Undergraduate Research Highlights

Odekon MC, Hallenbeck G, Koopmann RA, Haynes MP, Phi A, Wolfe P-F. The Effect of Filaments and Tendrils on the HI Content of Galaxies. *The Astrophysical Journal*. 2018; 852: 142–155. doi: 10.3847/1538-4357/aaa1e8 (Skidmore College, Union College, and Cornell University)

We used data from the Arecibo Legacy Fast-ALFA (ALFALFA) survey to test whether the cold gas reservoirs of galaxies are inhibited or enhanced in large-scale filaments. We found that galaxies close to filament spines are gas deficient, even at fixed mass and local density. We also found that small, correlated structures ("tendrils") within voids provide the most gas-rich environments for galaxies. Mary Crone Odekon is professor of physics at Skidmore College, Greg Hallenbeck is assistant professor of computing and information studies at Washington and Jefferson College, Rebecca Koopmann is professor of physics and astronomy at Union College, and Martha Haynes is Goldwin Smith Professor of Astronomy at Cornell University. Pierre-Francois Wolfe worked on the design of this study for his senior thesis, graduated from Skidmore College in 2015, and is currently employed at MIT Lincoln Laboratory. An Phi developed the code as an independent study project during the 2015–2016 academic year and graduated from Skidmore College in May 2018. This research was supported by National Science Foundation grants AST-1211005 and AST-1637339.

D'Souza MJ, Roeske KP, Neff LS. Free Inventory Platform Manages Chemical Risks, Addresses Chemical Accountability, and Measures Cost-Effectiveness. *International Journal of Advances in Science, Engineering and Technology*. 2017; 5:3: 25–29. (Wesley College)

To ensure the accuracy of purchase records, the appropriate use of storage and handling protocols, and for a continually updated chemical inventory system, the freely-available online platform Quartzy was integrated within an interdisciplinary science department at a small Mid-Atlantic liberal-arts college. In two years (August 2015 to August 2017), the Quartzy platform achieved a savings balance of $22,028 on a total billing invoice amount of $52,312. Furthermore, Quartzy brought real-time data visibility and developed a sense of ownership toward the common goal of lowering the college's environmental impact as it relates to its managing of laboratory-generated hazardous wastes. Malcolm J. D'Souza is professor of chemistry and associate dean, and Kristopher P. Roeske is laboratory supervisor and adjunct chemistry professor, at Wesley College. Lily S. Neff is a Cannon Scholar in biological chemistry at Wesley College. She is a third-year student and the founder of the Wesley Science Club. Grant support for this research came from the State of Delaware, NIH-NIGMS-INBRE (P20GM103446), NSF-EPSCoR (grant IIA-1301765), NSF S-STEM (1355554), and the NASA DESGC program (NNX15AI19H).

Feeley A, Horan K, and Schap D. Statutory Modification of the Collateral Source Rule. *Journal of Legal Economics*. 2017; 23: 2: 81–91. (College of the Holy Cross)

Statutory law governing application of the collateral source rule is surveyed for the 50 states, DC, PR, and VI. Statutes are classified into eight major substantive categories and many subcategories in a comprehensive table. A second table presents the amassed information in a jurisdiction-by-jurisdiction fashion. The published research assists forensic economists to formulate appropriate damages. David Schap is professor of economics at College of the Holy Cross. Andrew Feeley (Holy Cross class of 2006) developed the summary framework as a summer research assistant in 2005 and in an Honors research thesis in academic year 2005-2006. Feeley is now director, U.S. Consumer Markets Claims Strategy and Planning at the Liberty Mutual Insurance Co., Boston. Kayla Horan (Holy Cross class of 2018) further developed and updated the summary as a research assistant and coauthor during summer 2016. Horan has accepted employment with Ernst and Young in New York City as part of its Northeast Health Care Advisory team. The May and Stanley Smith Charitable Trust funded summer research in 2005, and the Office of the Dean at Holy Cross provided funding for summer research in 2016.

