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**BOARD OF REGENTS**  
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**AGENDA**  
**SPONSORED PROGRAMS COMMITTEE**  
**Wednesday, February 27, 2019 at 9:35 a.m.**

Pennington Conference Center  
6400 Perkins Road  
Baton Rouge, Louisiana

- I. Call to Order
- II. Roll Call
- III. BoRSF Matching for Statewide Federal Initiative: Louisiana Biomedical Research Network
- IV. Other Business
- V. Adjournment

Committee Members: Sonia Pérez, Chair, Collis Temple III, Vice Chair, Blake David, Charles McDonald, Darren Mire, T. Jay Seale III, Felix Weill and Anthony Kenney

## AGENDA ITEM III.

### **BoRSF Matching for Statewide Federal Initiative: Louisiana Biomedical Research Network**

#### **Background Information**

The National Center for Research Resources of the National Institutes of Health (NIH) is currently soliciting proposals from academic institutions for continuation of Institutional Development Award (IDeA) grants. The purpose of the program is to strengthen the biomedical research capacity in awarded states. Proposers may request up to \$2.5 million in direct costs annually for a period of five years. Proposals are due in March 2019. The Board has provided matching funds in the amount of \$1,148,000 for two previous renewals of the Louisiana Biomedical Research Network's IDeA project, which have included more than 20 campuses, both public and independent, across all regions of Louisiana.

#### **Staff Summary**

Kim Hunter Reed, Commissioner of Higher Education, has received a request from Louisiana State University and A&M College (see Attachment A) for cash match from the Support Fund for an IDeA continuation proposal entitled "Louisiana Biomedical Research Network." The continuation effort seeks to facilitate the growth of biomedical research activities throughout the State by enhancing inter-institutional communication, collaboration, and the development of biomedical workforce and infrastructure resources. While the request asks for an increase in BoRSF matching to \$1,250,000, declines in Support Fund expendable revenues indicate that no increases to matched awards should be considered at this time unless the soliciting federal agency requires a set match level. Staff therefore recommends that the match request be considered at the previous level of \$1,148,000 for the five-year duration of the award.

#### **Senior Staff Recommendation**

**The Senior Staff recommends that the Board of Regents commit a cash match from previously unspent monies in the Board of Regents Support Fund for the Louisiana State University NIH Institutional Development Award (IDeA) continuation proposal entitled "Louisiana Biomedical Research Network." The amount of cash match provided shall not exceed \$1,148,000 for the five-year duration of the award. Matching funds are to be provided only if NIH Institutional Development Award (IDeA) funding is received.**

# ATTACHMENT A

## 1. BUDGET NARRATIVE

The Louisiana Biomedical research Network (LBRN) Summer Research Program has been a component in outreach core of this NIH funded program since 2002. In the current cycle the administrative budget was reduced by \$500,000 which would have affected our Summer Research Program. We are grateful to the Board of Regents for support of the LBRN summer Research program, which allowed us to support 15 undergraduate students, 5 graduate students and 2 faculty within the state of Louisiana each year to engage in biomedical research. Since 2015, the Summer Research Program has supported more than 100 undergraduates and graduate students, and faculty from across Louisiana by providing them high quality research experiences at Louisiana research-intensive institutions. In the summer of 2018, we piloted for the first time a summer bioinformatics training program for students and faculty from across Louisiana. Bioinformatics data analysis is a highly sought-after skill set and the training program was very well received. We are requesting that the Board of Regents continue their highly valuable support of the Summer Research Program, which will allow us to keep the program at its current level, and also support a 6 week Summer Bioinformatics/Data Analytics training program. A detailed breakdown of the funds being requested per year is shown below.

Each year we are requesting \$102,000 for 15 undergraduate student participants which consist of a fellowship stipend, supplies and housing. We are also requesting an additional \$127,600 to award subcontracts to our participating campuses such as Louisiana Tech University, Louisiana State University in Shreveport, Southern University A&M College, and University of Louisiana at Monroe, to support up to 5 graduate students and 2 faculty, with related expenses including salaries, fringe benefits, supplies, housing and F&A cost, as appropriate.

We are requesting an additional \$20,400 towards support for a 6-week Summer Bioinformatics/Data Analytics training program for 20 undergraduate 7 graduate and 7 faculty members from across Louisiana. This training program includes unlimited access to online training material and three onsite workshops to be hosted at the LSU Center for Computation & Technology. Participants will be provided overnight boarding and boxed lunch for attending the onsite workshop.

