

MISSION

To empower as many people as possible to understand themselves and their medicine at the molecular scale. To de-stigmatize natural medicines; to increase awareness of the molecular consequences of race, neurodiversity, sexuality, gender identity, trauma, socioeconomic status, and intersectionality for mental health.

EDUCATION

PhD - Pharmaceutical Sciences, Northeastern University (2018, GPA 3.92)

Research Focus: Structural Biochemistry of Endocannabinoid System Targets for Drug Discovery

BS - Biochemistry and Molecular Biology, University of California, Davis (2012, GPA 3.67)

Research Focus: Eicosanoid Pharmacology for Drug Development

PROFESSIONAL EXPERIENCE

Part-time Farm Hand (2023 - Present) - Maitland Mountain Farm

Natural Products Public Educator & Advocate (2021-Present) - Personal

Co-founder and Chief Scientific Officer (2019-2022) - Real Isolates LLC

Director of Education (2018) - Cannabis Center of Excellence (formerly C3RN)

Co-Founder and Executive Director (2016-2019) - The MUSE Foundation

Co-Founder and Co-President (2015-2018) - GradQ (LGBTQ+ graduate student organization)

President (2017-2018) - American Association of Pharmaceutical Sciences NEU Chapter

Graduate Teaching/Research Assistant (2012-2018) - Northeastern University, Makriyannis Lab

Undergraduate Research Assistant (2010-2012) - University of California, Davis, Hammock Lab

Advanced Sciences Tutor (2010-2012) - Superb Tutors

MEDIA COVERAGE

1. [MJBrand Insights](#): "8 sharp women advancing cannabis science."
2. [Forbes](#): "Meet The Two Radical Scientists Using TikTok to Make Cannabis Education Accessible."
3. [PBS Terra](#): "Will Cannabis Become America's Next Craft Beer?"
4. [Sensi MA](#): "Fresh Greens - Meet Massachusetts' fast-rising young cannabis industry influencers."
5. [PBS News Hour](#): "Why can't Olympians smoke weed?"

PEER-REVIEWED SCIENTIFIC PUBLICATIONS, PATENTS, & OTHER SELECTED WORKS

1. (*submitted under review*) Kirk RD, Uhley OM, Lehfeldt P, **Miyabe Shields C**, Garretson M, Collins A, Wahbeh H, and Dahmer S (2023) Willingness to Participate in Entheogen Use Research in Naturalistic Settings. *Journal of Psychedelic Studies*.
2. **Miyabe Shields C** and Westerkamp A. (2022) "Cannabis & Neuropathy." Virtual webinar presentation for The Hereditary Neuropathy Foundation's THRIVE Summit.
3. Siebert A, Fadipe B, Kann R, and **Miyabe Shields C**. (2022) "Diversity & Inclusion within Psychedelics" Panel Presentation for Global Cannabis Intelligence Leadership Summit.
4. **Miyabe Shields C** and Kirk RD. (2022) "Chapter 6: Pharmaceutical Applications of Hemp *Cannabis sativa*." *Revolutionizing the Potential of Hemp and its Products in Changing the Global Economy*. Springer
5. Canals PC, Aguilar AG, Carter GT, **Miyabe Shields C**, Westerkamp A, D'Elia M, Aldrich J, Moore RN, Moore AT, and Piper BJ. (2022) "Patient Reported Outcomes of Medical Cannabis for Managing Pain in Charcot-Marie-Tooth Disease." *Medrxiv*.

