

Sayali Kukday, Ph.D.

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CURRENT POSITION

Associate Teaching Professor	2019-present
Iowa State University, Ames, IA	
Assistant Teaching Professor	2013-2019

EDUCATION

Postdoctoral training: <i>Advisors: Peggy Brickman and Erin Dolan</i>	2012-2013
Instructor for a large-enrollment undergraduate biology course and education research on Course-based Undergraduate Research Experiences	
Division of Biological Sciences. University of Georgia (UGA), Athens, GA	
Doctoral studies: <i>Advisor: Walter Schmidt</i>	2012
Modulating Insulin-degrading enzyme activity: Implications for identifying activators through high-throughput screening.	
Biochemistry & Molecular Biology, UGA	
Master's studies: Biochemistry	2007
Use of fluorescence in-situ hybridization (FISH) for the detection of genetic disorders in amenorrhea patients.	
The Institute of Science, University of Mumbai	
Undergraduate studies: Life Sciences and Biochemistry	2005
K.C. College, University of Mumbai	

AWARDS & RECOGNITION

GDCB Outstanding Achievement in Teaching Award, ISU	2022
iEMBER Inclusive Teaching and Research Project Idea Award	2020
Winter Session Teaching featured in Inside Iowa State Articles 1 & 2	2020
Featured in ISU CELT Faculty Spotlight	2020
Faculty Teaching Mentor, CELT Teaching Partners Program	2020-2021
Invited Speaker, Cardinal Women* Commencement, Iowa State University	2020
Scientific Teaching Fellow, Yale Poorvu Center for Teaching and Learning	2019
GDCB Large-enrollment Introductory Course Teaching Award, ISU	2018
Teaching Portfolio Program, The Graduate School, UGA	2012

Future Faculty Scholarship to attend The National Academies Summer Institutes on Undergraduate Education in Biology, UGA	2012
Outstanding Graduate Teaching Assistant Award, UGA	2011
NSF Travel Award to present at SERYM, Mississippi State University	2011
Future Faculty Program, Center for Teaching and Learning, UGA	2011
Graduate School Assistantship, UGA	2011
Grants in Aid of Research Award, Sigma Xi Scientific Honor Society	2010

Grants

Engineering-LAS Online Learning Course Development Grant, 2021	\$ 12,000
iEMBER SPARC (Supported Preliminary Award for Research Collaboration), 2021	\$ 3,000
Biology Leadership Community Catalytic Grant, 2020	\$ 10,000
Engineering-LAS Online Learning Course Development Grant, 2019	\$ 9,000
Engineering-LAS Online Learning Course Development Grant, 2017	\$ 4,000
Engineering-LAS Online Learning Course Development Grant, 2014	\$ <u>3,000</u>
Total (2013-2021)	\$ 41,000

Teaching Experience

- Have 15 years of experience teaching STEM higher education.
- Expertise in developing and facilitating active learning in large-enrollment undergraduate biology courses.
- Engage in scholarly teaching through the use of evidence-based approaches in the classroom.
- Engage in scholarship of teaching and learning through the collection of assessment data on student learning to inform teaching practices.
- Engage in discipline-based education research through the collection of assessment data on student learning leading to broader educational reform in STEM.
- Developed and led online courses at ISU for 8 years.

Courses Taught (Current)

Biology 212, Principles of Biology II In-person (Fall and Spring)
approx. 550 students per year

Biology 212, Principles of Biology II Online (Fall, Spring, Summer, and Winter)
approx. 300 students per year

Biology 307, Women in Science and Engineering (Fall)
approx. 40 students per year

Biology 313, Principles of Genetics Online (Spring)
approx. 100 students per year

Biology 491/Genetics 492, Undergraduate Teaching Experience (Fall and Spring)
approx. 20 students per year. Provide training and mentorship to undergraduate students in active learning pedagogy

BIOL 499 Undergraduate Research Experience
Mentor undergraduate students through research projects (Honors program)

Courses Taught (Past)

Genetics 491, Professional Practice in Genetic disciplines (Fall 2019)

Biology 212L, Principles of Biology II Laboratory (Faculty in-charge, 2014-2016)

Lab planning, feedback on existing and new course materials for 600-1000 students per year, conducted TA training

