

Tojan B. Rahhal

EDUCATION

- Doctor of Philosophy in **Pharmaceutical Sciences** May 2016
University Of North Carolina at Chapel Hill (UNC-CH)
Eshelman School of Pharmacy, Division of Pharmacoengineering and Molecular Pharmaceutics
National Science Foundation Graduate Research Fellowship Program Scholar
- Master of Law in **Dispute Resolution** Dec. 2020
University of Missouri, School of Law, Hybrid Program
- Bachelor of Science in **Biomedical Engineering**, concentration in **Biomaterials** May 2012
North Carolina State University (NCSU), Raleigh, NC
Minors: Tissue Engineering and Biotechnology

WORK EXPERIENCE

- CEO & President, Engineering World Health** Aug. 2019- Present
Non-Profit, Durham, NC

- Guided the strategic evaluation and planning for adapting to COVID19 hinderance of programming
- Developed a new tactical plan with measurable metrics and reporting focusing on Engineering Education, Global Outreach for improved healthcare access and Intercultural Competence
- Launched and secured corporate sponsorship for a unique STEM outreach program for underserved schools in three states, impacting over 700 students to date
- Secured a \$150,000 grant to support cross-cultural engineering virtual programs
- Selected as “Top 10 to Watch” CEO of Non-Profits by United way of the Greater Triangle in Sept 2021
- Secured \$50,000 in grant funding for a unique Kits for the Classroom program (STEM outreach)
- Solidified virtual programming offerings on an international scale serving over 500 students a year

- Founder, Alliance Professional Development, LLC.** 2016-Present
www.Alliance-Professional.com

- Provided customized workshops on leadership development, inclusivity training, and cultural awareness 3-5 times a month
- Conducted strategic consulting sessions for clients
- Worked with Higher Education, Corporations (HR, Business Development) and individuals
 - Clients include: Southern College of Optometry, Women’s Network of MO, Shelter Insurance, Veterans United, Stephen’s College, North Carolina State University, Trulaske College of Business MBA program, South Dakota State University and national conferences

- Assistant Dean for Inclusive Excellence and Strategic Initiatives** Sept. 2018- July 2019
College of Engineering, University of Missouri

- Guided the strategic evaluation and planning for a culture of inclusion in the College
- Collaborated on the development of the college’s strategic initiatives including college culture, student and faculty recruitment and retention, and educating engineering leaders
- Worked closely with college leaders, faculty, staff and students to support and guide metrics-driven diversity initiatives and awareness
- Actively worked with the Associate Deans and Faculty to recruit and retain a diverse faculty while maintaining an inclusive culture resulting in 30% of new hires being URM or women

- Executed the college's vision to build and sustain a diverse and inclusive environment by developing, implementing, and continually assessing strategies and programs to enhance the college's environment.
- Worked with Advancement team to secure alumni donations, with the largest being a \$1.4M donation to the office of diversity and outreach initiatives
- Fostered and nurtured a learning and working environment that advances inclusive excellence amongst our engineering community and campus
- Spearheaded recruitment efforts to increase undergraduate and graduate student diversity resulting in the highest percentage in 5 years of URM and women student recruits, with continued upward trends
- Managed over 300k in funds for Inclusive Excellence with regular assessment and impact reports
- Developed impact analysis and reports for all events and programs led by the Office of Diversity and Outreach Initiatives
- Assisted the Dean in developing and implementing the ASEE Diversity pledge and proposal for the college, awarded Bronze ASEE Award (highest level)
- Oversaw the hiring of new employees, including development of inclusive job advertisements, search committees, and interviews
- Supervised a team to develop the First Year Engineering Experience for incoming engineers that includes holistic programming, financial support, professional development and mentoring
- Supervised 6 employees
- Continued duties from prior Director roles as listed below

Interim Director, Pre-Engineering Programs
College of Engineering, University of Missouri

