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EDUCATION

2012 Ph.D., Chemistry, Massachusetts Institute of Technology, Cambridge, MA
2007 B.S., Chemistry, *summa cum laude*, Saint Mary's College, Notre Dame, IN

RESEARCH POSITIONS & TRAINING

2019-pres. Clare Boothe Luce Assistant Professor of Chemistry and Biochemistry
University of Notre Dame, Notre Dame, IN
Member, Harper Cancer Research Institute
Graduate Program Member: Chemistry & Biochemistry, Biophysics, and Integrated Biomedical Sciences (IBMS)

2012-2018 Postdoctoral Fellow, UCSF, San Francisco, CA
Advisor: Diane Barber (Department of Cell and Tissue Biology)

2007-2012 Graduate Research Assistant, MIT, Cambridge, MA
Advisor: Alice Ting (Department of Chemistry)

2006 Summer Research Intern, Eli Lilly and Co., Indianapolis, IN
Advisor: Anne Dantzig

2005 NSF Summer Research Intern, Columbia University, New York, NY
Advisor: Brian Gibney (Department of Chemistry)

2005-2007 Interdisciplinary Research Intern, Saint Mary's College, Notre Dame, IN
Advisors: Toni Barstis (Chemistry) & Joanne Snow (Mathematics)

AWARDS

2020-2025 NIH New Innovator Award (DP2)

2019-2025 Clare Boothe Luce Assistant Professorship

2013-2016 Ruth L. Kirschstein NRSA Postdoctoral Fellowship

2013 American Cancer Society Postdoctoral Fellowship (declined)

2008 Outstanding Teaching Award, MIT Department of Chemistry

2007 Howard Hughes Medical Institute-MIT Teaching Assistant Fellowship

2007 Phi Beta Kappa; Sigma Xi

2007 Outstanding Undergraduate Research Award, American Chemical Society

RESEARCH FUNDING

2020-2025 DP2: NIH New Innovator Award
Principal Investigator; \$1,500,000 (DP2-CA26041601)

2019-2021 American Cancer Society-IRG
Principal Investigator; \$60,000

2019 Pilot Drug Discovery Grant, Warren Center for Drug Discovery
Principal Investigator; \$25,000

2013-2016 Ruth L. Kirschstein NRSA Postdoctoral Fellowship
Principal Investigator; \$152,838 (F32-CA177085)

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PREPRINTS

Italicized names are trainees at Notre Dame

2. Spear JS, **White KA**. Single-cell intracellular pH measurements reveal cell-cycle linked pH dynamics. *BioRxiv*.
1. Donahue CET, Siroky MD, **White KA**. An optogenetic tool to raise intracellular pH in single cells and drive localized membrane dynamics. *BioRxiv*. DOI: 10.1101/2021.03.09.434608 (in revision, *JACS*).

