

## Proposal Approval Letter

University of New Mexico/NSF
<b>Sponsor</b> Facility Renewal Proposal 2017-2022: Nuclear Resonant and Inelastic X-Ray Scattering at Sector 3-ID of the APS

<b>Project Title</b> Bass, Jay		PD #152
<b>Principal Investigator</b> 06/01/19 - 05/31/20		<b>Internal Proposal Number</b> \$ 103,973
<b>Project Period of Performance</b>	<b>Project Amount</b>	

Yes	No			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Human Subjects involved?</b>	<b>Assurance #:</b>	FWA 00008584
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Vertebrate Animals involved?</b>	<b>Assurance #:</b>	A3118-01

<b>Institution</b>	The Board of Trustees of the University of Illinois ("Illinois")		
<b>DUNS</b>	04-154-4081		
<b>Street 1</b>	Henry Administration Building		
<b>Street 2</b>	506 S. Wright Street	<b>County</b>	Champaign
<b>City</b>	Urbana	<b>State</b>	Illinois
<b>Zip/Postal Code (9-digit)</b>	61801-3620	<b>Country</b>	USA
<b>Congressional District</b>	IL-013		


<b>Administrative Contact</b>	Linda G. Williams, SPA Pre-Award Director		
<b>Email</b>	spapreaward@illinois.edu		
<b>Street 1</b>	Sponsored Programs Administration, 1901 S. First Street, Suite A		
<b>Street 2</b>	Suite A	<b>County</b>	Champaign
<b>City</b>	Champaign	<b>State</b>	Illinois
<b>Zip/Postal Code (9-digit)</b>	61820-7406	<b>Country</b>	USA

**F&A Rates:** F&A rates were calculated based on Illinois's federally negotiated rate for this type of work or, otherwise, as mandated by sponsor policies/guidelines. The F&A rate agreement is available here:  
[http://sponsoredprograms.illinois.edu/forms/ONR\\_ICR\\_Agreement.pdf](http://sponsoredprograms.illinois.edu/forms/ONR_ICR_Agreement.pdf).

Illinois is:

- Is registered in the System for Award Management (SAM); and
- Is registered in the FDP Expanded Clearinghouse.

The appropriate programmatic and administrative personnel at Illinois have approved this proposal submission. Illinois reserves the right to negotiate the terms, conditions and provisions included in any agreement prior to acceptance.

Susan A. Martinis, Interim Vice Chancellor for Research	
<b>Name and Title of Official Authorized to Approve Proposal</b>	
	11/13/18
<b>Signature</b>	<b>Date</b>

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

School of Earth, Society, and Environment  
1301 W. Green Street, MC-103  
Urbana, IL 61801



November 12, 2018

Dr. Carl Agee  
President, COMPRES  
University of New Mexico

Dear Dr. Agee:

The University of Illinois at Urbana-Champaign is pleased to submit a proposal for continued participation for Year 3 of the project entitled, **“Facility Renewal Proposal 2017-2022: Nuclear Resonant and Inelastic x-ray Scattering at Sector 3-ID of the APS”** in support of your project “Consortium for Materials Properties Research in Earth Sciences (COMPRES): National Facilities and Infrastructure Development for High-Pressure Geosciences Research” from the University of New Mexico. This proposal was prepared by Professor Jay D Bass in the Department of Geology.

For information relating to the technical portions of this project, you may contact Professor Bass, University of Illinois at Urbana-Champaign, Department of Geology, 1301 W. Green Street, Urbana, IL 61801, (217) 333-3080 or [jaybass@illinois.edu](mailto:jaybass@illinois.edu).

Negotiations concerning fiscal aspects of this project or any other official correspondence should be addressed to the Sponsored Program Administration, 1901 South First Street, Suite A, Champaign, IL, 61820, (217) 333-2187.

Sincerely,

Scott Morris  
Associate Director for Operations  
School of Earth, Society, and Environment

Susan A. Martinis  
Vice Chancellor for Research

**University of Illinois**  
**Facility Renewal Proposal 2017-2022:**  
**Nuclear Resonant and Inelastic X-Ray Scattering at Sector 3-ID of the APS**

**Statement of Work**

UIUC Facilities Project for COMPRES: “Nuclear Resonant Inelastic X-ray Scattering and Mossbauer Spectroscopy at Sector 3 of Advanced Photon Source”

The University of New Mexico COMPRES subaward to UIUC will provide support for a Research Spectroscopist who resides at Sector 3 of the Advanced Photon Source, Argonne National Lab. Under this project, we will provide support for COMPRES users of the experimental facilities at Sector 3 for nuclear resonant inelastic X-ray scattering, synchrotron Mossbauer, and acoustic phonon studies.