C. Miyabe Shields, PhD (they/them) [What's this?](#)

6. Sulak D, Bearman D, **Miyabe Shields C**, Russo E, Knox R, Knox J, Knox D, and Knox J. (2021) "Cannabis Grand Rounds Conference." Virtual Presentation for Continuing Medical Education for Medical Professionals by ACHEM.
7. Malamas MS, Lamani M, Farah SI, Mohammad K, **Miyabe C**, Weerts CM, Speziale M, Hilston S, Zvonok N, Chandrashekhar H, Ploss M, Straiker A, and Makriyannis A. (2021) "Design and synthesis of highly potent dual ABHD6/MGL inhibitors." *Bioorganic & Medicinal Chemistry*.
8. **Miyabe Shields C** and Westerkamp A. (2021) US PATENT PCT/US2021/012778 "Methods for Obtaining Compounds from a Plant or Fungus Material, Respective Compositions, and Uses Thereof." Filled 2021, granted 2022.
9. **Miyabe Shields C**, and Westerkamp A. (2021) "Transformation of Phytocannabinoids by Heat: Isomerization, dehydration, and derivatization of cannabinoids present in cannabis sativa smoke." Poster presentation at: International Cannabinoid Research Society 2021.
10. Justice A, Roggen M, **Miyabe Shields C**. (2021) "The Hemp Isomer: Δ 8THC - Three scientists break down Δ 8THC and what you need to know about this increasingly popular cannabinoid." Written article at: Cannabis Business Times.
11. **Miyabe Shields C**. (2021) "Microdosing and macrodosing hemp cannabis extract as an antidepressant, anxiolytic, and atypical antipsychotic: putative molecular mechanism as derived by first-person experience" Oral Presentation at: American Chemical Society 2021.
12. Malamas MS, Farah SI, Lamani M, Pelekoudas DN, Perry NT, Rajarshi G, **Miyabe C**, Chandrashekhar H, West J, Pavlopoulos S, and Makriyannis A. (2020). "Design and synthesis of cyanamides as potent and selective N-acyl ethanolamine acid amidase inhibitors." *Bioorganic & Medicinal Chemistry*.
13. Alapafuja SO., Malamas MS, Shukla V, Zvonok A, Miller S, Daily L, Rajarshi G, **Miyabe C**, Chandrashekhar H, Wood J, Tyukhtenko S, Straiker A, and Makriyannis A. (2019). Synthesis and evaluation of potent and selective MGL inhibitors as a glaucoma treatment. *Bioorganic & Medicinal Chemistry*.
14. **Miyabe Shields C**, Zvonok N, and Makriyannis A. (2019). "Expression, Purification, and Proteomic Characterization of Human α/β Hydrolase Domain 6." *Scientific Reports*.
15. Arora N, **Miyabe Shields C**, Williams K, White C, Ritter N, MacCaffrieR, White S, and McNabb M. (2018) "Open dataset for adult use of Cannabis: tool development and real-time trend-monitoring." Poster Presentation at: Chemistry and Pharmacology of Drugs of Abuse.
16. Van Kralingen T, **Miyabe C**, Zvonok A, Zvonok N, and Makriyannis, A. (2017). "Development of Selective Fluorogenic Substrates for Endocannabinoid Enzymes - α/β -Hydrolase Domain 6 (ABHD6) and Monoacylglycerol Lipase (MGL)" Poster Presentation at: Research, Innovation, and Scholarship Expo.
17. **Miyabe C**. (2017). "Mary Jane In Your Brain." Written article at: NU Sci.
18. Golden E, **Miyabe C**, Wood J, Malamas M, Alapafuja S, Makriyannis A. (2017). "Optimization of a medium-throughput cathepsin K inhibition assay for NAAA inhibitors." Poster Presentation at: American Society for Biochemistry and Molecular Biology.
19. **Miyabe C**, Zvonok N, Zvonok A, Makriyannis A. (2016). "Proteomic Characterization of Recombinant α/β Hydrolase Domain Containing 6 (ABHD6)" Poster Presentation at: International Cannabinoid Research Society.
20. Ulu A, Lee KS, **Miyabe C**, Yang J, Hammock GB, Dong H, Hammock BD. (2014). "An omega-3 epoxide of docosahexaenoic acid lowers blood pressure in angiotensin-II-dependent hypertension." *Journal of Cardiovascular Pharmacology*.
21. Ulu A, **Miyabe C**, Lee K, Harris T, Morisseau C, et al. (2013). "Anti-inflammatory and anti-hypertensive effects of omega-3 polyunsaturated fatty acids and soluble epoxide hydrolase inhibitors in angiotensin-II dependent hypertension." Poster session presented at: Drug Discovery and Therapy World Congress.