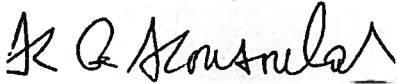
	Y1	Y2	Y3	Y4	Y5	Total
Undergraduate fellowship stipend	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	<b>\$300,000</b>
Supplies	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	<b>\$75,000</b>
Housing	\$27,000	\$27,000	\$27,000	\$27,000	\$27,000	<b>\$135,000</b>
Subtotal	\$102,000	\$102,000	\$102,000	\$102,000	\$102,000	<b>\$510,000</b>
Subcontracts	\$127,600	\$127,600	\$127,600	\$127,600	\$127,600	<b>\$638,000</b>
Bioinformatics Training	\$20,400	\$20,400	\$20,400	\$20,400	\$20,400	<b>\$102,000</b>
<b>Total</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$1,250,000</b>

The total funding request per year is \$250,000, for 5 years (total cost \$1,250,000).

### Cost Sharing

We are currently seeking the University's commitment to continue to provide salary cost sharing and summer research supplies to the LBRN/INBRE renewal. Pending the University's approval, approximately \$55,000/year will be provided for PI and PC salaries and \$30,000/year for summer research supplies.

## 2. Signatures



Konstantin G. Kousoulas  
Principle Investigator



Darya Courville  
Executive Director of Sponsored Programs

1/8/19

## 3. Attachments

- Principal Investigator Biographical sketch
- INBRE RFA

**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors.  
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Kousoulas, Konstantin, G.

eRA COMMONS USER NAME (credential, e.g., agency login): vtgusk

POSITION TITLE: Professor of Virology

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Fairleigh Dickinson Univ., Teaneck, NJ	BS	05/75	Physics
Pennsylvania State Univ., University Park, PA	MS	05/77	Biophysics
Pennsylvania State Univ., University Park, PA	PhD	05/81	Molecular & Cell Biology
Univ. of CA San Francisco, San Francisco, CA	Postdoc	01/82-12/87	Molecular Virology
University of Chicago, Chicago, IL	Postdoc	04/83-05/86	Molecular Virology

**A. Personal Statement**

I have considerable experience in molecular biology, virology, viral and tumor immunology and vaccinology. I have focused my work over 30 years as an independent investigator on understanding the mechanism of membrane fusion involved in herpes simplex virus type-1 (HSV-1) entry via fusion of the viral envelope with plasma or endosomal cellular membranes, and virus spread through virus-induced cell-to-cell fusion. I have also worked extensively in the immunopathogenesis of HSV-1 and HSV-2 ocular and genital infections and have generated a novel live-attenuated HSV-1 vaccine (patent awarded) that holds promise for combating these infections. Also, I have utilized a HSV-1 vectored approach to design oncolytic viral immunotherapies against cancers including breast cancer and melanoma (patent awarded). I have successfully led the Center for Experimental Infectious Disease Research (CEIDR) funded by the NIH:NIGMS COBRE mechanism to its current phase III. This Center has graduated more than 14 investigators with independent R01-funded programs during the last 11 years. I have trained more than 40 postdoctoral fellows and PhD graduate students and have mentored more than 20 assistant professors as part of the CEIDR mentoring. Currently, I am the Principal Investigator of the Louisiana Biomedical Research Network (LBRN) funded by the NIGMS:INBRE mechanism. As part of this Network, I oversee and support biomedical research carried out within multiple primarily undergraduate institutions funded by the INBRE mechanism, as well as research support cores focusing on computational biology/bioinformatics and molecular and cellular biology. In this capacity, I have mentored many faculty from PUI campuses that have been successful in obtaining independent funding. I have served as a consultant to non-profit and for-profit institutions and companies for diagnostics and vaccine development. As Associate Vice President for Research & Economic Development at LSU, I have worked closely with others in the SE IDeA Region to coordinate efforts in economic development in biomedical fields and I oversee major Core Facilities at LSU providing state-of-the-art expertise and equipment.