Hurtado DA, Heinonen GA, Dumet LM, Greenspan SA. Early Career Nurses with Fewer Supportive Peers for Safe Patient Handling Are Likely to Quit. *International Nursing Review*. 2018; 66: 2. doi: 10.1111/inr.12456. (Oregon Health & Science University)

This prospective study observed turnover during one year at a community hospital in Oregon, testing whether nurses who at baseline nominated fewer peers as sources of safe patient handling support would be more likely to quit than nurses with more supporting peers. Six nurses with tenure under 3 years left their positions. Nurses who quit reported half as many coworkers as sources of support relative to nurses who remained employed, and each additional peer nomination reduced the risk of turnover by 15 percent.

David Hurtado is an assistant professor of public health, Lisset Dumet is a research assistant and Sam Greenspan are research assistants at the Oregon Institute of Occupational Health Sciences at the Oregon Health & Science University. Gregory Heinonen participated in this research through a summer internship at the Oregon Institute of Occupational Health Sciences. Heinonen is a third-year student at Oregon State University and is applying to MD/PhD public health programs. This research was supported by the Oregon Institute of Occupational Health Sciences.

Hintz HA, Sortedahl NJ, Meyer SM, Decato DA, Dahl BJ. The Synthesis of Lactone-Bridged 1,3,5-Triphenylbenzene Derivatives as Pi-Expanded Coumarin Triskelions. *Tetrahedron Letters*. 2017; 58: 50: 4703–4708. doi: 10.1016/j.tetlet.2017.11.010. (University of Wisconsin–Eau Claire)

Two triply lactone-bridged 1,3,5-triphenylbenzene derivatives with solubilizing moieties have been synthesized in five and six steps from commercially available starting materials. Compounds containing the 1,3,5-triphenylbenzene core with two atom bridges are relatively unknown. This new class of pi-expanded coumarins contain triskelion architectures and X-ray crystallographic studies of one of the triskelions indicates that the 1,3,5-triphenylbenzene core adopts a near-planar geometry. This is the only known example of a two atom-bridged 1,3,5-triphenylbenzene derivative to adopt a planar structure. Bart Dahl is an associate professor of chemistry at University of Wisconsin–Eau Claire. Heather Hintz is a PhD student in biochemistry at the Ohio State University. Nicholas Sortedahl recently graduated with a PhD in analytical chemistry from Purdue University and is now employed in industry. Samantha Meyer is a third-year chemistry major at UW–Eau Claire. Dan Decato is a chemistry PhD student at the University of Montana. This work was supported by RCCSA, the ACS-PRF, and the UWEC Blugold Differential Tuition.

Kirby AE, Chance-Johnson J, Miller Coyle H. The Effect of the Analytical Threshold on the Loss and Gain of Data for Single Source and Mixed DNA Samples. *International Research Journal of Computer Science*. 2017; 4:8:50–55. doi: 10.26562/IRJCS.2017.AUCS10082. (University of New Haven)

This study reviews the percent loss of data as a computer analytical threshold is applied to a simulated DNA case data set. It assesses the impact on simple single source samples as compared with complex DNA mixtures. Although each case sample is unique, the average amount of data loss and the threshold increases is standard. Most forensic laboratories evaluate and set their own analytical thresholds as internal policy but rarely is the error rate or data loss made public or published in laboratory validation studies. Heather Miller Coyle is an associate professor in the Forensic Science Department at the University of New Haven. Aidan Kirby is an undergraduate student at the University of New Haven who undertook this study as an independent study project with the intent to gain professional experience and publish. Jennifer Chance-Johnson performed her research as a requirement for an independent research course and has graduated.