June 2018- Aug. 2018

- Developed programming for a summer transition program for pre-engineering students
- Hired and supervised two Graduate assistants and a coordinator to support this program
- Worked to create the pilot program for a first-year engineering summer experience
- Aimed to increase recruitment and retention of first year engineering students
- Developed evaluation assessments, follow-ups, and annual reports for the program

Director, Diversity and Outreach Initiatives
College of Engineering, University of Missouri

March 2017- Aug. 2018

- Developed cultural competency training for Faculty, Staff, and Students (15+ events/semester)
- Represented the college at various campus and national events to report on D&I efforts in the college
- Collaborated with the office of the Chief Diversity Officer to develop an inclusive excellence proposal with measurable metrics for the College of Engineering
- Secured over 300K in funds from the UM System Inclusive Excellence Funds for the College of Engineering to support Diverse, Inclusive and Equitable practices.
- Managed a 150K annual budget for all programming, investments, and initiatives
- Utilized cultural competency assessments to establish baseline information and measurable metrics for improvement
- Developed evaluation and impact reports for all programming and outreach efforts conducted each year
- Oversaw advisory boards for faculty and staff, undergraduates, and graduate students respectively
- Provided a diversity and inclusion perspective for various marketing and communication projects
- Created a recruitment and retention plan for underrepresented minorities and women in engineering by developing strategic goals with the office of undergraduate and graduate student recruitment
- Worked with the Associate Dean for Research to develop on-boarding orientations for new employees and strategic retention initiatives for current and new members

- Spearheaded the first Diverse Engineering Professional Conference for 100+ attendees and numerous company sponsors with student organizations
- Grew the DEP conference to 200 attendees, 20k budget, and numerous company sponsors during the second year
- Organized the first Pursuit of Excellence banquet in collaboration with the center for academic success and excellence to celebrate graduating seniors and for first year students to identify as engineers and to foster a sense of belonging, doubled in size and impact for second year
- Developed an award-winning K-5 STEM outreach program at the college of engineering with collaborators across campus for more than 300 participants a year and secured sponsor donations to sustain programming efforts and received multiple accolades
- Co-authored grants with several PIs focusing on STEM retention and recruitment (NSF S-STEM)
- Supervised 2 coordinators and 4 student staff

Educator, Office of Inclusivity, Diversity, and Equity, Univ. of Missouri Jan. 2017- March 2017

- Organized and arranged for various Spring and Summer programming for faculty and staff focusing on Diversity and Inclusion
- Cultivated relationships across campus to form collaborations and to identify teaching gaps that could be developed (i.e. presented a workshop on a lacking topic to faculty and staff)
- Managed registrations and logistical operations to ensure a seamless training for faculty and staff

ADDITIONAL LEADERSHIP EXPERIENCE (external to job roles)

Chair, NAMEPA Strategic Directions Committee, 2018-Present

- Develop strategic goals and priorities for NAMEPA and tools for developing and matriculating engineers and scientists from underrepresented populations, including utilizing data-centric approaches
- Manage board members' projects and tasks to collaboratively accomplish strategic priorities
- Represent NAMEPA at conferences and roundtable meetings with other college Deans and leadership teams
- Work to further develop best practices for multicultural engineering programs
- Establish webinars and modules to adapt to the shift in learning during the COVID-19 pandemic

Advisory Member, Student Athletes for Fostering Equality (S.A.F.E), 2018-2019

- Served as a mentor and adviser for student athletes in S.A.F.E where they focus on building community on campus and in the local community

Founder, Cross-Cultural Leadership Development Workshop Curriculum, UNC-CH 2015-2017

- Created a curriculum to address the integration of understanding diversity as a vital leadership skill
- Led the incorporation of curriculum into the School of Pharmacy for graduate students
- Established a student executive committee and advising committee to aid efforts
- Independently secured funding via a grant for the pilot year of the program
- Secured funding via the Eshelman Institute for Innovation to expand this programming (2017)

Chair, Women in Science (WinS), UNC-CH 2012-2016

- **Chair** (2015-2016), **Co-Chair** (2014-2015), **Executive Committee** (2012-2014)
- Coordinated and organized the participation of over 100 graduate and professional students for the second annual WinS symposium, including a poster competition and networking session

