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February 7, 2006

Ms. Betsy Ullrich
Senior Health Physicist
Commercial and R&D Branch
Division of Materials Safety
US Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

NMSB2

RE: License 52-01986-04

03601183

Dear Ms. Ullrich:

We request an amendment to the referred license in order to include Dr. Irving Vega in our roster of authorized users. Enclosed you will find the following documents:

1. Curriculum Vitae of Dr. Vega
2. Stipulation of intended use
3. Evidence of previous training at Rutgers University
4. Map of area where research with radioactivity will be carried out.

Incorporating Dr. Vega as an authorized user will not have a negative impact on our Radiation Safety Program since the inventories of the radioisotopes that he will utilize in his work (^{32}P and ^{45}Ca) have been consistently well below the maximum authorized limit for the last few years. In the case of ^{45}Ca our current inventory is zero. Dr. Vega is also familiar with the specific requirements of our license. We are at your service should you require any further information.

Sincerely,

Gladys Escalona de Motta, Ph. D.
Chancellor

c Dr. Fernando Renaud
Biology Department
Natural Science College

UNIVERSIDAD DE PUERTO RICO
Recinto de Río Piedras
Oficina de la Rectora

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NMCS/RCM MATERIALS-002

IRVING E. VEGA-VEGA, Ph.D.

CURRICULUM VITAE

Education

University of Puerto Rico, Mayagüez Campus	Biology	B.S./1996
Rutgers, The State University of New Jersey	Cell Biology and Neuroscience	Ph.D./2002
Rutgers, The State University of New Jersey	Cell Biology and Neuroscience	2002-2003
Mayo Clinic Jacksonville	Neuroscience	2003-2005

Professional Experience

1997-1999	Graduate Studies; Department of Biochemistry and Molecular Biology; Dr. Kiran Madura (Advisor); UMDNJ-Robert Wood Johnson Medical School; Piscataway, New Jersey
1999-2001	Ph.D. Candidate; Department of Cell Biology and Neuroscience; Dr. Shu C. Hsu (Thesis Advisor); Rutgers University; Piscataway, New Jersey
2002	Postdoctoral Fellow; Department of Cell Biology and Neuroscience; Dr. Shu C. Hsu (Post-doctoral Advisor); Rutgers University, Piscataway, New Jersey
2003	Research Fellow; Department of Neuroscience; Dr. Shu-Hui Yen (Post doctoral Advisor); Mayo Clinic Jacksonville, Jacksonville, FL
2004-2005	Senior Research Fellow; Department of Neuroscience; Dr. Shu-Hui Yen (Supervisor); Mayo Clinic Jacksonville, Jacksonville, FL
2005-present	Assistant Professor; Department of Biology; University of Puerto Rico-Rio Piedras Campus, San Juan, Puerto Rico

Publications

1. Schaubert, C., Chen, L., Tongaonkar, P., **Vega, I.**, and Madura, K. (1998) Sequence elements that contribute to the degradation of the yeast Gα. *Genes to Cell* 3:307-319.
2. Schaubert, C., Chen, L., Tongaonkar, P., **Vega, I.**, Lamberstson, D., Potts, W., and Madura, K. (1998) Rad23 links DNA repair to the ubiquitin-proteasome pathway. *Nature* 391:715-718.
3. **Vega, I.E.**, Hsu, S.C. (2001) The Exocyst complex associates with microtubules and mediate vesicle targeting and neurite outgrowth. *J. Neuroscience* 21:3839-3848.
4. **Vega, I.E.**, Hsu, S.C. (2003) The septin Nedd5 protein associates with both the Exocyst complex and microtubules and disruption of its GTPase activity promotes aberrant neurite outgrowth in PC12 cells. *NeuroReport* 4:31-39
5. Sahara, N., **Vega, I.E.**, Ishizawa, T., Lewis J., McGowan, E., Hutton, M., Dickson, D. and Yen, S.H. (2004) Phosphorylated p38MAPK specific antibodies cross-reacted with sarkosyl-insoluble hyperphosphorylated tau proteins. *J. Neurochem.* 90:829-838.
6. Ko, L.-W., DeTure, M., Sahara, N., Chihab, R., **Vega, I.E.** and Yen, S.-H. (2005) Recent advances in experimental modeling of the assembly of tau filaments. *Biochim. Biophys. Acta* 1739:125-139.
7. **Vega, I.E.**, Cui, L., Propst, J. A., Lee, G., Hutton, M. and Yen, S.H. (2005) Increase in tau tyrosine phosphorylation correlated with the formation of tau-aggregates. *Brain Res. Mol. Brain Res.* 138:135-144.
8. Fauq, A.H., Kache, R. and **Vega, I.E.** (2006) Synthesis of an acid-cleavable isotope-coded affinity tag for proteomic expression profiling analysis. *Bioconjugate Chem.* 17: 248-254
9. **Vega, I.E.**, Grenningloh, G., Hamano, T., Propst J.A. and Yen, S.H. (2006) Calpain mediated degradation of SCG10 protein upon Taxol-treatment and Tau overexpression. *Submitted to Exp. Neurology*