C. Miyabe Shields, PhD (they/them) [What's this?](#)

22. Ulu A, Harris TR, Morisseau C, **Miyabe C**, Inoue H, Schuster G, Dong H, Iosif AM, Liu JY, Weiss RH, Chiamvimonvat N, Imig JD, Hammock BD. (2013). "Anti-inflammatory effects of omega-3 polyunsaturated fatty acids and soluble epoxide hydrolase inhibitors in angiotensin-II-dependent hypertension." *Journal of Cardiovascular Pharmacology*.
23. Silva M, **Miyabe C**, Makriyannis A, Pavlopoulos S. (2012). "Modulation of Arrestin Function: Searching for a Lead Compound using NMR Methods." Poster Presentation at: Drug Discovery and Development in the 21st Century Symposium.
24. Ulu A, Appt S, Morisseau C, Hwang SH, Jones PD, Rose TE, Dong H, Lango J, Yang J, Tsai HJ, **Miyabe C**, Fortenbach C, Adams MR, Hammock BD. (2012). "Pharmacokinetics and in vivo potency of soluble epoxide hydrolase inhibitors in cynomolgus monkeys." *British Journal of Pharmacology*.

LABORATORY & TECHNICAL SKILLS

Analytical Chemistry: TLC, flash chromatography, proton NMR

Biochemistry/Biophysics: protein purification, RNA purification, RNA/DNA quantification, qRT-PCR, liquid-liquid extraction, solid-phase extraction, Bradford/BCA assay, DNA purification, restriction enzyme digest, PCR, plasmid cloning, primer design, site-directed mutagenesis, agarose electrophoresis, SDS-PAGE, Western blot, ion-metal affinity chromatography, trypsin digestion, size-exclusion chromatography, HPLC, FPLC, LCMS, MALDI-MS/MS, activity-based proteome profiling (ABPP), enzyme kinetic assay, enzyme inhibition assay, receptor saturation binding assay, nanodisc formation, cellular fractionation

Animal Work: rodent care (mouse, rat), sterile blood draw (mouse, rat), metabolic chamber study (mouse), blood pressure measurement (mouse-tail cuff), surgical implantation (mouse-subcutaneous), osmotic mini-pump formulation, isofluorane sacrifice (mouse), organ harvest (mouse).

Microbiology/Tissue Culture: streak/passage, transformation, transient/stable transfection, expression of recombinant proteins, cryogenic preservation/restoration of strains, mycoplasma detection/elimination, gram stain, negative stain, spore stain, general microscopy

Computational: molecular dynamics, energy minimization, homology model generation, docking, advanced microsoft office mastery, drive/cloud management, mailchimp, general web design (WordPress, Weebly, and basic HTML), linux-based data/server management, basic perl, ChemDraw, Prism, ImageJ

Cannabis/Hemp: Solvent-based extraction (hexane/ethanol), solventless extraction (proprietary), short-path distillation, isolation, purification, fractionation, quantification (cannabinoids), dosing, product formulation, MDAR/CBD/hemp compliance

Production/Communication Skills: grant writing, academic writing, high-level content lectures, lay-audience presentations, extensive teaching experience across all ability levels, graphic design, podcast recording, basic audio engineering

PERSONAL INTERESTS

Music Writing/Performance

Hiking, Backpacking

Foraging, Horticulture (want to learn fishing, hunting, trapping)

Home Renovation (or preservation in our case)

HONORS & AWARDS

Cosmic Sister Special Talent Scholarship (2023), Association for Cannabis Health Equity and Medicine Board of Directors (2021-2022), Cosmic Sister Emerging Voices Award (2021), Bluebird Botanicals Karmic

C. Miyabe Shields, PhD (they/them) [What's this?](#)

Excellence Award (2020), NUCSC Community Builder Award (2018), MIT IMPACT Fellow (2016-2017), International Cannabinoid Research Society Pre-Doctoral Research Award (2016), American Association of Pharmaceutical Sciences Chapter President (2016, 2017), Braude Mem. Travel Award (2016), NUGradQ Co-Founder & President (2016-2018), NIDA Diversity Fellow (2014-2017), Rho Chi Academic Honor Society (2013-2017), Northeastern University Excellence Fellow (2012-2017), UCDavis Research Citation Award (2012), Robert C. Dean Scholar (2011, 2012), Golden Key International Honor Society (2010-2012), Phi Kappa Phi Honor Society (2010-2012), UCDavis Women's Water Polo Scholar Athlete (2010), Arthur Ashe, Jr. Scholar (2010), Alfred J. Hoefer Memorial Scholar (2010), ACWPC All-Academic Honors (2009, 2010), UCDavis College of Bio. Sci. Dean's List (2008, 2009), USA Water Polo Academic All-American (2008), USA Women's Water Polo Youth National Team (2008)