

Usha Sankar Ph.D.

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Skills

➤ **Advising and Teaching Expertise**

- Award winning, highly respected Human Physiology, Anatomy, and Biochemistry Lecturer at Fordham University. Main goals are to make students understand and appreciate the elegance and complexity of the human body as well as to prepare them for health professions. Striving to maintain student engagement and learning in remote and in person classes.
- Designed and taught a new undergraduate class “Foundations of Community and Public Health”
- Assisting senior and junior class Deans, generated reports on graduation statistics, guiding students to ensure smooth passage through college and beyond. Providing resources, options for completing the requirements, including managing transfer credits.
- Leader of the annual Pre-Health service and observation community engagement course conducted in Javeriana Medical School, Cali, Colombia.
- Core Advisor to freshmen and sophomores, including those on Pre-Health track.
- Invited in 2017 to be one of the founding Summer Freshman Academic Coordinators to advise incoming freshmen for fall 2017, and again every year since then.
- Comfortable with using programs such as Internet Native Banner, Student Success Collaborative (SSC), and DegreeWorks audits to generate meaningful advice tailored to the students’ needs.
- Co-Founder of Pleasantville Friends of STEM (a 501c3 not-for-profit) for the coordination of community involvement in enriched STEM programs at the Pleasantville School District, Pleasantville, NY. Spearheaded the formation of prize-winning Math Olympiad & Science Olympiad teams in the Pleasantville Middle and High Schools.

➤ **Academic and Research Expertise**

- Training undergraduate students to critically read, and appreciate research publications, culminating with the students producing original project proposals that are then presented at University-wide research symposia. Training graduate students at Fordham University in Human Physiology laboratory methods.
- Translating the passion for curriculum development, pedagogy, and developing student interest in STEM into engaging guidance for all students from K- through grad school.

Education

- **Ph.D. in Cell and Molecular Biology** from **Weill-Cornell Graduate School of Medical Sciences**, New York, NY

Dissertation: “*Protein phosphorylation in Vaccinia Virus: Analysis of the B1-Kinase and its substrate, H5*”

Experience

➤ Associate Teaching Professor	<i>Drexel University</i>	<i>Jan 2024- Present</i>
➤ Senior Lecturer	<i>Fordham University, Bronx, NY</i>	<i>Aug 2011- Dec 2023</i>
➤ Acting Junior Class Dean	<i>Fordham College Rose Hill</i>	<i>Jan - May 2022</i>
➤ Academic Advisor	<i>Fordham University, Bronx, NY</i>	<i>Sep 2014-Dec 2023</i>
➤ Member	<i>Committee on Health Professions, Fordham University, Bronx, NY</i>	<i>Sep 2015-Dec 2023</i>
➤ Summer Freshman Academic Coordinator	<i>Fordham University, Bronx, NY</i>	<i>2017- 2023</i>
➤ Faculty Leader	<i>Pre-health study abroad, Colombia</i>	<i>2017- 2023</i>
➤ Research Associate/ Data Mining Specialist	<i>Phase I Molecular Toxicology, Inc. Santa Fe, NM</i>	<i>Jun 2001-Oct 2002</i>

Awards, Certification, and Funded Fellowships
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➤ Grant for Developing a Community Engaged Course from Fordham CCEL	<i>Jan 2023- Dec 2023</i>
➤ Fordham Undergraduate Research Funding to Mentor a student	<i>2022, 2023</i>
➤ Beacon Exemplar Teaching Award from the Fordham University United Student Govt	<i>Apr 2022</i>
➤ Promoting Active Learning and Mentoring (PALM) Fellowship for developing evidence-based teaching methods	<i>Dec 2021</i>
➤ HAPS John Mortimer Second-Timer Award, Human Anatomy & Physiology Society For attending and presenting at the 2021 HAPS Annual Meeting	<i>May 2021</i>
➤ National Institute on Scientific Teaching (NIST) Solve My Problem Workshop	<i>Jul 2021</i>
➤ Selected for Fordham ‘Community Engaged Learning Workgroup’	<i>2020-2021</i>
➤ Earned AAC&U VALUE Institute Critical Thinking Scorer Certification	<i>Jul 2020</i>
➤ Received funding to carry out a collaborative research project on air quality	<i>2020-Pres</i>
➤ Selected for a 3-year Fellowship by QUBES to produce HITS educational resources	<i>Mar 2020</i>
➤ Selected for a University-wide Incubator Think-tank	<i>Spring 2020</i>
➤ Fordham Travel Award to attend Best Teachers Summer Institute	<i>June 2019</i>
➤ Fordham Travel Award to attend HAPS Annual Meeting	<i>May 2014</i>

