Christy Haynes is the Elmore H. Northey Professor of Chemistry and a Distinguished McKnight University Professor at the University of Minnesota where she leads the Haynes Research Group, a lab dedicated to applying analytical and nanomaterials chemistry in the context of biomedicine, ecology, and toxicology. Professor Haynes completed her undergraduate work at Macalester College in 1998 and earned a Ph.D. in chemistry at Northwestern University in 2003 under the direction of Richard P. Van Duyne. Before joining the faculty at the University of Minnesota in 2005, Haynes performed postdoctoral research in the laboratory of R. Mark Wightman at the University of North Carolina, Chapel Hill. Among many honors, she has been recognized as an Alfred P. Sloan Fellow, a Searle Scholar, a Dreyfus Teacher-Scholar, and a National Institutes of Health "New Innovator." In addition to wide recognition for her research contributions, including over 175 peer-review publications, she has been recognized by her university as an Outstanding Postdoctoral Mentor and the Sara Evans Faculty Woman Scholar/Leader Award. Professor Haynes is currently the Associate Head of the University of Minnesota Department of Chemistry, the Associate Director of the National Science Foundation-funded Center for Sustainable Nanotechnology, and an Associate Editor for the journal Analytical Chemistry.

Optimized carbon dots: green imaging agents at the nano-bio interface

Polymerized nanoscale carbon dots hold great potential for a variety of applications based on their excellent optical properties and ease of synthesis from benign precursors; however, the mechanism behind the high quantum yield luminescence is still under debate. Via systematic choice of carbon dot precursors and careful separation methods, a size series of carbon dots show tunable luminescence as well as capacity to enable super-resolution imaging in live cells. Nuclear magnetic resonance and complimentary characterization methods coupled with computational models reveal the potential molecular underpinnings of the carbon dot optical properties, presenting the possibility for enhanced design of new carbon dots nanostructures.