Hunter NH, Bakula BC, Bruce CD. Molecular Dynamics Simulations of Apo and Holo Forms of Fatty Acid Binding Protein 5 and Cellular Retinoic Acid Binding Protein II Reveal Highly Mobile Protein, Retinoic Acid Ligand, and Water. *Journal of Biomolecular Structure and Dynamics*. 2018; 36:7: 1893–1907. doi: 10.1080/07391102.2017.1337591. (John Carroll University)

This study reveals the importance of specific structural and dynamic behaviors of two proteins implicated in cancer cell growth. The motion of a naturally-occurring molecule within each protein shows possible modes of binding. In addition, the role of specific water molecules and amino acids in the protein structure and ligand binding is determined. Together, these results provide insight for targeted drug design. Chrystal Bruce is an associate professor of chemistry at John Carroll University. Nate Hunter is a first-year graduate student in chemistry at the Ohio State University. Blair Bakula is a fourth-year undergraduate chemistry major pursuing a career in medicine. This work was supported by NSF grant 1662030 to the Molecular Education and Research Consortium in Undergraduate Computational Chemistry (MERCURY). Hunter and Smith were supported by Colleran-Weaver Summer Research Fellowships.

Cirillo N, The Students of HON 124. Tell Us the Truth: A Collaborative Project. *Schools*. 2017; 14:2:246–265. (University of Illinois at Chicago)

"Tell Us the Truth" is a collaboration by a professor of English and her first-year students in "Readings in Atlantic Slavery," a core humanities course from fall 2016. The essay follows the growing interest of the students as they read against the presidential campaign taking place during that period. The students were given the option of writing a final paper on the topic of why they should have been given evidence-based, unpoliticized history during high school. They all chose this option. The professor provides a narrative and cites passages from the papers submitted in support of their reasonable plea for learning what they came to call "real history"—history that is factual and unsanitized. Nancy Cirillo is professor emerita of English

at University of Illinois at Chicago. The students of HON 124 are now second-year students who collaborated with Cirillo on this article in the context of their Honors College first-year seminar at the University of Illinois at Chicago.

Lemus D, Farruggia SP, Germo G, Chang E. The Plans, Goals, and Concerns of Pre-Emancipated Youth in Foster Care. *Children and Youth Services Review*. 2017; 28: 48–55. doi: 10.1016/j.childyouth.2017.05.003. (University of Illinois at Chicago)

This study focuses on the plans, goals, and concerns of foster care youth prior to leaving care. Participants were 179 pre-emancipated youth between the ages of 17 and 20 (M = 17.82, SD = 0.79) from a large metropolitan area in Southern California. Self-articulated, immediate plans were grouped into 4 major categories and self-articulated life goals were grouped into 10 categories while also examining the prioritization of, estimated time frame for, and youth's sense of control over their life goals. This study contributes to the limited literature on the life goals and plans for foster youth; these results reinforce the need for greater support in planning and goal setting prior to emancipation. Susan Farruggia is assistant vice provost of undergraduate affairs and affiliated faculty in psychology at University of Illinois at Chicago. Gary Germo is assistant professor in the Department of Human Services at California State University–Fullerton. Esther Chang is professor of psychology at Soka University of America. Daisy Lemus performed this research as a fourth-year student and is now a graduate student in the School of Social Work at UIC.

Rollins L, Gibbons JA, Cloude EB. Affective Change Greater for Unpleasant than Pleasant Events in Autobiographical Memory of Children and Adults: A Retrospective Study. *Cognitive Development*. 2018; 47: 46–52. doi: 10.1016/j.cogdev.2018.03.002. (Christopher Newport University)

Research on autobiographical memory in adults shows affect associated with unpleasant events fades faster than affect associated with pleasant events, a phenomenon referred to as the fading affect bias (FAB; Walker et al. 2003). To investigate developmental differences in the intensity of emotion associated with autobiographical memories, 8- to 12-year-old children and adults retrospectively recalled and provided initial and current affect ratings for pleasant and unpleasant events experienced over the past year. Further, participants with low dispositional affect reported low affective fading of unpleasant events. Because the FAB is argued to support coping and positive perceptions of the self and the future, it is advantageous that this effect is observed by middle childhood. Leslie Rollins is assistant professor, and Jeffrey Gibbons is associate professor, in the Department of Psychology at Christopher Newport University. Elisabeth Cloude is a 2016 graduate of Christopher Newport University and is a student in the Applied Cognition and Human Factors doctoral program at North Carolina State University. The research for the project developed from Christopher Newport University's Summer Scholars program in 2015.