- Organized the participation of the UNC Chancellor to speak on women in science to 300+ faculty, students, and staff at the WinS symposium
- Facilitated a minimum of 4 events a year including professional development, networking, and work-life balance panels

HONORS & AWARDS

2021 Top 10 to Watch CEO of Non-profits, United Way of the Greater Triangle, Sept, 2021
 2021 Leader in Diversity via Alliance Professional Development, Triangle Business Journal, Aug. 2021
 2020 University of Missouri Study Abroad Teaching Excellence Award, May 2020
 Inclusive Excellence and Engagement, Diverse Engineering Professional Conference Team Special Recognition, UM Extension and Engagement Division, Sept. 2019
 American Society for Engineering Education Diversity Education Program Recognition Bronze, Aug. 2019
 National Society of Black Engineers (NSBE) Mentoring Award, March 2019
 Missourian Progress for Education Award, December 2018
 Insight into Diversity 2018 Inspiring programs in STEM Award, August 2018
 MU Staff Advisory Council Education Award, Fall 2018
 WISE Women of May, Women in Science and Entrepreneurship, May 2018
 Student Nominated Outstanding Staff Award, Engineering Student Council, Univ. of Missouri, May 2018
 Women of Color History Makers in Diversity Award, NAMEPA, April 2018
 Mystical 7, Mizzou Secret Honor Society, Honorary Faculty Inductee, April 2018
 Hidden Gem, Columbia-Missouri Entrepreneurs Panel, Worley St. Roundtable, April 2018
 Third Place, Diversity Abroad Innovation Competition, Miami, FL, April 2018
 Outstanding Staff Award, College of Engineering, Univ. of Missouri, March 2018
 Shirley Chisholm Outspoken Advocate Award, Univ. of Missouri, November 2017
 The Frank Porter Graham Honor Society, UNC-CH, April 2016
 Sigma XI, The Scientific Research Society, April 2016
 The Order of the Golden Fleece, The oldest and highest honorary society at UNC-CH, March 2016
 Kathrynne A. Brewington Award for the most Outstanding Graduate Student, 2015-2016
 Leadership Development Scholar Grant, The Graduate School, November 2015
 Translational Medicine Travel and Book Award, 2013-2014
 National Science Foundation Graduate Research Fellowship, 2013-2016

CERTIFICATIONS

Mediation for Civil Cases, 23 MCLE credit and 2 hours of Ethics, January 2019
 Principals of Clinical Pharmacology Certification, National Institutes of Health Clinical Center, June 2018
 Green Dot Community Training Certification, Missouri Dept. of Health, May 2018
 Intercultural Development Inventory Qualified Administrator, April 2017
 Supervisory Training Certification, Missouri Training Institute, October 2017
 Diversity 101 Course Completion, University of Missouri, May 2017
 NCCJ Building Inclusive Classroom & Community Workshop, Center for Health Policy, Feb. 2017
 HHMI Translational Medicine Certificate, UNC School of Medicine, May 2016
 Orientation for Clinical Research Personnel, Dec. 2015
 Essential Skills for Success in Industry Seminar Series, TIBBS, Aug. 2014

DIVERSITY & INCLUSION PROJECTS/PUBLICATIONS

Rahhal, T.B., Ayllon M.E. Understanding the Impact of a Diversity and Inclusion Oriented Short-Term Study Abroad Program in Undergraduate Engineering Students. ASEE Collaborative Network for Engineering and Computing Diversity 2020 Conference.

Rahhal, T.B., Devlin, S.L., Lobo, E.G.. Global Innovation: Creating a Conference to Promote Diversity in Science and Technology, Engineering, and Math. *Technology & Innovation: Journal of the National Academy of Inventors*. June 2019. <https://doi.org/10.21300/21.2.2020.123>

Morton, T, **Rahhal, T.B.**, Schul, J.. Black and Brown in STEM. In Progress.

