoimmunity." *PLoS Pathogens* (In Revision).

Olubajo, Sophia*, Roberto Guzmán-Hernández*, Peter Verstraelen, Shingo Bessho, Saadet Inan, **Kaitlyn Grando**, Winnok H De Vos, Silvia Fossati, and Çağla Tükel. 2026. "Role of Bacterial Amyloid Curli in Blood-Brain Barrier Disruption and Neuroinflammation." *PNAS* (In Revision).

Bessho, Shingo, **Kaitlyn Grando**, Sophia Olubajo, Anita Kowal, Amanda Miller, Michael Lee, Vincent Tam, Andres Klein-Szanto, Ronald Wilson, Stefania Gallucci, and Çağla Tükel. 2026. "Contribution of Local Salmonella Infection to Autoreactivity: Divergent Roles of Type I Interferons in Colonization and Autoantibody Production." *mBio* (Accepted).

Elkins, Molly, **Kaitlyn Grando**, Courtney Covolo, Diane Spencer, Jacob F Maziarz, Erin M Vasicek, Carly DeAntoneo, Francisco J Albicoro, Shingo Bessho, Zachary W Reichenbach, Sophia Olubajo, Bettina Buttaró, Siddharth Balachandran, John S Gunn, David Pisetsky, and Çağla Tükel. 2026. "Biofilm-derived curli and Z-DNA shape anti-DNA antibody responses during Salmonella infections." *PLoS Pathogens* 22 (7): e1014047.
<https://doi.org/10.1371/journal.ppat.1014047>.

Grando, Kaitlyn, Shingo Bessho, Kayla Harrell, Kathrine Kyrylchuk, Alejandro M. Pantoja, Sophia Olubajo, Francisco J. Albicoro, Andres Klein-Szanto, and Çağla Tükel. 2024. "Bacterial Amyloid Curli Activates the Host Unfolded Protein Response via IRE1 α in the Presence of HLA-B27." *Gut Microbes* 16 (1): 2392877.
<https://doi.org/10.1080/19490976.2024.2392877>.

- Albicoro, Francisco J., Shingo Bessho, **Kaitlyn Grando**, Sophia Olubajo, Vincent Tam, and Çağla Tükel. 2024. "Lactate Promotes the Biofilm-to-Invasive-Planktonic Transition in *Salmonella* Enterica Serovar Typhimurium via the de Novo Purine Pathway." *Infection and Immunity* 92 (10): e0026624. <https://doi.org/10.1128/iai.00266-24>.
- Bessho, Shingo, **Kaitlyn C. M. Grando**, Kathrine Kyrylchuk, Amanda Miller, Andres J. Klein-Szanto, Wenhan Zhu, Stefania Gallucci, Vincent Tam, and Çağla Tükel. 2023. "Systemic Exposure to Bacterial Amyloid Curli Alters the Gut Mucosal Immune Response and the Microbiome, Exacerbating *Salmonella*-Induced Arthritis." *Gut Microbes* 15 (1): 2221813. <https://doi.org/10.1080/19490976.2023.2221813>.
- Grando, Kaitlyn***, Lauren K. Nicastro*, Sarah A. Tursi*, Jaime De Anda, Ernest Y. Lee, Gerard C. L. Wong, and Çağla Tükel. 2022. "Phenol-Soluble Modulins From *Staphylococcus Aureus* Biofilms Form Complexes With DNA to Drive Autoimmunity." *Frontiers in Cellular and Infection Microbiology* 12:884065. <https://doi.org/10.3389/fcimb.2022.884065>.
- Miller, Amanda L., Lauren K. Nicastro, Shingo Bessho, **Kaitlyn Grando**, Aaron P. White, Yi Zhang, Gillian Queisser, Bettina A. Buttaro, and Çağla Tükel. 2022. "Nitrate Is an Environmental Cue in the Gut for *Salmonella* Enterica Serovar Typhimurium Biofilm Dispersal through Curli Repression and Flagellum Activation via Cyclic-Di-GMP Signaling." *mBio*, February, e0288621. <https://doi.org/10.1128/mbio.02886-21>.
- Nicastro, Lauren K., Jaime de Anda, Neha Jain, **Kaitlyn C. M. Grando**, Amanda L. Miller, Shingo Bessho, Stefania Gallucci, Gerard C. L. Wong, and Çağla Tükel. 2022. "Assembly of Ordered DNA-Curli Fibril Complexes during *Salmonella* Biofilm Formation Correlates with Strengths of the Type I Interferon and Autoimmune Responses." *PLOS Pathogens* 18 (8): e1010742. <https://doi.org/10.1371/journal.ppat.1010742>.
- Miller, Amanda L., Shingo Bessho, **Kaitlyn Grando**, and Çağla Tükel. 2021. "Microbiome or Infections: Amyloid-Containing Biofilms as a Trigger for Complex Human Diseases." *Frontiers in Immunology* 12. <https://doi.org/10.3389/fimmu.2021.638867>.
- Suh, EunRan, **Kaitlyn Grando**, and Vivianna M. Van Deerlin. 2018. "Validation of a Long-Read PCR Assay for Sensitive Detection and Sizing of C9orf72 Hexanucleotide Repeat Expansions." *The Journal of Molecular Diagnostics: JMD* 20 (6): 871–82. <https://doi.org/10.1016/j.jmoldx.2018.07.001>.