Honors

1994	Honor Society BBB, Zeta-Alpha Chapter, University of Puerto Rico - Mayagüez
1994-1996	NIH-MARC Undergraduate Fellowship, University of Puerto Rico - Mayagüez

- 1996 Cum Laude, Biology Department, University of Puerto Rico - Mayagüez
- 1996-1998 NIH-Initiative for Minority Student Development, UMDNJ (GM55145)
- 1998-1999 NIH-Training Grant, Department of Biochemistry, UMDNJ (GM08360)
- 2001 Research Achievement Award, UMDNJ-Robert Wood Johnson Medical School
- 2001 NJAS-Award for Achievement in Research, Senior Academy Student Award, New Jersey Academy of Science
- 2001 ASCB/Minorities Affairs Committee Travel Award, 41st American Society for Cell Biology Annual Meeting
- 2001 MAC/Pfizer, Inc. Poster Award, Minorities Affairs Committee Poster Session, 41st American Society for Cell Biology Annual Meeting
- 2003 NIA/NIH-Technical Assistance Workshop Travel Award
- 2004 Keystone Symposia Minority Travel Award; Meeting: *Mass Spectrometry in System Biology*; Keystone Symposia

Scientific Presentations

Invited Speaker:

- 2004 Neuroscience Work in Progress Seminar Series, Department of Neuroscience, Mayo Clinic Jacksonville
Title: Tau tyrosine phosphorylation correlates with the formation of intraneuronal aggregates
- 2004 SNRP-Seminar Series, Institute of Neurobiology, University of Puerto Rico – Medical Sciences Campus
Title: Alzheimer's disease and beyond: *A proteomic approach to elucidate pathological events underlying tau-induced neurodegeneration*
- 2005 Biology Seminar Series, Department of Biology, University of Puerto Rico – Rio Piedras Campus
Title: Microtubule-associated protein Tau: *Its function and dysfunction*
- 2005 Department of Biology Seminar Series, Department of Biology and Geology, University of South Carolina – Aiken
Title: Microtubule-associated protein Tau: *Its function and dysfunction*
- 2005 The EPSCoR Behavioral Biology Seminar Series, Department of Biology, University of Vermont
Title: Proteomics and Tauopathy: *The intricate merge of two fields*

Meetings:

- 2004 Keystone Symposia: Mass Spectrometry in System Biology, Keystone Symposia, New Mexico
Title: Identification of novel tyrosine phosphorylation sites on tau proteins purified from brain extract

Research Grants

Pending Research Support:

NIH/Center of Biomedical Research Excellence (COBRE)
Protein Research Center – University of Puerto Rico
Project: Proteomics approach to identify molecular events involved in Tauopathy
Role: Co-Investigator
Submitted: October 12, 2005

NIH/Support of Continuous Research Excellence (SCORE)
Minority Biomedical Research Support Awards (MBRS)
Project: Characterization of a novel tau-associated protein in a tauopathy mouse model

Role: Co-Investigator
Submitted: October 1, 2005

Completed Research Support:

4F32NS047930 Vega (PI) 01/01/2004-12/31/2006

NINDS/NIH-Ruth L. Kirschstein National Research Service Award

Project: Proteome analysis in transgenic mice expressing P301L tau

Role: Principal Investigator

Smith Fellowship in Neurodegenerative Diseases and Stroke

Vega (PI)

01/01/2003-12/31/2003

Mayo Clinic

Project: Molecular events involved in tau-induced neurodegeneration

Role: Principal Investigator

RO1 NS38892-02S1 Hsu (PI)

01/01/2002-12/31/2002

NINDS/NIH-Supplement for Postdoctoral Underrepresented Minorities

Project: The role of the exocyst complex in neuronal differentiation

Role: Co-Investigator

F31GM20274 Vega (PI)

