

RESEARCH SUPPORT – total research funding received **\$10.1 M**, *not including shared major instrumentation grants*

Completed

08/01/01-12/31/05	\$210,000	University of Missouri – St. Louis, Department of Chemistry & Biochemistry and office of the Dean, College of Arts & Sciences, new faculty Start-up Funds
01/01/02-08/31/02	\$14,000	The Foundation BLANCEFLOR Boncompagni-Ludovisi, née Bildt. Support for Dr. Cristina De Meo's Research
2002	\$1,000	Internal support to present a lecture at the XXI st International Carbohydrate Symposium (Cairns, Australia, July 7-12, 2002); UMSL Small grants fund
09/01/02-12/31/03	\$35,000	New methods for the stereoselective cis-glycosylation; UM Research Board; requested \$48,933
01/03/03-12/31/03	\$12,500	MALDI TOF spectrometry, a modern tool for analysis of biologically important conjugates; UMSL Research Award
09/01/02-07/31/03	\$20,000	The Foundation BLANCEFLOR Boncompagni-Ludovisi, née Bildt. Support for Dr. Cristina De Meo's Research
2003	\$1,000	Internal support to present a lecture at the XII th European Carbohydrate Symposium (Grenoble, France, July 6-11, 2003); UMSL Small grants fund
2004	\$1,000	Internal support to present a lecture at the XXII nd International Carbohydrate Symposium (Glasgow, UK, July 23-27, 2004); UMSL Small grants fund
01/01/04-06/30/04	\$8,612	Synthetic α -(1 \rightarrow 3)-glucans to study biological and structural properties of <i>Cryptococcus neoformans</i> ; Washington University at St. Louis
06/01/05-08/30/07	\$35,000	Development of the thiazolyl methodology for convergent synthesis of complex glycostructures; The Petroleum Research Fund, (Award 42397-G1)
06/01/05-08/31/05	\$12,420	Synthesis of the <i>Streptococcus pneumoniae</i> oligosaccharide for immunological studies; UMSL Research Award
2005	\$1,000	Internal support to purchase a start-up kit for the Varian high performance liquid chromatographer (HPLC) donated by Steris Corporation to the PI in March 2005; UMSL Small grants fund
2006	\$750	Internal support to attend and present a paper at the 23 rd International Carbohydrate Symposium (Whistler, BC Canada, July 23-28, 2006); UMSL Small grants fund; requested \$1,000
01/01/06-12/31/07	\$143,000	Synthesis and evaluation of novel lipid-A derivatives; American Heart Association (Award AHA0660054Z)
01/01/06-06/30/11	\$552,000	CAREER: Stereocontrolled synthesis of 1,2-cis glycosides; National Science Foundation, requested \$574,228 (Award CHE-0547566)
05/01/06-10/30/08	\$226,500	New methods and strategies for oligosaccharide synthesis; National Institutes of Health; NIGMS AREA, requested \$215,574 (Award R15GM077170)
05/01/06-10/30/08	\$399,382	STICS: Surface-Tethered Iterative Carbohydrate Synthesis;