Rahhal, T.B., Ayllon M.E..Finding your EDGEs: Engineering, Diversity, Global Experiences, and Service. Diversity Abroad Conference Competition. Third Place. April 2018. Oral.

Rahhal, T.B., Ayllon M.E. The Latino/a student Engineering Experience at the University of Missouri, Cambio de Colores: Change of Colors Conference. June 2017. Oral.

DIVERSITY AND INCLUSION PRESENTATIONS (sample)

- SUNY Upstate Medical School Program Participants, November 2021
- Implicit Bias Workshop Speaker, Southern College of Optometry, Sept 2021, October 2021
- Imposter syndrome Workshop Speaker, Central Bank of Boone County Mentor Program October 2021
- Panelist, Women in Science and Engineering, Missouri Cures, November 2018
- Women's Network Monthly Lunch Keynote Speaker, Columbia Chamber of Commerce, Sept. 2018
- Cross-Cultural Leadership, University of South Dakota School of Pharmacy, September 2018
- Shelter Insurance: Multicultural Resource Group, Emerging Professionals Network, Women Advocacy Group, Fall 2018
- University of Missouri Student Ambassadors, Retreat Training, August 2018
- Imposter Syndrome, Graduate Students, AACP Webinar, April 2018
- Journey towards Inclusive Excellence Workshop, April 2018
- Unraveling the Mystery of LinkedIn, The Hatchery- Coworking Space, April 2018
- Implicit Bias in the Corporate World Webinar, execMBA, Trulaske College of Business, March 2018 & November 2018
- Women Entrepreneurs and Imposter Syndrome, Boonslick Women's Network, October 2017.
- Diversity and the Tech Culture, College of Engineering, University of Missouri- Columbia, November 2017.
- The A-Z of Networking Workshop, Annual Biomedical Research Conference for Minority Scientists, November 2017.
- Overcoming Imposter Syndrome, Veteran's United Home Loans, October 2017.
- Overcoming Imposter Syndrome, Missouri Women's Business Center, Fulton, MO, October 2017.
- Bias and Imposter Syndrome Workshop, Missouri Women's Business Center, Columbia, MO, September 2017.
- Faculty Department Diversity and Inclusivity Retreat, August 2017.
- Team Building and Leadership Development, Columbia Junior Leaders Academy, Chamber of Commerce, August 2017.
- Utilizing Cross-Cultural Leadership Training for Pharmaceutical Sciences, American Association of Colleges of Pharmacy Annual Meeting, July 2017.
- Understanding the Leader in You, Leadercast Conference, May 2017.
- Team Building and Leadership Development, The BOLD Academy, Columbia College, July 2017.

- Keynote Speaker, Stand Up Stand Out: The Power of Confidence, Missouri S & T University, October 2017.
- Developing Authentic Leadership, Missouri Women's Business Center, Columbia, MO, March 2017.
- Inclusion Illusion Conference, Trulaske College of Business, University of Missouri- Columbia, March 2017.
- MGT 3700 Diversity in Management Course Guest Lecturer, Trulaske College of Business, University of Missouri- Columbia, March 2017.
- The A to Z of Networking, Stephen's College, Columbia, MO, February 2017.

RESEARCH EXPERIENCE

Adjunct Assistant Professor, Biomedical, Bioengineering, and Chemical Engineering Dept.

University of Missouri at Columbia

Oct. 2017- Present

- Advised graduate and undergraduate students on their research path as a Graduate Faculty
- Investigated the use of hydroxyapatite for bone repair amongst several biomaterial related projects
- Designed and taught a course focusing on the intersection of diversity, inclusion, social justice, and global engineering (Find your EDGEs) for three semesters
- Authored and Co-authored publications and grant applications
- Collaborated on research study focusing on the experiences of black and brown students in STEM with the college of education; Applied for and secured funding to support the inclusion of engineering students.
- Grants involved in:
 - NSF S-STEM: Synergistic Strategies in the Gateway 8: Increasing Retention and Success of Students from low-income backgrounds in Civil Engineering, Co-PI, National Science Foundation, \$959,547, awarded Dec. 2019
 - Regional ITS Data Sharing Initiative, Leadership Team, Funded by St. Charles County
 - Building a Convergent Research Community for Smart City Center Procurement, Co-Pi, UM System Research and Creative Works Strategic Investment Program
 - Black and Brown in STEM, University of Missouri Inclusion, Diversity, and Equity Inclusive Excellence Faculty Grant
 - Inclusive Excellence Grant, \$355k, UM System