Scheerer D, Chi H, McElheny D, Samer A, Keiderling T, Hauser K. Role of Aromatic Cross-Links in Structure and Dynamics of Model Three-Stranded β-Sheet Peptides. *Journal of Physical Chemistry*. 2018; 22: 2: 543–553. doi: 10.1021/acs.jpca.7b10190. (University of Illinois at Chicago)

A series of closely related peptide sequences that form triple-strand structures was designed with a variation of cross-strand aromatic interactions and spectroscopically studied as models for β-sheet formation and stabilities. Our study of several triple-strand and related hairpin model peptides, designed to have different interactions between the strands, surprisingly showed that the absence of a direct aromatic cross-strand contact did not lead to a significant loss of thermal stability. David Sheerer and Karen Hauser are in the Department of Chemistry at the University of Konstanz. Heng Chi is on the faculty of Jiangsu Food and Pharmaceutical Science College. Timothy Keiderling is professor emeritus of chemistry, Dan McElheny is director of NMR facilities, and Ayesha Samer is an undergraduate chemistry major at the University of Illinois at Chicago. The research was supported by the Deutsche Forschungsgemeinschaft, the Center of Applied Photonics Konstanz, the National Science Foundation of China, and the Alexander von Humboldt Foundation.

Fleming C, Davis SN. Masculinity and Virgin-Shaming among College Men. *Journal of Men's Studies*. 2018: 1. doi: 10.1177/1060826518758974. (George Mason University)

This project explores "virgin-shaming," a phenomenon whereby an individual is called out or made fun of for lacking sexual experience among college men. To investigate this phenomenon, interviews were conducted with 10 men enrolled at one university. Analysis revealed three key findings. First, having sex is often held as a marker of status or achievement of hegemonic masculinity. Second, virgin-shaming is found in social spaces more concerned with upholding masculine norms. Third, virgin-shaming can be used both as an invocation to reassert one's masculinity and, relatedly, a taunt to encourage others to start having sex. Results highlight how virgin-shaming not only creates stratification within some groups of men but also perpetuates male dominance within society more broadly. Shannon N. Davis is professor of sociology at George

Mason University (Mason). Colby Fleming conducted this independent research in 2015 as part of a fourth-year honors program within the sociology major at Mason. He graduated with a BA in sociology and philosophy, served as a Fulbright English teaching assistant, and is currently employed at a research corporation. The research was supported by the Office of Student Scholarship, Creative Activities, and Research at George Mason University and through funding awarded to Fleming from the Undergraduate Research Scholar Program.

Danek AH, Williams J, Wiley J. Closing the Gap: Connecting Sudden Representational Change to the Subjective Aha! Experience in Insightful Problem Solving. *Psychological Research*. 2018; 1: 1–9. doi: 10.1007/s00426-018-0977-8. (University of Illinois at Chicago)

Two hallmarks of insightful problem solving are thought to be suddenness in the emergence of solution due to changes in problem representation, and the subjective Aha! experience. In this study, participants made importance-to-solution ratings throughout their solution attempts as a way to assess representational change. The results show a connection between sudden changes in problem representations (leading to correct solutions) and the subjective appraisal of solutions as an Aha! experience. This offers the first empirical support for a close relationship between two theoretical constructs that have traditionally been assumed to be related to insightful problem solving. Amory Danek is a faculty member in the Experimental and Theoretical Psychology department at the University of Heidelberg. Jennifer Wiley is professor of psychology at the University of Illinois at Chicago (UIC). Joshua Williams contributed to this project through UIC's Summer Research Opportunities Program and Psychology 396: Directed Research. He is now a PhD student in philosophy at UIC. The research was supported by a grant to Amory Danek from the DFG (German Research Foundation) and a summer research fellowship from the UIC SROP to Williams.