Biology 1103, Concepts in Biology Lecture (UGA Postdoc)

40-60% teaching of approx. 600 students

Biology 1107L, Principles of Biology I Laboratory (UGA Graduate TA)

100% teaching of approx. 48 students per semester

Biology 1108L, Principles of Biology II Laboratory (UGA Graduate TA)

100% teaching of approx. 48 students per semester

Biochemistry 3100, Introduction to Biochemistry Lecture (UGA Graduate TA)

Proctored exams and evaluated essay questions for 150 students per semester; delivered 2 guest lectures

Mentorship Experience

Teaching Mentor, CELT Preparing Future Faculty Program, ISU 2022

Teaching Mentor, Society for the Advancement of Biology Education Research 2022

Faculty Teaching Mentor, CELT Teaching Partner Program, ISU 2020-2021

Professional Development Experience

Certificate in Open Educational Practices, University of Minnesota 2022-2023

Solve My Problem Program, National Institute on Scientific Teaching (NIST) 2021

Faculty Learning Community of NIST (FALCoN) 2020-present

CELT Innovation by Design, Project-based Learning Program, ISU 2020-2021

Cardinal Women* Program, Iowa State University 2019

Summer Institute on Scientific Teaching, Stony Brook University 2019

CELT Engaged Faculty Institute, University of Northern Iowa 2019

CELT Inclusive Classroom Workshop, Iowa State University 2018

CourseSource Writing Studio Workshop, University of Minnesota 2018

Biology Scholars Program, American Society for Microbiology 2016

CELT Team-based-learning Learning Community, Iowa State University 2016-present

Partnership for Undergraduate Life Sciences Education (PULSE) Labs Workshop 2015

University of Iowa

CELT Game-based Learning Teaching and Learning Circle, ISU 2014

PROJECT LEA/RN Workshop, Iowa State University 2014

Conferences and Presentations

Society for the Advancement of Biology Education Research Conference (SABER), Minneapolis, MN	2022
TALK: A QuantCrit investigation of society's educational debts in introductory biology student learning	
POSTER: Instructor perceptions of race, racism, and racial equity discussion in introductory biology	
Inclusive Environments & Metrics in Biology Education & Research Conference (iEMBER), Billings, MT	2022
INVITED TALK: Instructor Perceptions on Dialogues about Race and Equity in STEM Classrooms	
CELT Ukrainian Course Design Institute, ISU	2022
INVITED PRESENTATION: Building Community & Inclusive Teaching	
National Association of Biology Teachers (NABT) Conference, Atlanta, GA	2021
TALK: Collaboration Affects Student Learning and Sense of Belonging in Introductory Biology	
Faculty Learning Community of the National Institute of Scientific Teaching	2021
INVITED PRESENTATION: Building Community & Inclusive Teaching	
SABER Conference, Virtual	2021
POSTER: Assessing Cognitive and Social Impacts of Collaboration on Student Learning in Introductory Biology	
National Conference on Race and Ethnicity (NCORE), Virtual	2021
Society for Applied Anthropology Conference (SFAA), Virtual	2021
PANEL PRESENTATION: Dialogue about Race and Equity in STEM Classrooms	
CELT Preparing Future Faculty Program, ISU	2021
INVITED PRESENTATION: Active Learning, Building Community & Inclusive Teaching	
Biology Leadership Community Conference, Virtual	2021
INVITED TALK: Assessing cognitive and social impacts of collaboration on student learning in introductory biology	
CELT Award-Winning Series, ISU	2021
INVITED PRESENTATION: Scientific Teaching	
CELT Winter Course Design Institute, ISU	2021
INVITED PRESENTATION: Building Community & Inclusive Teaching in large-enrollment courses	
iEMBER Conference (Virtual)	2020
SABER Conference (Virtual)	2020
REMOTE: Connected Faculty Summit	2020
ISU Online Learning Community (CELT)	2020
INVITED PANEL PRESENTATION: Online Assessments	
Biology Leadership Community Conference, Fort Myers, Florida	2020
INVITED TALK: Metastatic Mastery: A case and game-based approach to learning about cancer mechanisms	
Iowa PULSE Conference (Organizing Committee Member)	2019
Closing the Achievement Gap at Iowa State University Symposium	2018
Team-based-learning Learning Community, Iowa State University	2018
INVITED TALK: Application Exercise Success Stories (Metastatic Mastery)	