Grant Funded Research

➤ “Analysis and comparison of the exposure of commuting and residential Fordham students to Particulate Matter” Fordham University Science & Justice Grant	<i>Jan 2023-</i>
➤ “Community level study of air quality and impact on health outcomes in the Bronx” Con Edison	<i>Jan 2023-</i>

Publications

➤ “Project FRESH Air: A Community engagement project about health and climate” Holler, S. Sankar, U. , McNeil, M., Knuts, M., Jack, J. <i>Phys.Teach.</i> 2024 https://doi.org/10.1119/5.0136945	<i>Jan 2024</i>
➤ "Education for Environmental Justice: The Fordham Regional Environmental Sensor for Healthy Air" Holler, S., Sankar, U. , McNeil, M., Knuts, M., Jack, J. <i>Soc. Sci.</i>	<i>Dec 2023</i>

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- 2023, 12(12)681 <https://doi.org/10.3390/socsci12120681>
- “Chatbot responses suggest that hypothetical questions are harder than realistic ones” Dec 2023
Crowther, G., **Sankar, U.**, Knight, L., Myers, D. Jenkins, L., Knight, T *J Microbiol. & Bio. Educ.* <https://doi.org/10.1128/jmbe.00153-23>
 - “Building better groups in STEM courses” Buntz, J.G., Drill, E., Johnson, D., Lupek, M., Mehaffy, C., Mehrotra, P., Rowland-Goldsmith, M., **Sankar, U.** 2022 Biology and Mathematics Educators (BIOME) Institute, QUBES Educational Resources doi.10.25334/CBTP-KC26 Dec 2022
 - “Fordham Regional Environmental Sensor for Healthy Air (FRESH Air)” Holler, S., **Sankar, U.**, Ainapudi, V., Britton, S., Lekakis, A. 2022 Climate Change Conference, Loyola University, Chicago. Mar 2022
 - “HITS: Harnessing a collaborative training network to create case studies that integrate high-throughput, complex datasets into curricula.” S.D. Robertson, A. Bixler, M. Eslinger, M.M. Gaudier-Diaz, A. J. Kleinschmidt, K. O’Toole, **U. Sankar** and C. Goller. (2021) *Front. Educ.* 6:711512 doi:10.3389/educ.2021.711512 Aug 2021
 - “Can in class polling predict success in an upper division Human Physiology course?” **Usha Sankar.** John Mortimer Second Timers Award Winner Presentation, HAPS Annual Conference May 2021
 - "Three steps to adapt case studies for synchronous and asynchronous online learning" A. Bixler, M. Eslinger, A. Kleinschmit, M. Gaudier-Diaz, **U. Sankar**, P. Marsteller, C. Goller, and S. Robertson. (2021) *J Microbiol. & Bio. Educ.*, 22(1). doi:10.1128/jmbe.v22i1.2337 Mar 2021
 - “Virtual Rat for Online Undergrad Human Physiology Lab” **Usha Sankar** Workshop presentation, HAPS Virtual Regional Meeting Nov 2020
 - “A Reflection.” **Sankar, U.** *Narrative Medicine*, 8 (1), 19. Oct 2020
<https://revistas.javerianacali.edu.co/index.php/medicinanarrativa/article/view/2441>
 - “What is Medicine?” **Sankar, U.** *Narrative Medicine*, 7 (1). 2017
<https://revistas.javerianacali.edu.co/index.php/medicinanarrativa/article/view/1838>
 - “Applications of microarrays with toxicologically relevant genes (tox genes) for the evaluation of chemical toxicants in Sprague Dawley rats *in vivo* and human hepatocytes *in vitro*” L Kier; **U Sankar** et al. *Mutation Res.* **549**:101-113. 2004
doi:10.1016/j.mrfmmm.2003.11.015
 - “Differential modulation of hepatic caspase gene expression by tamoxifen and estradiol in Sprague-Dawley rats”: **U Sankar**, A Li. *Toxicological Sciences.* (72, pp. 96-96) 2003
 - “Gene Expression Biomarkers that Accurately Predict Kidney Tubular Necrosis”: L. D. Kier, T. Nolan, **U. Sankar** and M. Derbel. Society of Toxicology Meeting 2003
 - “Temperature sensitive mutants with lesions in the vaccinia virus F10 kinase undergo arrest at the earliest stage of virion morphogenesis” Traktman P, Caliguri A, Jesty SA, Liu K, **Sankar U.** *J Virol.* 1995 **69** (10):6581-7 1995

Selected Scientific Communication Articles

- Physiology Educator Community of Practice Blog <https://blog.lifescitrc.org/pecop/> Aug 2022
- “Pre-health Students Learn About Colombian Healthcare – and themselves” Apr 2019

