Approved by the Regents
May 14, 2009

PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Arts, Sciences, and Letters
Department of Natural Sciences

Sheila Rose Smith, assistant professor of chemistry, Department of Natural Sciences, College of Arts, Sciences, and Letters, is recommended for promotion to associate professor of chemistry, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters.

Academic Degrees:

Ph.D. 1997	University of North Carolina, Chapel Hill, NC
B.S. 1992	North Carolina State University, Raleigh, NC

Professional Record:

2001 - Present	Assistant Professor of Chemistry, Department of Natural Sciences, University of Michigan-Dearborn
1999 - 2001	Lecturer in Chemistry, Lansing Community College, Lansing, MI
1997 - 2001	Postdoctoral Research Associate, Department of Chemistry, Michigan State University, East Lansing, MI

Summary of Evaluation:

Teaching: Professor Smith's teaching is rated excellent. Her primary teaching responsibility has been introductory level General Chemistry II, two required upper-level inorganic chemistry lecture classes and Advanced Inorganic Synthesis and Characterization Laboratory. She has also developed a special topics course in bioinorganic chemistry. Her teaching style of challenging, coaxing and where necessary, pushing the students helps them to learn the subject. Professor Smith is a leader in the department in the application of technology to improve teaching and learning, and has designed and launched her own course web pages using C-tools, and made use of podcasting to distribute her lectures. She uses self designed, in-class-exercises in order to engage the students actively in the learning process. Working with other colleagues in the department, she has added four experiments to the general chemistry repertoire in an effort to give students a more engaging and realistic laboratory experience. She has involved many undergraduate students in her research and several of them are co-authors on research publications and presentations.

Research: Professor Smith's research is rated significantly capable. She is a bio-inorganic chemist and her research has focused on three very distinct but related areas: electrocatalysis of small molecule substrates by siderophores; copper binding to Riboflavin Binding Protein (RBP); and the characterization of copper containing proteins by pulsed electron paramagnetic resonance (EPR) spectroscopy. She has active collaborations within the department as well as with colleagues at other universities in southeast Michigan. Her collaborative research on copper binding to RBP focuses on determining the amount of copper bound to the protein in vivo, the binding affinity of the protein-copper complex, the identification of ligands and their geometry in the active site, and the identification of the role of redox switching of copper in the function of the protein. [Professor Smith's research has been supported by collaborative grants from Office

of the Vice President for Research, Rackham, and UM-Dearborn campus grants.] She has supervised twenty three undergraduates in research, many of whom have been included on presentations at national meetings and as co-authors on peer-reviewed publications.

Recent and Significant Publications:

S. R. Smith, K. Z. Bencze, K. Wasiukanis, T. L. Stemmler and M. Benore-Parsons, "Association of Copper to Riboflavin Binding Protein; Characterization by EPR and XAS." *The Open Inorganic Chemistry Journal*, 2, 22-24, 2008.

S. R. Smith, K. Z. Bencze, K. A. Russ, K. Wasiukanis, M. Benore-Parsons, T. L. Stemmler, "Investigation of the Copper Binding Site and the Role of Histidine as a Ligand in Riboflavin Binding Protein." *Inorganic Chemistry*, 47, 6867–6872, 2008.

S. R. Smith, "The Primary Literature as Text: An Undergraduate Level Topics Course in Bioinorganic Chemistry for Chemistry, Biology and Biochemistry Majors." *The Chemical Educator*, 11 (1), 9-12, 2006.

S. R. Smith, I. Pala and M. Benore-Parsons, "Riboflavin Binding Protein Contains a Type II Copper Binding Site." *Journal of Inorganic Biochemistry*, 100, 1730-1733, 2006.

(undergraduate student co-authors are underlined)

Service: Professor Smith's service is rated excellent. For the last seven years she has served as a faculty advisor to chemistry majors, American Chemical Society (ACS) track, and as a faculty advisor to Pi Rho, an ACS Student Affiliate. Within the department, she has served on a faculty search committee, as faculty secretary, on the department Colloquium Committee, and the Science Building renovation committee. She was also elected to serve as Member At-Large Representative to the Natural Sciences Department Executive Committee. She has participated in Campus Open Houses, Admitted Student Receptions, and special Admissions Day programming. Professionally she has served as technical reviewer for manuscripts submitted for *Inorganic Chemistry.*

External Reviewers:

Reviewer A: "The recent IC work clearly provides excellent evidence of a four coordinate O_3N type II copper site in the riboflavin binding protein upon dialysis against a buffer containing copper (II) chloride. The paper establishes this using an array of techniques including EPR, ESEEM, ENDOR, and XAS."

Reviewer B: "I noticed with considerable interest Dr. Smith's very good report in the 'Journal of Inorganic Biochemistry' (now a very solid journal in the last 5-10 years) and now I see from her dossier that she has a very excellent full paper 'in press' in 'Inorganic Chemistry'. This is (will be) a first rate publication, and manifests Dr. Smith's ambitiousness to strike out and establish a visible research program."

Reviewer C: "The recent publication in *Inorganic Chemistry* is the most comprehensive. The paper in *Chemical Educator* would likely be of use to others in the field who are trying to develop a course in bioinorganic chemistry."

Reviewer D: "Dr. Smith's discovery of a Cu-binding site in riboflavin binding protein is surprising and the implications are provocative. It is not uncommon to dismiss weak Cu (II) signals in protein preparations from biological sources as being due to some nonspecific contamination. However, Dr. Smith followed an instinct and delved further, and her initial publication in the *Journal of Inorganic Biochemistry* is convincing that this site can be fully populated and in a controllable manner."

Reviewer E: "This is a good article that reports spectroscopic characterization of a copper binding site in an important protein, the riboflavin binding protein. It is well written and reports good quality data that are reasonably interpreted. The results … are solid."

Reviewer F: "The second paper, in press in *Inorganic Chemistry*, is absolutely first rate (I was the handling editor for this submission and can attest that her reviews for the paper were very good)."

Summary of Recommendation:

Professor Smith has been rated excellent in teaching and service, and significantly capable in research. She is an excellent teacher and a solid researcher with good promise for continued publication in her specialty areas. Her service to the chemistry discipline and to the department is highly valued. We are very pleased to recommend, with strong support of the Executive Committee of the College of Arts, Sciences, and Letters, Sheila Rose Smith be promoted to associate professor of chemistry, with tenure, in the Department of Natural Sciences, College of Arts, Sciences, and Letters.

Kathryn Anderson-Levitt
Dean
College of Arts, Sciences, and Letters

Daniel Little
Chancellor
University of Michigan-Dearborn

May 2009