O'Neil CS, Beach JL, Gruber TD. Thiazole Orange as an Everyday Replacement for Ethidium Bromide and Costly DNA Dyes for Electrophoresis. *Electrophoresis*. 2018; 10. doi: 10.1002/elps.201700489 (Christopher Newport University)

DNA gel electrophoresis is a standard tool of biochemistry and molecular biology laboratories. The common dye ethidium bromide suffers from toxicity concerns and requires the use of damaging ultraviolet light. SYBR Safe, a commercial product, is marketed as a safe alternative to ethidium bromide and has excellent sensitivity with nondamaging blue light but suffers from prohibitively high costs. We show that thiazole orange, the parent compound of SYBR Safe, is an excellent, simple, and inexpensive alternative to these dyes. It is excitable with safe blue light or UV light, with DNA detection limits in agarose gels similar to ethidium bromide and SYBR Safe. Thiazole orange safely allows the use of nondamaging blue light at the same cost as ethidium bromide. Todd Gruber is assistant professor of chemistry at Christopher Newport University. Casey S. O'Neil graduated in 2018 as a biochemistry major and will pursue a PhD in the chemistry and biochemistry program at the University of Maryland. Jacie L. Beach is a fourth-year biochemistry student at Christopher Newport University and plans to pursue premed studies.

Woodard J, Huntsman A, Patel P, Chai H, Kanagasabai R, Karmahapatra S, Young A, Ren Y, Cole M, Herrera D, Yalowich J, Kinghorn AD, Burdette JE, Fuchs JR. Synthesis and Antiproliferative Activity of Derivatives of the phyllanthusmin Class of arylnaphthalene lignan lactones. *Bioorganic & Medicinal Chemistry*. 2018; 26:9: 2354–2364. doi: 10.1016/j.bmc.2018.03.033 (University of Illinois at Chicago)

A series of arylnaphthalene lignan lactones based on the structure of the phyllanthusmins, a class of potent natural products possessing diphyllin as the aglycone, has been synthesized and screened for activity against multiple cancer cell lines. SAR exploration was performed on both the carbohydrate and lactone moieties of this structural class. These studies have revealed the importance of functionalization of the carbohydrate hydroxy groups with both acetylated and methylated analogues showing increased potency relative to those with unsubstituted sugar moieties. In addition, the requirement for the presence and position of the C-ring lactone has been demonstrated through reduction and selective re-oxidation of the lactone ring. Joanna E. Burdette is professor of medicinal chemistry and pharmacognosy in the College of Pharmacy at University of Illinois at Chicago. Denisse Herrera graduated and has entered pharmacy school. The research was supported by UIC's Chancellor's Undergraduate Research Award, NIH grant, predoctoral fellowships from the NIH/OSU Chemistry-Biology Interface Training Program, American Foundation for Pharmaceutical Education, and an OSU University Fellowship.

Liang Z, Bu W, Schweighofer KJ, Walwark Jr. DJ, Harvey JS, Hanlon GR, Amoanu D, Erol C, Benjamin I, Schlossman ML. Nanoscale View of Assisted Ion Transport across the Liquid–Liquid Interface. *Proceedings of the National Academy of Sciences*. 2018; 201701389. doi: 10.1073/pnas.1701389115 (University of Illinois at Chicago)