**B. Positions and Honors****Positions and Employment**

1982-1983 Postdoctoral Fellow of the American Cancer Society. California Dept. of Health, Berkeley, CA  
 1983-1986 PHS Postdoctoral Fellow. University of California, San Francisco, CA  
 1983-1985 Visiting Postdoctoral Fellow. University of Chicago, Chicago, IL

1986-1987 Research Assistant Professor. University of California, San Francisco, CA  
 1988-1991 Assistant Professor of Virology. Louisiana State University (LSU), School of Veterinary Medicine (SVM)  
 1991-1994 Associate Professor of Virology. LSU, SVM. Dept. of Microbiol. & Parasitology  
 1994-present Professor of Virology & Biotechnology. LSU, SVM. Dept. of Pathobiological Sciences  
 2002-present Director, Division of Biotechnology & Molecular Medicine (BioMMED). LSU, SVM  
 2004-present Director, NIH COBRE Center for Exp. Infectious Disease Research (CEIDR). LSU, Baton Rouge, LA  
 2005-present Director, Molecular & Cell Biol. Core Idea Network for Biomedical Research Excellence (INBRE), LSU, Baton Rouge, LA  
 2013-present Associate Vice President for Research & Economic Development (part-time position)

### **Other Experience and Professional Memberships**

1995, 1996, 1999, 2004, 2005 Member, USDA National Research Initiative Competitive Research Program  
 2000-2004 Member, NIH, NCRR, Comparative Medicine Study Section  
 2007-2011 Member NIH:NCRR Scientific and Technical Review Board on Biomedical and Behavioral Research Facilities  
 2008, 2009, 2010, 2011 Chair, Special Emphasis Panels, NIH, NCRR  
 2008, 2009, 2010, 2011 Chair, Special Emphasis Panels, NIH, NCRR  
 2010-2015 Reviewer for PNAS, J Virol, Virology, J Pathol, J Gen Virol, Vaccine, Canc. Res, J. Biol. Chem, and other journals (average of 10 papers per year)  
 2011-2013 Member of NIH:NIGMS panels for INBRE and COBRE grants (chaired 2)  
 2012-2013 Member of the NIH STRB panel  
 2015 Member, Editorial Board, Journal of Virology  
 2015-2016 Member of the National Cancer Institute (NCI) R21/R03 Review panel ZCA1 SRB-L (M1).

### **Honors**

1972-1975 Honors Program, Phi Zeta Kappa. Fairleigh Dickinson University  
 1974-1975 Phi Omega Epsilon; Magna Cum Laude. Fairleigh Dickinson University. (B.S. in Physics)  
 1990 Beecham Award for Research Excellence. SVM, LSU  
 1997 Aesculapian Lecturer. SVM, LSU  
 1999 Distinguished Faculty Scholar Award. SVM, LSU  
 1999 LSU Distinguished Faculty Award. LSU  
 2004-2011 The Mary Louise Martin Professor. SVM, LSU

### **C. Contributions to Science**

1. I began work on understanding the structure and function of viral glycoprotein K (gK) and the membrane protein UL20. We were the first group to show that gK served important functions in virus cytoplasmic envelopment and virus-induced cell fusion by creating a virus deleted in the gK gene, as well as various gK truncations. Also, we showed for the first time that gK is a structural component of virion particles and functions in virus entry into epithelial cells. Finally, we experimentally demonstrated the membrane topology of gK through the insertion of epitope tags within predicted intracellular and extracellular domains and showed that gK functionally interacted with the membrane protein UL20.
  - a. Foster, T. P., J. M. Melancon, T. L. Olivier, and **K. G. Kousoulas**. 2004. Herpes simplex virus type 1 glycoprotein K and the UL20 protein are interdependent for intracellular trafficking and trans-Golgi network localization. *Journal of Virology* **78**:13262-13277. PMID: 15542677; PMCID: PMC525009.
  - b. Melancon, J. M., P. A. Fulmer, and **K. G. Kousoulas**. 2007. The herpes simplex virus UL20 protein functions in glycoprotein K (gK) intracellular transport and virus-induced cell fusion are independent of UL20 functions in cytoplasmic virion envelopment. *Virology Journal* **4**:120. PMID: 17996071; PMCID: PMC2186317.
  - c. Foster, T. P., V. N. Chouljenko, and **K. G. Kousoulas**. 2008. Functional and physical interactions of the herpes simplex virus type 1 UL20 membrane protein with glycoprotein K. *Journal of Virology* **82**:6310-6323. PMID: 18434401; PMCID: PMC2447060.