RESEARCH PRESENTATIONS

Oral presentations:

- Grando, K.**, Elkins, M., Nicastro, L., Bessho, S., Silverman, G., Klein-Szanto, A., Tükel, Ç. *Salmonella* amyloid curli induces anti-C1q autoantibodies in mouse models of lupus. 820th Monthly Meeting of the Eastern Pennsylvania Branch American Society of Microbiology (EPA-ASM), May 19, 2025. Philadelphia, PA.
- Grando, K.**, Bessho, S., Harrell, K., Kyrylchuk, K., Magana Pantoja, A., Olubajo, S., Albicoro, F., Klein-Szanto, A., Tükel, Ç. *Salmonella* amyloid curli activates the host unfolded protein response in the presence of HLA-B27. Center for Immunology Seminar Series at Fox Chase Cancer Center, May 10, 2024. Philadelphia, PA.
- Grando, K.**, Bessho, S., Harrell, K., Nicastro, L., Miller, A., Tükel, Ç. Interplay between curli-induced autoimmunity, joint inflammation, and HLA-B27. Dawn Marks Research Day at Lewis Katz School of Medicine, August 24, 2022, Philadelphia, PA.
- Grando, K.**, Bessho, S., Kim, E., Nicastro, L., Miller, A., Tükel, Ç. The role of bacterial amyloid curli in *Salmonella*-induced Reactive Arthritis. 795th Monthly Meeting of the Eastern Pennsylvania Branch American Society for Microbiology (EPA-ASM), May 23, 2022, Virtual.

Poster presentations:

- Grando, K.**, Elkins, M., Nicastro, L., Bessho, S., Olubajo, S., Kowal, A., Tam, V., Caricchio, R., Pisetsky, D., Silverman, G., Tükel, Ç. *Salmonella* infection and biofilms drive anti-C1q and anti-dsDNA autoantibodies in systemic autoimmunity. ASM Microbe, June 4-8, 2026, Washington DC.
- Grando, K.**, Elkins, M., Nicastro, L., Bessho, S., Silverman, G., Klein-Szanto, A., Tükel, Ç. *Salmonella* biofilm-associated amyloid curli induces anti-C1q autoantibodies in lupus nephritis mouse model NZBxW/F1. Mid-Atlantic Microbial Pathogenesis Meeting, February 2-4, 2025, Wintergreen, VA.

Grando, K., Elkins, M., Nicastro, L., Bessho, S., Silverman, G., Klein-Szanto, A., Tükel, Ç. *Salmonella* biofilm-associated amyloid curli induces anti-C1q autoantibodies in lupus nephritis mouse model NZBxW/F1. 33rd Annual Philadelphia Infection & Immunity Forum, December 2, 2024. Philadelphia, PA.

Grando, K., Bessho, S., Harrell, K., Kyrylchuk, K., Magana Pandoja, A., Klein-Szanto, A., Tükel, Ç. Interplay between *Salmonella* Amyloid Curli, the Unfolded Protein Response, and the Reactive Arthritis Genetic Risk Factor HLA-B27. Dawn Marks Research Day at Lewis Katz School of Medicine, August 28, 2024, Philadelphia, PA.

Grando, K., Bessho, S., Harrell, K., Kyrylchuk, K., Magana Pandoja, A., Klein-Szanto, A., Tükel, Ç. Interplay between *Salmonella* Amyloid Curli, the Unfolded Protein Response, and the Reactive Arthritis Genetic Risk Factor HLA-B27. ASM Microbe, June 13-17, 2024, Atlanta, GA.