GDCB Departmental Presentation, Iowa State University	2017
Iowa State Conference on Race and Ethnicity (ISCORE)	2017-present
Beta Beta Beta Honor Society for Biological Sciences, Iowa State University	2017
INVITED TALK: From Student to Educator: A Professional Journey	
Society for the Advancement of Biology Education Research Conference	2017
ROUNDTABLE: Facilitating the Development of Science Literature Identification and Evaluation Skills in Undergraduate Biology Students	
GDCB Departmental Presentation, Iowa State University	2015
Project-Based Applied Learning (PAL) Users Meeting, UGA	2014
Southeastern Regional Yeast Meeting, Mississippi State University	2011
TALK: Cell permeable, small molecule activators of the insulin-degrading enzyme	
Biochemistry & Molecular Biology Retreat, UGA	2010
TALK: Modulation of Insulin-degrading enzyme activity: Relevance to Alzheimer's disease	
UGA Conference on Drug Discovery	2009
POSTER: Enhancing IDE activity through action of small molecules	
Southeastern Regional Yeast Meeting, Vanderbilt University	2009
TALK: Proteolytic processing of certain CaaX motifs can occur in the absence of the Rce1p and Ste24p CaaX proteases	
1st Annual Life Sciences Career Symposium, UGA	2008
Conference on Challenges in Science Communication	2006
Indian National Science Academy, Delhi, India	

Professional Associations

National Association of Biology Teachers (NABT)	2020-present
Society for the Advancement of Biology Education Research (SABER)	2016-present
International Society of the Learning Sciences	2021-2022
American Society for Microbiology	2016-2017
Association for Biology Laboratory Education	2016

Professional Leadership & Scholarship Experience

Facilitator, American Society of Plant Biologists Annual Conference	2022
WORKSHOP: Data-informed teaching: It doesn't have to be a pain-in-the-assessment	
Facilitator, CELT Ukrainian Course Design Institute, ISU	2022
Chair, SABER Web Committee	2021-present
Leader, FALCoN Organizing Team, National Institute on Scientific Teaching	2021-present
Leader, SABER PEER Network Journal Club	2020-present
Facilitator, NIST Solve My Problem Program	2021
Facilitator, CIRTL NIST Summer Institute on Scientific Teaching	2021

Facilitator, CELT Winter Course Design Institute, ISU	
Abstract Reviewer, SABER Annual Conference	2021
Reviewer for Journal of Microbiology and Biology Education	2021-present
Coordinator, Biology 212 Continuous Improvement Program, ISU	2018-2020
Coordinator, Biology 212 Learning Assistant Program, ISU	2018-present
Reviewer for CBE-Life Sciences Education (Journal)	2017-present
Research Intern, National Institute for Research in Reproductive Health Mumbai, India	2007

Publications

Kukday S, Frohn E, Paige A. 2022. Metastatic mastery: A case and game-based approach to learning about cancer mechanisms. *CourseSource*. <https://doi.org/10.24918/cs.2022.23>

Segura-Totten M, Dewsbury B, Lo SM, Bailey EG, Beaster-Jones L, Bills RJ, Brownell SE, Caporale N, Dunk R, Eddy SL, García-Ojeda ME, Gardner SM, Green LE, Hartley L, Harrison C, Imad M, Janosik AM, Jeong S, Josek T, Kadandale P, Knight J, Ko ME, **Kukday S**, Lemons P, Litster M, Lom B, Ludwig P, McDonald KK, McIntosh ACS, Menezes S, Nadile EM, Newman SL, Ochoa SD, Olabisi O, Owens MT, Price RM, Reid JW, Ruggeri N, Sabatier C, Sabel JL, Sato BK, Smith-Keiling BL, Tatapudy SD, Theobald EJ, Tripp B, Pradhan M, Venkatesh MJ, Wilton M, Warfa AM, Wyatt BN and Raut SA. **2021.** Chronicling the Journey of the Society for the Advancement in Biology Education Research (SABER) in its Effort to Become Antiracist: From Acknowledgement to Action. *Frontiers in Education*. 6:780401. doi: 10.3389/feduc.2021.780401

Kukday S. 2021. Building a connected community within a course. [*CELT Teaching Brief*](#).