Graduate Assistant, University of North Carolina at Chapel Hill

Sep. 2012- June 2016

Project: Engineering PRINT® Particles for Pulmonary Delivery of Therapeutics

Adviser: Joseph M. DeSimone, PhD, Chancellor's Eminent Professor of Chemistry

Department of Molecular Pharmaceutics, Eshelman School of Pharmacy

NSF Graduate Research Fellow

- Investigated pulmonary treatment of respiratory diseases utilizing particle technology
- Authored and Co-authored 5 publications
- Established productive collaborations resulting in multiple publications
- Competitively acquired fellowship for 3 years based on research grant
- Managed a multidisciplinary team as well as worked independently
- Communicated complex information to a variety of audiences (presented at 10+ venues)
- Learned new techniques within first month and initiated a training checklist for future lab members
- Balanced research and outreach efforts simultaneously

PATENTS

Desimone MJ, Perry J, Kapadia C, Tian S, **Rahhal TB**, Luft JC. (2018 Dec.) Toll-like Receptor Agonist Modified Particles and their use in Lung Cancer. (PCT/IB2018.053314 - US 62/504,831). Patent. Raleigh, NC

Rahhal TB, Wilson AK, Barnette WC, Lasater KE, Westbrook AE, Wiggin BM. (2012 May) Ankle-foot Orthotic devices with Integrated Vibrotactile Feedback. (US 20130296741 A1). Patent. Raleigh, NC.

RESEARCH PUBLICATIONS

Baker J, Rahhal TB. Engineering World Health's Design Competition: Fostering Career Exploration and Global Perspective. IEEE Potentials. March 2021.

Rahhal TB, Fromen CA, Wilson E, Kai MP, Shen TW, Luft JC, DeSimone JM. Pulmonary Delivery of Butyrylcholinesterase as a Model Protein to the Lung. *Molecular Pharmaceutics*. March 2016.

Fromen CA, **Rahhal TB**, Shen TW, Robbins GR, Kai MP, Luft JC, Ting JP, DeSimone JM. Nanoparticle Surface Charge Impacts Distribution, Uptake and Lymph Node Trafficking by Pulmonary Antigen-Presenting Cells. *Nanomedicine: Nanotechnology, Biology, and Medicine*. Dec. 2015. Cover Feature.

Robbins GR, Fromen CA, **Rahhal TB**, Luft JC, Wang AZ, Pecot CV, DeSimone JM. Non-Intravenous Routes of Delivery: Aerosol Therapy for Cancer Management. *Cancer Nanotechnology Plan*. Nov. 2015.

Shen TW, Fromen CA, Kai MP, Luft JC, **Rahhal TB**, Robbins GR, DeSimone JM. Distribution and Cellular Uptake of PEGylated Polymeric Particles in the Lung Towards Cell-Specific Targeted Delivery. *Pharmaceutical Research*. April 2015.

Gharpure KM, Chu KS, Bowerman CJ, Miyake T, Pradeep S, Mangala SL, Han HD, Rupaimoole R, Armaiz-Pena GN, **Rahhal TB**, Wu SY, Luft JC, Napier ME, Lopez-Berestein G, DeSimone JM, Sood AK. Metronomic Docetaxel in PRINT Nanoparticles and EZH2 Silencing Have Synergistic Antitumor Effect in Ovarian Cancer. *Molecular Cancer Therapeutics*. 2014 Jul;13(7):1750-7. Cover Feature.