We will provide assistance with setting up experiments using the facilities at Sector 3, assistance with preparation of diamond anvil cells, assistance with low-temperature cryogenic experiments, high-temperature experiments with laser heating, and experiments at ambient conditions.

We will advise and assist to the extent possible users with preparation of specialized samples enriched in the isotope  $^{57}\text{Fe}$  for synchrotron and conventional Mossbauer and nuclear resonant experiments. Assistance will be given to users in the analysis and interpretation of experimental results using specialized software for experiments performed.

The Research Spectroscopist will help to organize workshops on experimental techniques and the analysis of data. Other educational and outreach duties will be performed as necessary and required by the COMPRES Central Office and Executive Committee.

The Research Spectroscopist will perform experiments of her choice to further her scientific career and enhance the visibility of the scientific program at Sector 3.

The Research Spectroscopist will participate in the development of new experimental methods and protocols at Sector 3. Off-line conventional Mossbauer experiments will be performed and analyzed for members of the COMPRES community.

The Research spectroscopist will take a leadership role in the construction, installation, and commissioning of a new on-line Raman spectrometer for measurement of on-line pressure and Raman spectra, and in the maintenance of other off-line Raman spectroscopy facilities at Sector 3.



## SPA Budget Template - FY19

Activity Type	Sponsored Research	Applicable F&A Rate	26.00%
Location	Off Campus	Applicable F&A Basis	MTDC
F&A Basis	MTDC	Tuition Remission Rate	64.00%
F&A Rate Used	26.00%	Fringe Benefit Rate (SURS)	41.98%
Notes: Project year 3 -- University of New Mexico = sponsor; NSF = prime. Current Banner Grant Code = AE210. Off Campus F&A rate.		Fringe Benefit Rate (GRA)	8.02%
		Fringe Benefit Rate (Hourly ≥ Half Time)	0.10%
		Fringe Benefit Rate (Non-SURS & Hourly < Half Time)	7.75%
		Inflation Rate - Salaries	3.00%
		Inflation Rate - Expenses	4.00%

		Period 1	Total
A.	PI/PD		
	Salary	\$ -	\$ -
	Fringe 41.98%	\$ -	\$ -
	Co-PI/Co-I 1		
	Salary	\$ -	\$ -
	Fringe 41.98%	\$ -	\$ -
	Co-PI/Co-I 2		
	Salary	\$ -	\$ -
	Fringe 41.98%	\$ -	\$ -
	Co-PI/Co-I 3		
	Salary	\$ -	\$ -
	Fringe 41.98%	\$ -	\$ -
	Co-PI/Co-I 4		
	Salary	\$ -	\$ -
	Fringe 41.98%	\$ -	\$ -
	Other Senior Perso		
	Salary	\$ -	\$ -
	Fringe 41.98%	\$ -	\$ -
	Total Senior Perso		
	Salary	\$ -	\$ -
	Fringe	\$ -	\$ -
	Total	\$ -	\$ -
	Postdoc		
	Salary	\$ -	\$ -
	Fringe 41.98%	\$ -	\$ -
	Other Professional		
	Salary	\$ 52,057	\$ 52,057
	Fringe 41.98%	\$ 21,853	\$ 21,853
	GRA		
	Salary	\$ -	\$ -
	Fringe 8.02%	\$ -	\$ -
	Student Hourly		
	Salary	\$ -	\$ -
	Fringe 0.10%	\$ -	\$ -
	Admin. Salary*		
	Salary	\$ -	\$ -
	Fringe 41.98%	\$ -	\$ -
	Other (non-SURS)		
	Salary	\$ -	\$ -
	Fringe 7.75%	\$ -	\$ -
	Total Non-Senior I		
	Salary	\$ 52,057	\$ 52,057
	Fringe	\$ 21,853	\$ 21,853
	Total	\$ 73,910	\$ 73,910
	All Personnel		
	Salary	\$ 52,057	\$ 52,057
	Fringe	\$ 21,853	\$ 21,853
	Total	\$ 73,910	\$ 73,910
B.	Capital Equipment	\$ -	\$ -
	Space Lease / Rent	\$ -	\$ -
C.	Domestic Travel	\$ 6,150	\$ 6,150
	Foreign Travel	\$ -	\$ -
D.	Participant Support Costs	\$ -	\$ -
E.	Materials & Supplies	\$ 1,558	\$ 1,558
	Publication Costs	\$ -	\$ -
	Consultant Costs	\$ -	\$ -
	Service Costs	\$ -	\$ -
	Service Costs: MTDC Exempt (AWS, I	\$ -	\$ -
	Subaward Costs	\$ -	\$ -
	Exempt Subaward Costs	\$ -	\$ -
	Other (printing, etc.)	\$ 900	\$ 900
	Tuition Remission	\$ -	\$ -
	Total Other Direct Costs	\$ 2,458	\$ 2,458
F.	Total Direct Costs	\$ 82,518	\$ 82,518
	MTDC: Base Costs	\$ 82,518	\$ 82,518
G.	Total F&A Costs	\$ 21,455	\$ 21,455
H.	Total Direct and F&A Costs	\$ 103,973	\$ 103,973
SPA	Effective F&A Rate	26.0%	26.0%
SPA	Unrecovered F&A Costs	\$ -	\$ -