Kukday S and Schmidt W. **2013.** The yeast M16A peptidases Ax11p and Ste23p. *Handbook of Proteolytic Enzymes*, 3rd edition, Oxford Academic Press: 1430-1434.

Kukday S¹, Manandhar S¹, Ludley M, Burriss M, Alper B and Schmidt W. **2012.** Cell permeable, small molecule activators of the insulin-degrading enzyme. *Journal of Biomolecular Screening*. 17(10): 1349-1362.

Krishnankutty R¹, **Kukday S¹**, Castleberry A, Breevoort S and Schmidt W. **2009.** Proteolytic processing of certain CaaX motifs can occur in the absence of the Rce1p and Ste24p CaaX proteases. *Yeast*. 26(8): 451-63.

Leadership and Notable Institutional Service

Faculty Coordinator & Mentor, Biol 212 Honors Program, ISU	2022
Chair, University Committee on the Advancement of Women and Gender Equity (UCAWGE), ISU	2022-2023

Member, Faculty Senate Ad-Hoc US Diversity Committee, ISU	2021-2022
Member, Women in Science and Engineering Curriculum Committee, ISU	2021-present
Group Leader, Cardinal Women* Student Program, ISU	2021-present
Group Leader, Cardinal Women* Program, ISU	2020-present
Volunteer, LAS Student Retention Calling Project, ISU	2020
Volunteer Session Facilitator, ISCORE, ISU	2017-present
Volunteer, COVID-19 Contract Tracing Team, ISU	2020
Member, ISU Digital Accessibility Policy Development Team, ISU	2020-present
Member, GDCB Term Faculty Advancement Committee, ISU	2020-present
Organizing Committee Member, Iowa PULSE Conference, ISU	2019
Member, Open & Affordable Education Committee, ISU	2019-present
Member, University Committee on the Advancement of Women and Gender Equity (UCAWGE), ISU	2019-present
Co-Founder/Convener, Discipline-based Education Research Journal Club, ISU	2019-present
Biology Undergraduate Program Committee Member, ISU	2018-2021
Faculty Adviser, Kuwaiti Students Association, ISU	2018-2020
Member, GDCB Chair Search Committee, ISU	2018
Judge, 3MT Competition Preliminary Heats, Graduate College, ISU	2018
Faculty Adviser, Beta Beta Beta Honor Society, ISU	2017-present
Ag-Online Advisory Committee Member, Brenton Center, ISU	2014-2021
Coordinator, Biology 212 Learning Assistant Learning Community, ISU	2014-2015
Planning Committee, Graduate Student Interdisciplinary Conference, UGA	2010-2012
Community Service Chair, Biochemistry Graduate Student Association, UGA	2009-2010
New Student Liaison, Biochemistry Graduate Student Association, UGA	2008-2009
Editor, Biochemistry Department Newsletter, Institute of Science, Mumbai, India	2006-2007

Outreach and Citizenship

Volunteer, ISU Extension and Outreach, Ames, IA	2020
Member, Board of Directors, Volunteer Center of Story County, Ames, IA	2019-2021
Judge, Homecoming Week, ISU, Ames, IA	2017-2019
Volunteer, ISU Exhibit, Iowa State Fair, Des Moines, IA	2015-2019
Judge, Iowa State Science and Technology Fair, ISU, Ames, IA	2014-present
Volunteer, March for Science, Des Moines, IA	2017
Volunteer, Bickford Assisted Living, Ames IA	2013-2016
Volunteer, Mary Greeley Medical Center, Ames IA	2015
Volunteer, Wildlife Care Clinic, Iowa State University Vet School	2014
Volunteer, Sandy Creek Nature Center, Athens GA	2012-2013
Judge, Georgia Science & Engineering Fair, UGA, Athens, GA	2011, 2012

Volunteer (Reader), Recording for the Blind & Dyslexic, Athens GA	2010-2011
Volunteer, Athens Area Homeless Shelter, Athens GA	2008-2011
Tax Volunteer (IRS/VITA certified), International Student Life Office, UGA	2007-2009