PUBLICATIONS

Italicized names are trainees at Notre Dame

* = Equal Contributions

17. Sesanto R*, Kuehn JF*, Barber DL, **White KA**. Low pH Facilitates Heterodimerization of Mutant Isocitrate Dehydrogenase IDH1-R132H and Promotes Production of 2Hydroxyglutarate. *Biochemistry. in press*.
16. Czowski BJ*, Romero-Moreno R*, Trull KJ*, **White KA**. Cancer and pH dynamics: Transcriptional regulation, proteostasis, and the need for new molecular tools. *Cancers* 12(10) 2760 (2020) [PMID: 32992762](#)
15. Luna, LA, Lesecq Z, **White KA**, Hoang A, Scott DA, Zagnitko O, Bobkov AA, Barber DL, Schiffer JM, Isom DG, Sohl CD. An acidic residue buried in the dimer interface of isocitrate dehydrogenase 1 (IDH1) helps regulate catalysis and pH sensitivity. *Biochem J* 477(16):2999-3018 (2020) [PMID: 32729927](#).
14. Liu Y, **White KA**, Barber DL. Intracellular pH regulates cancer and stem cell behaviors: A protein dynamics perspective. *Front Oncol*. 10:1401. (2020) [PMID: 32983969](#)
13. **White KA**, Kisor K, Barber DL. Intracellular pH dynamics and charge-changing somatic mutations in cancer. *Cancer Metastasis Rev*. 38(1-2):17-24. (2019). [PMID: 30982102](#)
12. Grillo-Hill BK, **White KA**. Oncogenic β -catenin mutations evade pH-regulated degradation. *Mol Cell Oncol*. 6(1):1554470. (2019) [PMID: 30788422](#)
11. **White KA***, Grillo-Hill BK*, Esquivel M, Peralta J, Bui VN, Chire I, Barber DL. β -catenin is a pH sensor with decreased stability at higher intracellular pH. *JCB* 217(11):3965 (2018) [PMID: 30315137](#)
Featured in JCB Special Collection (May 2019): Outstanding articles in the cell biology of adhesion
10. **White KA**, Garrido Ruiz D, Szpiech ZA, Strauli NB, Hernandez RD, Jacobson MP, Barber DL. Cancer-associated arginine-to-histidine mutations confer a gain in pH sensing to mutant proteins. *Sci. Signaling*, 10:eaam9931 (2017) [PMID: 28874603](#)
9. Vercoulen Y*, Kondo Y*, Iwig JS*, Janssen A, **White KA**, Amini M, Barber DL, Kuriyan J, Roose JP. A histidine pH sensor regulates the activation of the Ras-specific guanidine nucleotide exchange factor RasGRP1. *eLife*, 6:e29002 (2017) [PMID:28952923](#)
8. Szpiech ZA, Strauli NB, **White KA**, Garrido Ruiz D, Jacobson MP, Barber DL, Hernandez RD. Prominent features of the amino acid mutation landscape cancer. *PLoS One*, 12(8):e0183273 (2017) [PMID: 28837668](#)
7. **White KA**, Grillo-Hill BK, Barber DL. Cancer cell behaviors mediated by dysregulated pH dynamics at a glance. *J. Cell Sci.*, 130:663-669 (2017) [PMID: 28202602](#)

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6. Webb BA, **White KA**, Grillo-Hill BK, Schonichen A, Choi CC, Barber DL. A histidine cluster in the cytoplasmic domain of the Na-H exchanger NHE1 confers pH-sensitive PIP2 binding and regulates transporter activity. *JBC* 291:24096-104 (2016) [PMID: 27650500](#)
5. **White KA**[#], Zegelbone PM. Directed evolution of a probe ligase with activity in the secretory pathway and application to imaging intercellular protein-protein interactions. *Biochemistry*, 21:3728-3739 (2013) [PMID: 23614685](#)
[#]Senior and corresponding author
4. Uttamapinant C, Sanchez MI, Liu DS, Yao JZ, **White KA**, Grecian S, Clark S, Gee KR, Ting AY. Site specific protein labeling using PRIME and chelation-assisted click chemistry. *Nature Protocols* 8 (8):1620-1634 (2013) [PMID: 23887180](#)
3. Liu DS, Loh KH, Lam SS, **White KA**, Ting AY. Imaging trans-cellular neurexin-neurologin interactions by enzymatic probe ligation. *PLoS One* 8(2):e52823 (2013) [PMID: 23457452](#)
2. Uttamapinant C*, **White KA***, Baruah H*, Thompson S, Fernández-Suárez M, Puthenveetil S, Ting AY. A fluorophore ligase for site-specific protein labeling inside living cells. *PNAS*, 107:10914-10919 (2010) [PMID: 20534555](#)
Featured on *PNAS* Cover
Highlights: *Nature Methods* 7, 584 (2010), F1000
1. Puthenveetil S, Liu DS, **White KA**, Thompson S, Ting AY. Yeast display evolution of a kinetically-efficient 13-amino acid substrate for lipoic acid ligase. *JACS*, 131:16430-8 (2009) [PMID: 19863063](#)

NON-PEER REVIEWED PUBLICATIONS

1. **White KA**, Thompson-Peer KL. Peer mentoring—Colleagues as a resource for your career development. *ASCB Newsletter* October 2017. [LINK](#)

