$PLANT \ SCIENCE \ GRADUATE \ PROGRAM \ ^{Do \ Not \ Submit \ to \ the \ Graduate \ School}$

RESEARCH PROPOSAL/PLAN APPROVAL

Name of Student:		Name of Major Professor:		ssor:	
Degree Objective:MS		PhD	Year In Program _	rogram	
Title of Research Director):	h Proposal/Plan	(submit a copy of t	the research proposal w	rith this form to the Graduate	
Date of Prop	osal Meeting	j:			
Committee M	<u>lembers</u> :				
Name		Signatu	re	Date	
1					
2					
3					
4					
5					
6					
Conditions &	Comments:				
Graduate Program Chair (Nar		Name and Signa	ature)	 Date	
Indicate if any	of the following	applies to this res	• •	email a copy of this signed form to dadvising@umd.edu	
	environment?	Yes No	-	potential impact on the gency, please explain or attach	
			by the granting agency, pl performed or attach expl	lease explain the environmental anation.	

Human Subjects. Will this research include the use of Human Subjects? If yes, has an IRB application been submitted to the IRB office? Yes No

Please provide the title used on the IRB application and the IRB protocol approval number.

An IRB application has not been submitted for this project, but will be before this project is conducted. Submit one copy of the proposal protocol form to the IRB office. For more information, contact the IRB office at irb@umd.edu.

Animals. Will this research include using vertebrate animals? Yes No If yes, has an IACUC protocol approval number been assigned?

Please provide the title used in the IACUC application and the IACUC protocol approval number.

An IACUC application has not yet been submitted for this project. For more information, contact the IACUC Coordinator at x55037 or iacuc-office@umd.edu

Radioactive Materials. Will radioactive materials or ionizing radiation producing devices be used in this research? Includes x-ray units, electron microscopes, and particle accelerators; non-ionizing radiation producing devices such as lasers, IR, UV, or other optical emitting devices; and/or microwaves, RF, or electromagnetic sources of radiation. Yes No

If yes, will these devices be ___ionizing and/or ___ non-ionizing radiation producing? Maryland Department of the Environment (MDE) requires radiation safety training and an approved authorization prior to the use of such devices. Call DES, x53960, for assistance.

Genetically engineered organisms: Will genetically engineered organisms be used or produced in this research? Yes No If yes please explain.

Biological materials: Will this research use biological materials? e.g. recombinant DNA or RNA, human pathogens, toxins, or blood, unfixed tissue, or primary cell culture derived from humans or non-human primates. Call DES, x53960, for assistance. If recombinant experiments are already registered, provide approval number. Yes No

Select Agent Toxins: Will this research require the use of one or more of the following select agent toxins: e.g..Abrin, Botulinum neurotoxins, Clostridium perfringens epsilon toxin, Conotoxin, Diacetoxyscirpenol (DAS), Ricin,Saxitoxin, Shigatoxin, Shiga-like ribosome inactivating proteins, Staphylococcal enterotoxins, T-2 toxin, Tetrodotoxin? Call DES, X53960 for assistance. Yes No

 $\label{toxic_gases} \mbox{Highly toxic/reactive gases (e.g.. arsine, hydrogen cyanide, cyanogens, silane, fluorine, etc.. Call DES, X53960 for assistance)? Yes No$

Scientific diving: Will this project require SCUBA diving? Call DES, X53960 for assistance. Yes No

Boats used in Research: Does project require use of boats? If boats are required for this research, checking yes to this box indicates that you are familiar with the Dive Safety and Boating Manual. Call DES, x53960, for assistance. Yes No

Chemicals: Will this project require the use of chemicals? If this project includes the use of chemicals, OSHA requiresa Chemical Hygiene Plan and training. Call DES, X53960 for assistance. Yes No

If you check yes to any of the above, proper assurances must be completed and obtain from Department of Environmental Safety.