

James T. Lyles

Bent Creek Germplasm Repository, The North Carolina Arboretum
100 Fredrick Law Olmstead Way, Asheville, NC 28806
(828) 665-2492 x264 • james.lyles@ncarboretum.org

Education:

Doctorate of Philosophy in Biology, Plant Science Subprogram, 2002 - 2011

The Graduate Center, City University of New York, New York, NY

Dissertation: "Antimalarial Benzophenones and Xanthenes from *Garcinia* Species" Advisor: Edward J. Kennelly

Master of Philosophy in Biology, Plant Science Subprogram, 2006

The Graduate Center, City University of New York, New York, NY

Bachelor of Science Degree in Chemistry, Biochemistry Track, 2001

Rhodes College, Memphis, TN

Research and Professional Experience:

Doctoral Candidate in Biology, 2002 – 2011, Biology Program, The Graduate Center, New York, NY

Perform bioactivity guided fractionation on several *Garcinia spp.* to isolate, identify, and quantify compounds responsible for antimalarial activity

- Concentrate and identify antimalarial compounds using several chromatographic techniques; including solvent-solvent partitioning, thin-layer chromatography, open-column chromatography, and semi-preparative HPLC
- Develop HPLC-PDA, LC/MS ion trap, and LC/MS time of flight methods for identification of compounds in complex matrices
- Develop HPLC-PDA methodology for quantitative analysis of *Garcinia xanthochymus* seed constituents
- Perform detailed structural analysis via 1D and 2D NMR experiments
- Develop *in vitro* antioxidant and antimalarial assays for evaluation of plant extracts and pure compounds
- Primary instrument technician for enterprise class Waters Empower data network, associated PCs, analytical HPLC-PDA systems, semi-preparative HPLC, Thermo-Finnigan LC/MS ion trap, and Waters LC/MS time of flight

NMR Technician, 2005 – 2011, Biological Sciences and Chemistry Departments, Lehman College, Bronx, NY

Manage Lehman College NMR facility and train all new NMR users

- Maintain a Bruker Avance 300 NMR; including performing cryogen fills, probe repairs, shim maps, and routine diagnostic experiments
- Implement new NMR experiments for users as necessary; including phosphorous and silicon experiments
- Train all personnel on 1D and 2D NMR experiments

Layout Editor, 2006 – 2009, The American Society of Pharmacognosy Newsletter

Created and debuted new online, interactive *Newsletter* format and assisted in the development of new in-depth columns

- Create all layouts and graphical art used in the *Newsletter*
- Develop story ideas and special features with other *Newsletter* editors and contributors
- Maintain all software and hardware necessary for production and archives

College Laboratory Technician, 2006, Chemistry Department, Lehman College, Bronx, NY

Assisted in development of campus-wide chemical hygiene plan and brought department into compliance with plan for pending EPA audit

- Overhauled laboratory classes and existing facilities for EPA audit
- Redesigned courses to minimize hazardous waste generation
- Disposed of over 8400 pounds of hazardous waste
- Developed new centralized chemical storage scheme based on EPA guidelines
- Created online MSDS database to decrease response time to hazardous incidents

Computer Technician, 2003 - 2005, Biological Sciences Department Lehman College, Bronx, NY

Supervised completion and trained personnel on state-of-the-art video conferencing and data analysis computer facility

- Coordinated completion of instructional and graduate student computer facilities
- Trained personnel on Safari services including remote desktop, video-on-demand, and video conferencing
- Maintained all software and hardware in undergraduate instruction, as well as graduate research facility

Intern, 1999 and 2001, Gateway Additive, Spartanburg, SC

Applied testing methods for evaluating the effectiveness of custom formulated metal working fluids to provide customer specific lubricants for metal drawing applications

- Performed ASTM testing procedures for lubricant evaluations of wear, stability, and fouling resistance
- Evaluated production line products for quality control
- Created a customer database to simplify sample tracking and requests

Undergraduate Researcher, 2000, NSF Research Experience for Undergraduates Program, Memphis, TN