SELECTED INVITED SEMINARS

- | | |
|---------|---|
| 4/2021 | *San Diego State University, Biochemistry, San Diego, CA |
| 11/2020 | *University of California, Santa Cruz, Molecular and Cellular Biology Program, Santa Cruz, CA |
| 10/2020 | *Youngstown State University, Department of Chemistry, Youngstown, OH |
| 9/2020 | *West Virginia University, Department of Biochemistry, Morgantown, WV |
| 10/2019 | Wabash College, Department of Chemistry, Crawfordsville, IN |
| 4/2019 | Purdue University, Department of Chemistry, West Lafayette, IN |
| 3/2019 | Western Washington University, Department of Chemistry, Bellingham, WA |
| 01/2019 | Faculty Candidate Seminars (Notre Dame, UC Boulder, UPenn) |
- * = *Virtual Due to COVID-19*

SELECTED CONFERENCE INVITED TALKS

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|--------|---|
| 3/2020 | American Association for Cancer Research: Conference on Evolutionary Dynamics, Denver, CO
*Cancelled due to COVID-19 |
| 6/2019 | Telluride Science Research Center: Protein Electrostatics, Telluride, CO |
| 5/2019 | 5th Annual Midwest Tumor Microenvironment Meeting, South Bend, IN |
| 6/2017 | Telluride Science Research Center: Protein Electrostatics, Telluride, CO |
| 2/2017 | West Coast Epithelial Biology Annual Meeting, Avila Beach, CA |
| 3/2016 | Keystone Symposia: Cancer Pathophysiology, Breckenridge, CA |

3/2016 West Coast Epithelial Biology Annual Meeting, Avila Beach, CA
12/2014 Annual Meeting of the American Society for Cell Biology, Philadelphia, PA
(Microsymposium)
12/2011 Annual Meeting of the American Society for Cell Biology, Denver, CO
4/2009 NIH Nanomedicine Development Center 3rd Annual Meeting, Bethesda, MD

SELECTED CAMPUS PRESENTATIONS

3/2021 Harper Cancer Research Day, Harper Cancer Research Institute, South Bend, IN
11/2020 Cancer Cures Venture Seminar Series, Harper Cancer Research Institute, South Bend, IN
10/2019 Indiana University School of Medicine Seminar Series, South Bend, IN
10/2018 Notre Dame Biochemistry and Integrated Biomedical Sciences Retreat, Plymouth, IN
4/2018 UCSF Cell Biology, Cancer, Immunology Research In Progress Seminar
1/2018 UCSF Parnassus Cancer Research Day, San Francisco, CA
Award: Best Postdoctoral Poster Presentation
4/2017 UCSF Mission Bay Research In Progress Seminar
2/2016 UCSF Cell Biology Research In Progress Seminar
4/2015 Helen Diller Family Comprehensive Cancer Center Retreat, Santa Cruz, CA.
10/2014 Annual UCSF Biomedical Sciences Retreat, Tahoe City, CA
Award: Best Postdoctoral Poster Presentation
3/2010 Chemical Biology & Novel Therapeutics Program Meeting, Boston, MA

MENTORING

Post-doctoral Trainees

2019- Ricardo Romero-Moreno (Ph.D., Integrated Biomedical Sciences, University of Notre Dame)
2019- Keelan Trull (Ph.D., Chemistry, Purdue University)

Pre-doctoral Trainees

2020- Papa Kobina (Kobby) Van Dyck (Biophysics Program)
2020- Leah Lund (Biochemistry Program)
2020- Jacob Wagner (Biophysics Program)
2020- Brandon Czowski (Biochemistry Program)
2019- Julia Spear (Integrated Biomedical Sciences Program, IBMS)
2019- Caitlin Donahue (Biochemistry Program)

Undergraduate Trainees

2021- Natalie Waschbusch (Biochemistry, ND '23)
2020- Michael Lee (Biochemistry, ND '22)
2019- Michael Siroky (Biochemistry, ND '22)
2019- Jessamine Kuehn (Biochemistry, ND '22)
2019-2021 Cameron Ekanayake (Pre-professional, ND '21)
2019-2021 Derrick Ekanayake (Pre-professional, ND '21)

Technicians/Staff

2020- John Ochieng (MS '20, University of Michigan)
2019-2020 Jacob Smith (MS Pharmacogenomics, Manchester University '19, Current ND graduate student)
2019 Michelle Hasse Richmond (Consultant, Thrive Medical Device Consulting)

Mentee Awards

05/2021 Emil T. Hoffman TA Award for Teaching in the First Year, University of Notre Dame
Brandon Czowski