During solvent extraction, amphiphilic extractants assist the transport of metal ions across the liquid–liquid interface between an aqueous ionic solution and an organic solvent. Investigations of the role of the interface in ion

transport challenge our ability to probe fast molecular processes at liquid–liquid interfaces on nanometer-length scales. Recent development of a thermal switch for solvent extraction has addressed this challenge, which has led to the characterization by X-ray surface scattering of interfacial intermediate states in the extraction process. Here, we review and extend these earlier results. Our results suggest a connection between the observed interfacial structures and the extraction mechanism, which ultimately affects the extraction selectivity and kinetics. Mark Schlossman is professor of physics. David Walwark Jr. undertook this research with a Chancellor's Undergraduate Research Award at UIC and is now a graduate student at the University of New Mexico in nanoscience and microsystems engineering. Jeff Harvey is a graduate student in physics at the University of California, Davis. Glenn Hanlon is currently a software engineer at Boeing. This research was supported by the DOE, NSF, UIC Department of Physics, UIC Contest, and a UIC Chancellor's Undergraduate Research Award.

Andes A, Mabrouk PA. Authorship in Undergraduate Research Partnerships: A Really Bad Tango between Undergraduate Protégés and Graduate Student Mentors While Waiting for Professor Godot. In *Credit Where Credit Is Due: Respecting Authorship and Intellectual Property*, ed. Patricia Ann Mabrouk and Judith N. Currano. ACS Symposium Series, 2018; vol. 1291, 133–158, doi: 10.1021/bk-2018-1291.ch013. (Northeastern University)

In spite of the importance of authorship in STEM research and the emphasis being placed on the early immersion of undergraduates in authentic research experiences, little is known about undergraduate students' experience with authorship. In this case study, we probed the experiences of three graduate student mentor-undergraduate student protégé dyads working in the same laboratory to learn about their knowledge and experiences with authorship. We were surprised at the diversity of opinions expressed by the graduate student mentors and their undergraduate protégés—none of whom agreed on the definition of authorship, its requirements, and responsibilities. Even though they recognized their lack of knowledge, the graduate and undergraduate students expressed reluctance to discuss their questions about authorship with their mentor or faculty adviser. These findings suggest additional research is needed into authorship in undergraduate research experiences. Patricia Mabrouk is professor of chemistry and chemical biology at Northeastern University. Amy Andes conducted this research during the 2017–2018 academic year to fulfill the capstone requirements for her bachelor's degree in chemistry. Andes is currently a graduate student at The Ohio State University where she is studying sensory food analysis. This project was supported by a grant to Mabrouk from the Office of the Provost.

Lorah P, Ready A, Rinn E. Using Drones to Generate New Data for Conservation Insights. *International Journal of Geospatial and Environmental Research*. 2018; 5:2: 2. (University of Saint Thomas)

Human impact on the environment is driving a decline in biodiversity that heightens the need for informed management of conservation lands. Unmanned aerial vehicles (UAVs), also known as drones, are an increasingly cost-effective tool for generating high-quality data used to map landscape features, analyze land cover change, and assess the effectiveness of conservation efforts. Traditional sources of remotely sensed data such as satellites and aircraft can be costly, inflexible and unable to detect fine-scale surface variation. This paper explores the advantages (and challenges) of analyzing data collected by drones to generate useful conservation management insights. We focus on three key considerations. The first is pre-flight planning. This includes FAA regulations, flight control software and study area considerations. The second is acquiring and processing drone captured still images to generate georeferenced map layers. The third is developing GIS models that analyze relationships between drone-derived data layers at multiple scales. To demonstrate how data collected by UAVs can provide useful conservation insights, we analyze the relationship between fire behavior and landscape features at the Weaver Dunes Preserve in Minnesota. Here, the Nature Conservancy is restoring high quality prairie habitat via a series of prescribed burns. Because prairies benefit from "patchy" burns (as opposed to fires that consume the entire burn site), we map landscape features (slope, elevation and aspect) and analyze their correlation with the location and extent of postburn patches of ash. Paul Lorah is assistant professor and chair of the Department of Geography and Environmental Studies. Alice Ready and Emma Rinn are fourth-year students in geography and environmental studies, slated to graduate in spring 2019. They conducted the research for this study from summer 2017 through fall 2017. The research was supported by the Undergraduate Research Opportunities Program and a Sustainability Scholars Grant at the University of Saint Thomas.