05/01/1999-12/31/2001

NIGMS/NIH-MARC Predoctoral Fellowship

Project: Rad23 phosphorylation in DNA repair and proteasome interaction

Role: Principal Investigator



University of Puerto Rico – Río Piedras
Faculty of Natural Sciences
Department of Biology
San Juan, Puerto Rico 00931

September 15, 2005

Dr. Fernando Renaud
Professor
Department of Biology
University of Puerto Rico – Río Piedras

Dear Dr. Renaud,

The present is to request authorization for the use of radioactive isotopes in my laboratory (JGD #120). The isotopes that my lab will employ are ^{32}P and ^{45}Ca . These isotopes will be used in *in vitro* experiments designed for the characterization of kinases and calcium-binding proteins. The protocols for radioactive assays are as follow:

^{45}Ca Calcium overlay assay: Purified recombinant proteins will be subjected to native or SDS-PAGE electrophoresis. The resolved proteins will be transferred to nitrocellulose. After transfer, the membrane is soaked in equilibration buffer [10mM HEPES (pH7.4), 60mM KCl, 5mM MgCl_2] for 1hr with three buffer changes. Then, the membrane is going to be incubated in equilibration buffer containing $1\mu\text{Ci/mL}$ ^{45}Ca for 30min at room temperature. The membrane is washed three times with distilled water (5min/each) at room temperature (RT). The membrane is air dried and exposed to X-ray film for various time intervals.


^{45}Ca Calcium binding assay: Purified recombinant proteins will be purified and equilibrated in binding buffer [10mM Tris-HCl (pH 7.5), 100mM KCl]. The beads containing the purified proteins will be incubated in binding buffer containing $1\mu\text{Ci/mL}$ ^{45}Ca with or without 20mM EDTA for 30min at RT. The supernatant will be removed and the beads washed three times with binding buffer. The radioactivity associated to the bound proteins would be measured by liquid scintillation counting.

Phosphorylation assay: Immunopurified proteins will be equilibrated in kinase buffer [20mM HEPES (pH7.5), 10% glycerol, 5mM MgCl_2 , 10mM MnCl_2]. Specific kinases will be added and incubated with the immunopurified substrate in presence of $1\mu\text{Ci}$ [γ - ^{32}P]ATP, for 20min at RT. The beads containing the immunopurified protein will be washed several times. Sample loading buffer [60mM Tris-HCl (pH6.8), 2%SDS, 10% glycerol, 0.025% Bromophenol Blue, 5% 2-mercaptoethanol] will be added to stop the reaction. The proteins are resolved in SDS-PAGE. The gel will be dried and exposed to X-ray film.

In my career, I have acquired experience in the use, management, security and inventory of radioactive materials [e.g. Schaubert, C. et al., Nature 391:715-718]. These prior experiences allow me to understand and be aware of the responsibilities associated to the use of radioactive isotopes.

Your consideration and support in this regard will have a direct impact on my research goals.

Sincerely,

A handwritten signature in black ink, appearing to read 'I. Vega', with a horizontal line drawn through it.

Dr. Irving E. Vega
Assistant Professor
Department of Biology
University of Puerto Rico
Julio García Díaz #120
San Juan, Puerto Rico 00931

THE STATE UNIVERSITY OF NEW JERSEY

RUTGERS

Rutgers Environmental Health and Safety
Rutgers, The State University of New Jersey
27 Road 1 • Piscataway • New Jersey, 08854-8036
732/445-2550 • FAX: 732/445-3109

February 2, 2006

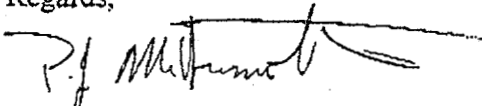
To Whom It May Concern:

This is to certify that Dr. Irving Vega attended an Initial Radiation Safety Training session presented by Rutgers Environmental Health and Safety in 1996. Subsequently, Dr. Vega attended refresher radiation safety training sessions in 1997, 1999, 2001 and 2002.

Radiation Safety Training is designed to instruct the participants how to handle and work safely with radioactive materials at Rutgers University and the Robert Wood Johnson Medical School (RWJMS). Topics covered include, but are not limited to: biological effects of ionizing radiation, dose and dose rates, instrumentation and monitoring techniques, safe handling techniques, ALARA, contamination control and emergency response procedures. Be advised that some of the training material, most notably emergency procedures (whom and when to contact) and waste disposal, are specific to Rutgers University.