Grando, K., Bessho, S., Harrell, K., Kyrylchuk, K., Magana Pandoja, A., Miller, A., Nicastro, L., Tükel, Ç. *Salmonella* biofilm-associated protein curli interacts with the reactive arthritis genetic risk factor HLA-B27 through the unfolded protein response. 32nd Annual Philadelphia Infection & Immunity Forum, December 1, 2023, Philadelphia, PA.

Grando, K., Bessho, S., Harrell, K., Kyrylchuk, K., Magana Pandoja, A., Miller, A., Nicastro, L., Tükel, Ç. *Salmonella* biofilm-associated protein curli and reactive arthritis genetic risk factor HLA-B27 interact through the host unfolded protein response. Dawn Marks Research Day at Lewis Katz School of Medicine, August 30, 2023, Philadelphia, PA.

Grando, K., Bessho, S., Harrell, K., Nicastro, L., Miller, A., Tükel, Ç. Interplay between *Salmonella* biofilm-associated protein curli and genetic risk factor HLA-B27 in reactive arthritis. Lewis Katz School of Medicine Department of Microbiology, Immunology and Inflammation Research Day, April 20, 2023, Philadelphia, PA.

Grando, K., Bessho, S., Harrell, K., Nicastro, L., Miller, A., Tükel, Ç. Interplay between *Salmonella* biofilm-associated protein curli and genetic risk factor HLA-B27 in reactive arthritis. Mid-Atlantic Microbial Pathogenesis Meeting, February 5-7, 2023, Wintergreen, VA.

Grando, K., Bessho, S., Harrell, K., Nicastro, L., Miller, A., Tükel, Ç. Interplay between *Salmonella* biofilm-associated protein curli and genetic risk factor HLA-B27 in reactive arthritis. 31st Annual Philadelphia Infection & Immunity Forum, December 12, 2022, Philadelphia, PA.

Grando, K., Bessho, S., Harrell, K., Nicastro, L., Miller, A., Tükel, Ç. Interplay between *Salmonella* biofilm-associated protein curli and genetic risk factor HLA-B27 in reactive arthritis. ASM Biofilms, November 13-17, 2022, Charlotte, NC.

Grando, K., Bessho, S., Harrell, K., Nicastro, L., Miller, A., Tükel, Ç. Interplay between curli-induced autoimmunity, joint inflammation, and HLA-B27. Dawn Marks Research Day at Lewis Katz School of Medicine, August 24, 2022, Philadelphia, PA.

Grando, K., Bessho, S., Kim, E., Nicastro, L., Miller, A., Tükel, Ç. The role of bacterial amyloid curli in *Salmonella*-induced Reactive Arthritis. Mid-Atlantic Microbial Pathogenesis Meeting, February 12-14, 2022, Wintergreen, VA.

Grando, K., Bessho, S., Kim, E., Nicastro, L., Miller, A., Tükel, Ç. The role of bacterial amyloid curli in *Salmonella*-induced Reactive Arthritis. 30th Annual Philadelphia Infection & Immunity Forum, December 14, 2021, Virtual.

Grando, K., Suh, E., Neal, D., Richardson, H., Hennessey, L., McMillan, C., Irwin, D., Lee, E.B., Grossman, M., McCluskey, L., Elman, L., Xie, S., Trojanowski, J.Q., Van Deerlin, V.M. Characterization of sequence variants in downstream flanking region of C9orf72 hexanucleotide repeat in frontotemporal dementia and amyotrophic lateral sclerosis. American Academy of Neurology Annual Meeting, 2019. Philadelphia, PA.

Grando, K., Suh, E., Neal, D., Richardson, H., Hennessey, L., McMillan, C., Irwin, D., Lee, E.B., Grossman, M., McCluskey, L., Elman, L., Xie, S., Trojanowski, J.Q., Van Deerlin, V.M. Characterization of sequence variants in downstream flanking region of C9orf72 hexanucleotide repeat in frontotemporal dementia and amyotrophic lateral sclerosis. Center for Neurodegenerative Disease Research Retreat, 2018. Philadelphia, PA.

Grando, K., Suh, E., Van Deerlin, V.M. Characterization of Variants in the C9orf72 Expansion Region. Institute on Aging Retreat, 2017. Philadelphia, PA.

Grando, K., Burkett, C., and Mylin, L.M. Transfection of Primary Kidney Cells with Mutated SV40 T ag DNA Containing a CCKCR Intron-Derived Sequence. Messiah College's Spring and Fall Research Symposiums, 2014-2015. Mechanicsburg, PA.