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Fordham News

- “When drugs fail” *The Scientist*, Philadelphia, PA *Oct 2005*
- “Model Organism Microarrays: The more the merrier” *Gen Engg News*, NY *Sep 2005*
- “The delicate toxicity balance in drug discovery” *The Scientist*, PA *Aug 2005*
- “Protein-protein interactions in drug discovery” *Genetic Engg News*, NY *Mar 2005*
- “Protein structure initiative hints at the shape of things to come” *Genetic Engg News* *Jan 2005*
- “High demand for target validation technologies” *Genetic Engg News*, NY *Jun 2005*
- “Proteomics in mix of solutions for bioprocess” *Genetic Engg News*, NY *Sep 2004*

Workshop & Conference Presentations
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- “Enabling Student-led Air Quality and Extreme Temperature Monitoring in New York” Equity & Environmental Justice Oral Presentation. Hultquist, C., Squires, J. Tuholske, C., Corpuz, B., **Sankar, U.**, Holler, S., Yetman, G., Adamo, S. AGU-SY023 in NASA’s Earth Observations for Environmental Justice Session *Dec 2023*
 - “Use of Mobile Air Quality Sensors: A Citizen Science Initiative to Measure Personal Exposure to Air Pollution” The International Conference on Social and Environmental Justice, FCLC, NYC *May 2023*
 - “Comparison of Small, Low-cost, Commercially Available Air Quality Sensors” Fordham Data Science Symposium: Doing Good with Data *Apr 2023*
 - Workshop on Grading Reform at the Society for Advancement of Biology Education Research annual meeting 2022 *Jul 2022*
 - Panel Moderator on Environmental Justice at the Fordham CCEL “In Community Summit” 2022, Bronx Zoo *May 2022*
 - Workshop on Remote Teaching Physiology Labs at HAPS Virtual Regional Meeting *Nov 2020*
 - Workshop on Using Polling Technology in the Classroom Faculty Technology Day, Fordham University *May 2019*
 - ‘Identification of Predictive Gene Signatures of Toxicants’ at the Predictive Toxicology workshop in Belgium *Feb 2002*

Journal & Textbook Review

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- Member, HAPS Physiology Learning Outcomes Advisory Board *Nov 2022 – Jan 2023*
 - Reviewer, Adv. in Physiology Educ. J. of the American Physiology Society *Sep 2022– Pres*
 - Reviewer, HAPS Educator J. of the Human Anatomy & Physiology Society *Mar 2020– Pres*
 - Reviewer, Biochemistry Textbook (MacMillan Learning) *Oct 2019– Pres*

Media Appearances

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- Featured in “Fordham and Bronx schools collaborating on air quality project” <https://news.fordham.edu/science/fordham-and-bronx-schools-collaborating-on-air-quality-project/> *Dec 2021*
 - Featured in “Encouraging Critical Thinking in Class” <https://www.polleverywhere.com/case-studies/encouraging-critical-thinking-in-class> *Dec 2020*
 - Invited Panel Speaker, ‘Pedagogy in a Pandemic’ Westchester Biotech Group *Jun 2020*
 - Featured in “Faculty aim to bring innovative technology to the classroom” *May 2019*

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<https://news.fordham.edu/university-news/faculty-aim-to-bring-innovative-technology-to-the-classroom/>

- Featured on “Undergraduate research fairs delve deep” *Apr 2015*
<https://news.fordham.edu/science/lincoln-center-research-fair-delves-deep/>
- “Friends of STEM”: Examiner News Talk. Dr. M. Matteo & Dr. **U. Sankar**. Host: *May 2013*
[theexaminernews.com](http://www.pctv76.org/video/1414/) Topic: Science, Technology, Engineering and Math in our schools. Available at <http://www.pctv76.org/video/1414/>

Patent Applications

- “Kidney Toxicity Predictive Genes”: Patent application. L. Kier, T. Nolan, **U. Sankar**, and G. Farris, Phase 1 Molecular Toxicology Inc.
- “Liver Toxicity Predictive Genes”: Patent application. L. Kier, T. Nolan, **U. Sankar**, and G. Farris, Phase 1 Molecular Toxicology Inc.
- “Liver Inflammation Predictive Genes”: Patent application. T. Nolan, **U. Sankar**, L. Kier and M. Derbel, Phase 1 Molecular Toxicology Inc.

Memberships

- Society for the Advancement of Biology Education Research (SABER)
- Human Anatomy and Physiology Society (HAPS)
- Promoting Active Learning and Mentoring (PALM) Network, American Society of Cell Biology
- National Institute on Scientific Teaching (NIST)
- BIOQUESTEd
- National Association of Biology Teachers (NABT)
- NCSCS/SENCER