Please feel free to contact me if you have questions regarding the content of our Radiation Safety Training.

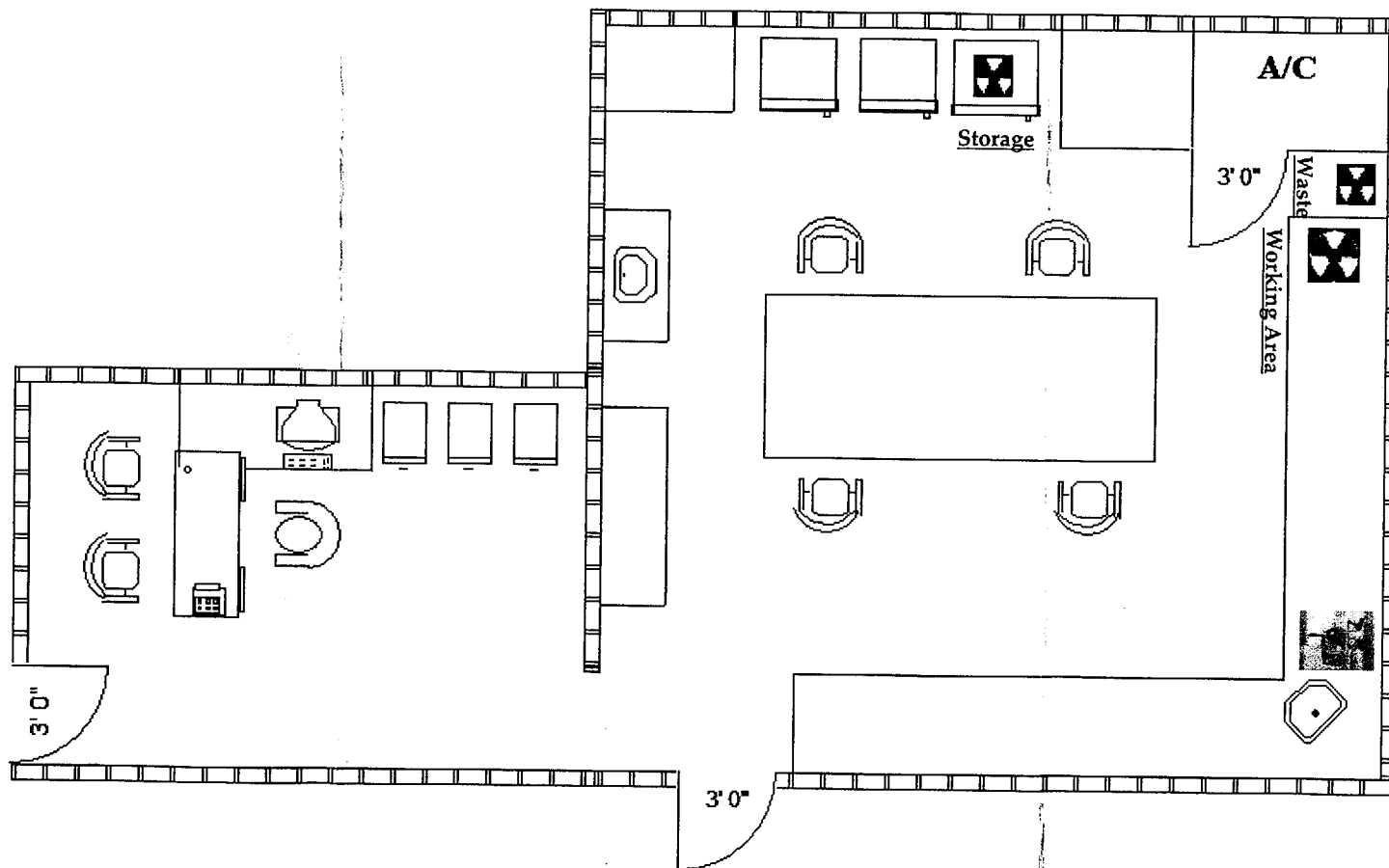
Regards,



Patrick McDermott
University Health Physicist
mcdermot@rehs.rutgers.edu

Dr. Vega's Laboratory

Radioactive Material Work - Layout



This is to acknowledge the receipt of your letter/application dated

2/2/2006, and to inform you that the initial processing which includes an administrative review has been performed.

☒ AMEND. 52-01986-04
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 138417.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.