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- 11/2020 Rhodes Scholar Finalist
Cameron Ekanayake
- 4/2020 Rebecca Hizer Fellow, Taiclet Endowment for Excellence, University of Notre Dame
Caitlin Donahue, \$5,000 supplies funding
- 4/2019 Notre Dame Research Like A Champion Award
Jessamine Kuehn, \$12,000 stipend and supplies
- 4/2019 O'Brien Summer Research Fellowship
Caitlin Donahue, \$6,000 stipend support

Mentees Selected External Presentations

- 05/2021 Janelia Workshop on Biological Tools for 4D Cellular Physiology
Oral Presentations: Keelan Trull, Caitlin Donahue
- 02/2021 Biophysical Society National Meeting
Poster Presentations: Jacob Wagner
- 12/2020 ASCB Virtual Annual Meeting
Poster Presentations: Ricardo Romero-Moreno, Caitlin Donahue, Jessamine Kuehn
- 3/2020 American Chemical Society National Meeting
Oral presentation Caitlin Donahue, moved virtual due to COVID-19

Mentoring Training

- 8/2019 American Chemical Society New Faculty Workshop
- 11/2017 Scientific Leadership and Management Skills Course
Mentoring and Leadership Training for New and Future Faculty
- 4/2017 Howard Hughes Medical Institute Gilliam Mentors Workshop
Culturally Aware Mentoring: Enhancing your Skills

TEACHING

- Fall (Annual) Chemical Tools for Imaging Biology and Disease (CHEM90627, Notre Dame)
2020 Course Instructor Evaluation Composite Score: 4.4/5
- Spr. (Annual) Intermediary Metabolism (CHEM30342, Notre Dame)
2019 Course Instructor Evaluation Composite Score: 4.8/5
2020 Course Instructor Evaluation Composite Score: 5/5
2021 Course Instructor Evaluation Composite Score: 4.8/5

SERVICE-INTERNAL

- 2019- Member, Notre Dame Chemistry Ph.D. Graduate Admissions Committee
- 2019- Grant Reviewer: Harper Cancer Cures Venture (CCV) program
- 2019- Grant Reviewer: American Cancer Society-IRG internal award evaluation
- 2020 Member, Optical Microscopy Core Manager Search Committee

Current Graduate Student Thesis Committee Service

George Gray (Biochemistry Ph.D. Program) Advisor: Brian Baker
Gena Wilson (Biochemistry Ph.D. Program) Advisor: M. Sharon Stack

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Gowthami Mahendran (Biochemistry Ph.D. Program) Advisor: Margaret Schwartz
Mayesha Mim (Electrical Engineering Ph.D. Program) Advisor: Jeremiah Zartman
Iker Soto (Biochemistry Ph.D. Program) Advisor: Patricia Clark
Vijay Velagala (Biology Ph.D. Program) Advisor: Jeremiah Zartman

Completed Graduate Student Thesis Committee Service

Marwa Asem (Reader)(Integrated Biomedical Sciences) Advisor: M. Sharon Stack

SERVICE-EXTERNAL

2021-2023 Scialog Fellow, Advancing Bioimaging, Research Corporation for Science Advancement (RCSA)
2019- External Peer Reviewer: *Cell Chem. Biol.*, *ACS Sensors*, *MBoC*.
2019 Selected Participant, NSF Biology Jumpstart meeting

OUTREACH

2020-pres. President, Women in STEM Professional Development Program
Saint Mary's College, Notre Dame IN
2019-pres. Mentor, Advancing Women Leaders Mentor Program
American Association of University Women, University of Notre Dame
2018-pres. Steering Committee Member, Women in STEM Professional Development Program
Saint Mary's College, Notre Dame IN
2014-2018 Founder and President, Women Postdoc Peer Problem Solving Group
University of California San Francisco
4/23/19 Invited Speaker, "Setting Up Your Lab"
Notre Dame Postdoc Women's Committee
1/15/19 Session Chair, "Negotiation Strategies"
Women in STEM Professional Development Workshop, Saint Mary's College
10/3/18 Session Chair, "Future Faculty Panel"
Office of Career and Professional Development, University of California San Francisco
11/13/17 Session Chair, "Strategic Positioning: Why Women Need Sponsors"
Women's Career Advancement Symposium, University of California San Francisco