**University of Illinois**  
**Facility Renewal Proposal 2018-2019:**  
**Nuclear Resonant and Inelastic X-Ray Scattering at Sector 3-ID of the APS**

**Budget Justification**

Budget Period: June 1, 2019 - May 31, 2020

**Personnel:**

The project PI is Dr. Jay Bass at the University of Illinois at Urbana-Champaign. No salary support is requested for the PI.

The Research Spectroscopist for the project is Dr. Wenli Bi. Her time is devoted 100% at Argonne National Laboratory (Argonne) in Argonne, Illinois, for 7.2 months.

**Fringe Benefits**

Fringe benefits are calculated at the rate approved by the Federal Government. Fringe benefits for the academic salary of Dr. Wenli Bi is at the negotiated rate of 41.98%.

**Domestic Travel:**

Dr. Jay Bass: The PI will travel to the Argonne National Laboratory to collaborate and facilitate the research, for approximately three trips. He will travel round-trip from the University of Illinois at Urbana-Champaign to Argonne (approximately 140 miles each way). Each trip will last approximately two days and includes per diem, lodging, and transportation costs. Additional funds are requested for Dr. Bass to attend the COMPRES annual meeting held at the University of New Mexico in Albuquerque, New Mexico. Estimates are based on historical data for 5 days and four nights of per diem, plus airfare, and transportation.

Dr. Wenli Bi: Funding is requested for the Research Spectroscopist to attend one domestic scientific conference (e.g., the American Geophysical Union (AGU) annual meeting) and/or COMPRES workshops at the University of New Mexico, in Albuquerque, New Mexico. Estimates for travel are for 6 days and 5 nights of per diem, plus lodging, airfare and transportation. Additional funds are requested for travel to the COMPRES annual meeting at the University of New Mexico in Albuquerque, New Mexico. Estimates are based on historical data for 6 days and five nights of per diem, plus airfare, lodging, and transportation.

**Materials & Supplies:**

Dr. Wenli Bi is encouraged as a COMPRES research scientist to pursue experiments for her career development, and is expected to do experiments leading to the development of new techniques for high pressure at her beamline. Accordingly, requested funding includes required materials and supplies for experiments by synchrotron and off-line Mossbauer users and the Research Spectroscopist. Such supplies include, but are not limited to, reagents, rhenium and other metal foils for gaskets, diamond anvil seats, <sup>57</sup>Fe metal (to make samples for Mossbauer experiments), and custom sample holders.

**Other - Conference Registration Fees:**

Funding is requested for Dr. Jay Bass to register for the COMPRES annual meeting. This estimate is based on historical data related to the conference.

Funding is requested for Dr. Wenli Bi to register at a domestic scientific conference, such as the American Geophysical Union's fall annual meeting. Conference registration may also include the COMPRES annual meeting. Estimates are based on historical data of associated costs.

**Facilities and Administrative Costs:** The applied Facilities and Administrative rate has been negotiated and approved by the Office of Naval Research on June 28, 2016. The off-campus rate of 26.0% is assessed on Modified Total Direct Cost (MTDC).