2. A major advance in understanding how gK and UL20 may function in gB-mediated membrane fusion was the demonstration that gK interacted directly with gB. These results strongly suggested that syncytial mutations in gK cause membrane fusion by affecting gB through direct binding. Additional work indicated that the amino terminus of gK interacted with gB as an independent domain that could complement in trans gK missing this domain. In this time period, detailed work was also completed to show that gK and UL20 were the most important glycoproteins involved in cytoplasmic virion envelopment, and that amino terminal mutations in gK abrogated entry by the gB-specific receptor paired immunoglobulin-like type-2 receptor alpha, reinforcing the hypothesis that gK functioned in conjunction with gB.
  - a. Chouljenko, V. N., A. V. Iyer, S. Chowdhury, D. V. Chouljenko, and **K. G. Kousoulas**. 2009. The amino terminus of herpes simplex virus type 1 glycoprotein K (gK) modulates gB-mediated virus-induced cell fusion and virion egress. *Journal of Virology* **83**:12301-12313. PMID: 19793812; PMCID: PMC2786757.
  - b. Chouljenko, V. N., A. V. Iyer, S. Chowdhury, J. Kim, and **K. G. Kousoulas**. 2010. The herpes simplex virus type 1 UL20 protein and the amino terminus of glycoprotein K (gK) physically interact with gB. *Journal of Virology* **84**:8596-8606. PMID: 20573833; PMCID: PMC2919038.
  - c. Chowdhury, S., V. N. Chouljenko, M. Naderi, and **K. G. Kousoulas**. 2013. The amino terminus of herpes simplex virus 1 glycoprotein K is required for virion entry via the paired immunoglobulin-like type-2 receptor alpha. *Journal of Virology* **87**:3305-3313. PMID: 23302878; PMCID: PMC3592154.
  
3. The most important results in our HSV-1 work over the years is the demonstration that a deletion of either the entire gK gene or 37 amino acids within the amino terminus of gK abrogates entry into neuronal axoplasms in cell culture, as well as virion infection of ganglionic neurons after ocular infection of mice. Additional exciting results have stemmed from the recent finding that a mutant virus that carries this 37 amino acid deletion is a potent live-attenuated vaccine, since it protected mice against lethal vaginal challenge with both virulent HSV-1 and HSV-2 using only a single immunization. This engineered strain has been recently shown to possess unusual capacity to generate potent immune responses against HSV-1 and HSV-2 infections, as well as other antigens that have been expressed using the virus as a vector.
  - a. David, A. T., A. Saied, A. Charles, R. Subramanian, V. N. Chouljenko, and **K. G. Kousoulas**. 2012. A herpes simplex virus 1 (McKrae) mutant lacking the glycoprotein K gene is unable to infect via neuronal axons and egress from neuronal cell bodies. *mBio* **3**:e00144-00112. PMID: 22829677; PMCID: PMC3413403.
  - b. Saied, A. A., V. N. Chouljenko, R. Subramanian, and **K. G. Kousoulas**. 2014. A replication competent HSV-1(McKrae) with a mutation in the amino-terminus of glycoprotein K (gK) is unable to infect mouse trigeminal ganglia after cornea infection. *Current Eye Research* **39**:596-603. PMID: 24401006.
  - c. Stanfield, B. A., J. Stahl, V. N. Chouljenko, R. Subramanian, A. S. Charles, A. A. Saied, J. D. Walker, and **K. G. Kousoulas**. 2014. A single intramuscular vaccination of mice with the HSV-1 VC2 virus with mutations in the glycoprotein K and the membrane protein UL20 confers full protection against lethal intravaginal challenge with virulent HSV-1 and HSV-2 strains. *PloS One* **9**:e109890. PMID: 25350288; PMCID: PMC4211657.
  - d. Stanfield B. A. and **K. G. Kousoulas**. Herpes simplex vaccines: prospects of live-attenuated HSV vaccines to combat genital and ocular infections. *Curr. Clin. Microbiol. Rep.* 2015 Sep 1;2(3):125-136. Epub 2015 Jul 1.
  - e. Stanfield B. V. N. Chouljenko, R. Veazey, and **K.G. Kousoulas**. 2016. Vaccination of rhesus macaques with the live-attenuated HSV-1 vaccine VC2 stimulates the proliferation of mucosal T cells and germinal center responses resulting in sustained production of highly neutralizing antibodies. *Vaccine* doi:10.1016/j.vaccine.2016.
  - f. Rider, P. J. G., M. Naderi, S. Bergeron, V. N. Chouljenko, M. Brylinksi and K. G. Kousoulas. Cysteines and n-glycosylation sites conserved among all alphaherpesviruses regulate membrane fusion in herpes simplex virus 1 infection. *J Virol.* 2017 Oct 13;91(21). pii: e00873-17. doi: 10.1128/JVI.00873-17. Print 2017 Nov 1.