Saltzman B, Yung J. A Machine Learning Approach to Identifying Different Types of Uncertainty. *Economics Letters*. 2018; 171: 58-62; doi: 10.1016/j.econlet.2018.07.003 (Bates College)

We implement natural language processing techniques to extract uncertainty measures from Federal Reserve Beige Books between 1970 and 2018. Business and economic related uncertainty is associated with future weakness in output, higher unemployment, and elevated term premia. On the other hand, political and government uncertainty, while high during recent times, has no statistically significant impact on the economy. Julieta Yung is assistant

professor in the Economics Department at Bates College. Bennett Saltzman worked on this research as part of a class project in his fourth year; he is now employed at Amenity Analytics. The research was funded by Blanchard Fund for Economics.

Nolis GM, Adil A, Yoo HD, Hu L, Bayliss RD, Lapidus SH, Berkland L, et al. Electrochemical Reduction of a Spinel-Type Manganese Oxide Cathode in Aqueous Electrolytes with Ca2+ or Zn2+. *Journal of Physical Chemistry C*. 2018; 122: 8: 4182–4188. doi: 10.1021/acs.jpcc.7b12084. (University of Illinois at Chicago)

In this report, the feasibility of reversible Ca2+ or Zn2+ intercalation into a crystalline cubic spinel Mn2O4 cathode has been investigated using electrochemical methods in an aqueous electrolyte. This report aims to identify bottlenecks in the application of manganese oxide cathodes paired with Ca or Zn metal anodes and to justify future efforts in designing prototype multivalent batteries. Jodi Cabana is associate professor of chemistry. Addullah Adil worked on this research as a third- and fourth-year student as the recipient of a UIC Chancellor's Undergraduate Research Award and Liberal Arts and Sciences Undergraduate Research Initiative funding and is now employed as a research intern at the NIH. Lisa Berkland worked on this project as an undergraduate from 2014 to 2016 and after graduating *summa cum laude* is now employed at Argonne National Laboratory. Her work on the project was supported by a Paaren Summer research fellowship of the UIC Department of Chemistry. The research was supported by the DOE, Office of Science, Basic Energy Sciences, the Department of Chemistry, the Office of Undergraduate Research, and the College of Liberal Arts and Sciences.

Yamarua A, Valdez-Jasso D, Abbasi T, Shioura KM, Sahni S, Reddy V, Sridhar A, et al. Nicotinamide Phosphoribosyltransferase Promotes Pulmonary Vascular Remodeling and Is a Therapeutic Target for Pulmonary Arterial Hypertension. *Circulation*. 2017; 135: 16: 1532–1546. doi: doi: 10.1161/CIRCULATIONAHA.116.024557. (University of Illinois at Chicago)

Pulmonary arterial hypertension is a severe and progressive disease, a hallmark of which is pulmonary vascular remodeling. Nicotinamide phosphoribosyltransferase (NAMPT) is a cytozyme that regulates intracellular nicotinamide adenine dinucleotide levels and cellular redox state, regulates histone deacetylases, promotes cell proliferation, and inhibits apoptosis. We hypothesized that NAMPT promotes pulmonary vascular remodeling and that inhibition of NAMPT could attenuate pulmonary hypertension. Our data provide evidence that NAMPT plays a role in pulmonary vascular remodeling and that its inhibition could be a potential therapeutic target for pulmonary arterial hypertension. Jiwang Chen is associate research professor and director of the cardiovascular research physiology core in the College of Medicine. Basai Young graduated in 2017 with a degree in biology and is now a student at the UIC College of Dentistry.