Investigated the effects of free radical decay on the UV-Vis-NIR spectra of irradiated ultra-high molecular weight polyethylene

- Utilized UV-Vis-NIR spectroscopy to study decay of polyethylene plates used in joint arthroplasty due to sterilization

Undergraduate Researcher, 1999, University of Memphis, Memphis, TN

Evaluated assays in order to develop a fast, sensitive, and robust assay for the detection of TFPI and other downstream indicators

- Standardized a micro-titer plate methodology for TFPI detection using flow cytometry

Teaching Experience:

Adjunct Lecturer, 2002 - 2007, Biology Department, Lehman College, Bronx, NY

- Biology 644/400: Biochemistry laboratory, 2 semesters
- Biology 183: Human Biology laboratory, 2 semesters
- Biology 184: Plants and People lecture and laboratory
- Biology 166 and 167: Introduction to Organismic Biology part 1 and part 2 lecture and laboratory, 2 semesters

Professional Training:

Waters LC/MS-TOF and MassLynx Software Training, by Waters Corporation, August 2008

Modern NMR Methods for Organic Structure Elucidation by E. P. Mazzola, PhD and W. F. Reynolds, PhD, July 2007

Single Lab Validation Workshop sponsored by ODS, NIH, and ASP, August 2006

Bruker Avance 1 Liquids Course, Bruker Biospin, June 2006

NMR Interpretation Course by E. P. Mazzola, PhD, June 2005

Publications:

Research Papers:

Uchenna J. Uchachukwu, Selena Ahmed, Adam Kavalier, **James T. Lyles**, Edward J. Kennelly. White and Green Teas (*Camellia sinensis* var. *sinensis*): Variation in Phenolic, Methylxanthine, and Antioxidant Profiles. *Journal of Food Science*. 2010, 75, 541.

Bei Jiang, **James T. Lyles**, Kurt A. Reynertson, Fredi Kronenburg, and Edward J. Kennelly. Stability Evaluation of Selected Polyphenols and Triterpene Glycosides in Black Cohosh. *Journal of Agriculture and Food Chemistry* 2008, 56, 9510.

Poster Presentations:

James T. Lyles, Hui Yang, Kan He, Margaret J. Basile, and Edward J. Kennelly. Characterization of *Garcinia xanthochymus* Seeds. The American Society of Pharmacognosy Annual Meeting, Wakiki, HI, 2009.

James T. Lyles, Hui Yang, Bei Jiang, Kan He, and Edward J. Kennelly. Chemical Constituent Analysis of *Garcinia xanthochymus* (Clusiaceae) Seeds. The 7th Annual Oxford International Conference on the Science of Botanicals, Oxford, MS, 2008.

Bei Jiang, **James T. Lyles**, Kurt A. Reynertson, Fredi Kronenburg, and Edward J. Kennelly. Stability Evaluation of Selected Polyphenolics from Black Cohosh. The American Society of Pharmacognosy Annual Meeting, Portland, ME, 2007.

Honors and Awards:

The Graduate Center, City University of New York, New York, NY
Sue Rosenberg Zalk Student Travel Award, 2006 - 2009
Tuition Fellowship, 2003 - 2007
Science Fellowship, 2002 - 2004
University Fellowship, 2002 - 2008
Rhodes College, Memphis, TN
University Scholarship, 1997 - 2001
Robert Allen Scholarship for Scientific Achievement, 1997

Institutional Service:

The Graduate Center, City University of New York, New York, NY
Doctoral Students Council Media Board, 2004 - 2007
Doctoral Students Council, 2003 - 2007
Graduate Council, 2004 - 2006
Biology Department Executive Committee, 2003 - 2006
Ethnobiology Club Co-chair 2003 - 2006
Plant Science Advisory Board, 2003 - 2005

Professional Societies:

American Chemical Society
The American Society of Pharmacognosy
Connecticut-Westchester Mycological Association
New York Academy of Sciences
Society for Economic Botany
Sigma Xi, The Scientific Research Society