		National Institutes of Health; NIGMS, requested \$399,772 (R21GM072693), Co-PI, PI Keith Stine (UM – St. Louis)
07/01/08-06/30/10	\$143,000	Synthesis and evaluation of novel CD-14 targeting glycotherapeutics; American Heart Association (Award 0855743G)
03/01/09-08/28/11	\$226,500	New strategies for expeditious oligosaccharide synthesis; National Institutes of Health; NIGMS (Award 2R15GM077170-02)
05/15/09-04/30/11	\$148,868	Synthetic saccharides to study immunological properties of <i>Streptococcus pneumoniae</i> serogroup 6; National Institutes of Health; NIAID, requested \$151,000 (Award 1R03AI067494-01A2)
01/01/10-12/31/10		MRI-R2 Acquisition of a 600 MHz NMR Spectrometer; National Science Foundation, awarded \$614,500 (Award CHE-0959360), Co-PI, PI Christopher D. Spilling (UM – St. Louis)
01/01/11-12/31/11	\$9,000	New methods and strategies for the synthesis of complex carbohydrates. College of Arts and Sciences, UM – St. Louis
04/15/11-04/14/12		Fluorescence spectrophotometer in NIR range for biological and medical applications; National Institutes of Health, awarded \$292,000 (Award 1S10RR031621-01), Co-PI, PI Mikhail Y. Berezin (Washington University at St. Louis)
08/01/12-01/31/14	\$80,857	Preparation of model compounds of <i>S. aureus</i> capsular polysaccharide to enhance understanding of activation by CDT and conjugation to CRM; Pfizer Inc. (Award 8500124946/1400)
08/15/11-08/14/14	\$295,206	New strategies for expeditious oligosaccharide synthesis; National Institutes of Health; NIGMS AREA, requested \$435,339 (Award 2R15GM077170-03)
09/30/09-08/31/14	\$1,082,000	Development and Application of Surface-Tethered Iterative Carbohydrate Synthesis; National Institutes of Health; NIGMS (Award 1R01GM090254-01), Co-PI, PI Keith J. Stine (UM – St. Louis)
09/01/13-08/31/14	\$39,900	Development and testing of an endotoxin antagonist compound; UM System, Intellectual Property Fast Track Funding Program, Co-PI, PI Michael R. Nichols (UM – St. Louis)
09/15/13-08/31/14		MRI: Acquisition of a Circular Dichroism Spectrometer; National Science Foundation; requested/awarded \$100,000, one of nine co-PIs, PI Michael R. Nichols (UM – St. Louis)
04/01/13-03/31/15	\$63,138	Exploring non-traditional approaches to stereocontrolled glycosylation; Mizutani Foundation for Glycoscience, requested \$87,996 (Award 130057)
08/15/11-07/31/15	\$404,310	Chemical Glycosylation: Reactions and Mechanism; National Science Foundation (Award CHE-1058112)
02/01/14-10/06/15	\$89,468	Preparation of model compounds of <i>S. aureus</i> capsular polysaccharide to enhance understanding of activation by CDT and conjugation to CRM; Pfizer Inc. (Award 8500124946/1400)
10/15/15-9/31/16	\$50,162	Design, Synthesis, and Evaluation of 2-DFG; Cary Pharmaceuticals (Award 0047022)
10/07/15-04/21/17	\$99,733	Model compounds of Staph aureus capsular polysaccharides to study carbonylditriazole (CDT) activation chemistry and side

		reactions; Pfizer Inc. (Award 8500124946 / 1400)
09/01/16-08/31/17	\$75,102	Research Supplement to Accelerate the Synthesis of Building Blocks: Refinement and implementation of the automated oligosaccharide synthesizer; National Institutes of Health (Award 3U01GM120673-01S1)
06/01/16-04/30/18	\$183,791	Research Supplement to Promote Diversity in Health-Related Research Program for Dr. Crystal O'Neil, requested \$207,976 (Award 3R01GM111835-02S1)
09/01/17-08/31/18	\$170,338	Research Supplement "Purchase of a Mass Spectrometer to supplement the HPLC-based automation platform for oligosaccharide synthesis": Refinement and implementation of the automated oligosaccharide synthesizer; National Institutes of Health; requested \$170,338 (\$38,048 3U01GM120673-02S1; \$35,000 5U01GM120673-02; \$97,290 3R01GM111835-04S1)
08/01/14-07/31/19	\$1,022,893	Automation of Surface-Tethered Iterative Carbohydrate Synthesis (STICS); National Institutes of Health; NIGMS, requested \$1,345,912 (Award 1R01GM111835-01), PI, co-PI Keith J. Stine (UM – St. Louis)
<u>Current</u>		
09/01/14-Present	\$60,000	University of Missouri Board of Curators' Professorship Endowment (UM System), from 2014, \$10,000 p.a.
09/01/16-07/31/20	\$2,049,554	Refinement and implementation of the automated oligosaccharide synthesizer; National Institutes of Health; requested \$2,174,700 (Award 1U01GM120673-01); MPI, Demchenko, Stine (UM – St. Louis), and De Meo (SIU – Edwardsville)
08/01/18-07/31/21	\$450,000	Stereoselective glycosylation via H-bond-mediated aglycone delivery; National Science Foundation, requested \$527,611 (Award CHE-1800350)
08/01/18-07/31/21		MRI: Acquisition of a Single Crystal X-Ray Diffractometer to Advance Regional Collaboration in Chemical Crystallography; National Science Foundation, requested/funded \$227,500 (Award CHE-1827756); co-PI, PI Nigam Rath
08/01/19-07/31/21	\$375,000	Accelerating Development of Glycopharmaceuticals: Establishment of the UMSL Glycoscience Consortium; UM System Research and Creative Works Strategic Investment Program / Tier 2; requested \$735,000; PI, co-PIs Eike E. Bauer, Michael R. Nichols, Christopher D. Spilling, Keith J. Stine, and Chung F. Wong (all UM – St. Louis)
02/01/20-12/31/23	\$1,300,573	Automation of the chemical synthesis of human milk oligosaccharides; National Institutes of Health; NIGMS, renewal for R01GM111835, requested \$1,699,820 (Award 2R01GM111835-05); PI, co-PI Keith J. Stine (UM – St. Louis)
Total received	\$10,092,557	