**Complete List of Published Work in MyBibliography:**

<http://www.ncbi.nlm.nih.gov/sites/myncbi/konstantin.kousoulas.1/bibliography/46559271/public/?sort=date&direction=ascending>



## **D. Research Support**

### **Ongoing Research Support**

Louisiana Board of Regents: Governor's Biotechnology Program. Kousoulas (PI) 07/01/08-06/31/2020  
New modalities for cancer treatment. This grant funds research on the use of herpes simplex virus as a vector for cancer treatment. Role: PI. This is an open-ended, yearly renewed grant.

1 P30 GM110760-01 Cardin (PI) 06/02/14-04/30/18  
Center for Experimental Infectious Disease Research  
This application funds the Center of Biomedical Research Excellence (COBRE) on Experimental Infectious Disease Research (CEIDR) at the Louisiana State University, School of Veterinary Medicine (LSUSVM) in collaboration with the Tulane National Primate Research Center (TNPRC). The program supports core laboratories for next generation sequencing (GeneLab), Protein structure and function, and immunopathology. The program also awards pilot funding (6-7 projects) to researchers pursuing NIH-funded research. Role: Co-PI (transitioned from PI status May 1, 2016).

NIH:NIGMS P20RR016456-07 Kousoulas (PI) 05/01/15-4/30/20  
Louisiana Biomedical Research Network (LBRN)  
This is a multi-institutional training grant focused on selected primarily undergraduate institutions within Louisiana. Support and mentoring for faculty and undergraduate and graduate students is organized through LSU, Baton Rouge providing access to core laboratories and mentoring. Role: Co-Investigator and Director of the Molecular and Cell Biology Core

T32 RR021309 Lackner(PI) 09/22/2015-08/31/2020  
Research Training in Experimental Medicine and Pathology.  
The objective of the program is to prepare veterinarians for independent careers in biomedical research. Role: Faculty Participant and mentor of one T32 Fellow (Natalie Fowlkes).

### **Pending Research Support**

R21:NIH:EY027064-01 Kousoulas (PI) 10/01/2019-09/31/2021  
A novel prophylactic and therapeutic vaccine to combat ocular HSV-1 disease. Role: PI.

### **Completed Research Support**

NIGMS P20 RR020159-10 Kousoulas (PI) 05/01/09-04/30/14  
Center for Experimental Infectious Disease Research  
This application funded a Center of Biomedical Research Excellence (COBRE) on Experimental Infectious Disease Research (CEIDR) at the Louisiana State University, School of Veterinary Medicine (LSUSVM) in collaboration with the Tulane National Primate Research Center (TNPRC). The application contains five projects led by assistant professors as well as support for core facilities.

NIH:NIGMS P20RR016456-07 Klei (PI) 09/25/01-4/30/15  
Louisiana Biomedical Research Network (LBRN)  
This is a multi-institutional training grant focused on selected primarily undergraduate institutions within Louisiana. Support and mentoring for faculty and undergraduate and graduate students is organized through LSU, Baton Rouge providing access to core laboratories and mentoring. Role: Co-Investigator and Director of the Molecular and Cell Biology Core

NIAID: R01AI043000 Kousoulas (PI) 06/01/05-02/31/12  
Genetics and functions of HSV-1 membrane fusion proteins.  
The goal of this research is to investigate the structure and function of the HSV-1 glycoprotein K(gK) and the UL20 membrane protein in virus-induced cell fusion and cytoplasmic virion morphogenesis. Role: PI.

T32 RR021309 Lackner(PI) 09/22/2005-08/31/2015  
Research Training in Experimental Medicine and Pathology.  
The objective of the program is to prepare veterinarians for independent careers in biomedical research. Role: Faculty Participant