RESEARCH PRESENTATIONS (sample)

Engineering PRINT® Particle for Pulmonary Delivery of Therapeutics

- **Rahhal, T.B.** 9th International Conference and Exhibition on Tissue Science and Regenerative Medicine, Keynote Speaker. Las Vegas, NV. April 2018. Oral.
- **Rahhal, T.B.** Eshelman School of Pharmacy Graduate Program Retreat, Research, and Awards Day. Chapel Hill, NC. April 2016. Brewington Awardee Presentation Oral.

Pulmonary Delivery of Butyrylcholinesterase for Treatment of Organophosphate Poisoning.

- **Rahhal, T.B.**, Fromen, C.A., Wilson, E.M., Kai, M.P., Shen, T.W., Luft, C.J., DeSimone, J.M. American Association of Pharmaceutical Sciences Annual Meeting. Orlando, FL. Oct. 2015. Poster.
- **Rahhal, T.B.**, Fromen, C.A., Wilson, E.M., Kai, M.P., Shen, T.W., Luft, C.J., DeSimone, J.M. Chapel Hill Pharmaceutical Sciences Conference. Chapel Hill, NC. Oct. 2015. Poster.

PRINT® PLGA Nanoparticle Ex-vivo Degradation Characterization.

- **Rahhal, T.B.**, Chu, K., DeSimone, J.M. BBSP Fall Symposium. Chapel Hill, NC. Dec 2012. Poster.

Ankle-foot Orthotic devices with Integrated Vibrotactile Feedback.

- **Rahhal, T.B.**, Wilson A.K., Barnette W.C., Lasater K.E., Westbrook A.E., Wiggin B.M., Dimeo A. Annual Biomedical Engineering Symposium. Raleigh, NC. May 2012. Oral and Poster.

MEDIA COVERAGE (sample)

“Top 10 CEO’s to Watch Award”

<https://www.ewh.org/blog-posts/united-way-of-the-greater-triangle-names-ewh-ceo-tojan-rahhal-one-of-10-to-watch-nonprofit-leaders/>

“Rahhal Recipient of 2020 MU Study Abroad Teaching Excellence Award”

<https://engineering.missouri.edu/2020/05/rahhal-recipient-of-2020-mu-study-abroad-teaching-excellence-award/>

“ASEE recognizes Mizzou Engineering for commitment to diversity, inclusion”

<https://engineering.missouri.edu/2019/08/asee-recognizes-mizzou-engineering-for-commitment-to-diversity-inclusion/>

“MU’s STEM Cubs Program lands award from prestigious magazine”

<https://engineering.missouri.edu/2018/08/mus-stem-cubs-program-lands-award-from-prestigious-magazine/>

“Tojan Rahhal, an educator bringing STEM to young students”

https://www.columbiamissourian.com/special_section/progress/tojan-rahhal-an-educator-bringing-stem-to-young-students/article_d69eb1ce-e8f5-11e8-84f5-ef5ac8a4e340.html

“Find your EDGEs finds a third-place prize.”

<https://engineering.missouri.edu/2018/05/find-your-edges-finds-a-third-place-prize/>

“Daughter Engineering Day Showcases STEM to Young Women.”

<https://engineering.missouri.edu/2018/04/daughter-engineering-day-showcases-stem-to-young-women/>

“MU College of Engineering promotes inclusivity in new center.”

https://www.columbiamissourian.com/news/higher_education/mu-college-of-engineering-promotes-inclusivity-in-new-center/article_156255a4-a3cf-11e7-a120-074b3930f309.html

“MU hosts first conference on diversity in engineering Saturday.”

https://www.columbiamissourian.com/news/higher_education/mu-hosts-first-conference-on-diversity-in-engineering-saturday/article_599843d2-ab8b-11e7-a62d-637377e65f58.html

“Does the Glass Ceiling Exist?” by Tojan Rahhal

<http://columbiabusinesstimes.com/2017/05/04/glass-ceiling-exist-hint-yes/>