
Abbreviated Curriculum Vitae of Investigator

Name: Sergiu Dascalu, PhD

Birthdate: November 14, 1957

Education Background

From-To	Institution	Area of Specialization	Degree
1972-1976	"Mihai Viteazul" Lyceum, Bucharest, Romania	Mathematics and Applied Sciences	Baccalaureate Diploma
1977-1982	Polytechnic University of Bucharest, Romania	Automation and Computers	MS
1993-2001	Dalhousie University, Halifax, Canada	Computer Science	PhD

Major research interests: Software engineering (in particular, software specification, software design, and software processes) and human-computer interaction (in particular, user interface design, visual environments, and simulation environments). Special emphasis is currently given to adapting and creating software engineering and computer-user interaction techniques and tools for improving interdisciplinary research productivity.

Employment (starting with present position)

From-To	Institution	Research areas	Title
2008-present	Univ. of Nevada, Reno, College of Engineering Department of Computer Science and Engineering	Software Engineering Human-Computer Interaction	Associate Professor, Director, Software Engineering Laboratory (SOELA)
2002-2008	Univ. of Nevada, Reno, College of Engineering Department of Computer Science and Engineering	Software Engineering Human-Computer Interaction	Assistant Professor, Director, Software Engineering Laboratory (SOELA)
1993-2001	Dalhousie University, Halifax, Nova Scotia, Canada	Software Engineering Human-Computer Interaction	Lecturer and Research Assistant

Selected Relevant Publications of Sergiu M. Dascalu:

- [1] Quiroz, J., Louis, S., Banerjee, A., and S. Dascalu, (2009). Towards Creative Design Using Collaborative Interactive Genetic Algorithms. Accepted for publication in *Proceedings of the IEEE Congress on Evolutionary Computation (CEC-2009)*, Trondheim, Norway.
- [2] Karam, M., Smedley, T., and S. Dascalu (2008). Unit level test adequacy criteria for visual dataflow languages and a testing methodology. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, November 2008, 18 (1): 1-37.
- [3] Elpern, J. and S. Dascalu (2008). *A Framework for Understanding the Open Source Revolution*, Chapter XIV in *Designing Software-Intensive Systems*, IGI Global, 2008, pp. 439-454.
- [4] Goodman, P., Zou, Q., and S. Dascalu (2008). Framework and implications of virtual neurorobotics. *Frontiers in Neuroscience* 2 (1): 123 – 128.

- [5] Karam, M., Dascalu, S., Safa, H., Santana, R., Z. Koteich (2008). A product-line architecture for web service-based visual composition of web applications. *J. of Systems and Software* 81 (6): 855-867.
- [6] Muhanna, M., Dascalu, S., Harris, F.C., Elfass, S., and M. Karam (2008). Specification and Design Aspects of the Academic Researcher's Assistant (ARA) Software for Mobile Devices. *Proceedings of ACHI-2008*, IEEE Computer Society Press, pp. 95-100.
- [7] Calic, T., Dascalu, S., D. Egbert (2008). Tools for MDA Software Development: Evaluation Criteria and Set of Desirable Features. *Procs. of ITNG-2008*, IEEE Computer Society Press, pp. 44-50.
- [8] Nicolescu, M., Leigh, R., Olenderski, A., Louis, S., Dascalu, S., Miles, C., Quiroz, J., and R. Aleson (2007). A training simulation system with realistic autonomous ship control. *Comp. Intelligence J.* 23 (4): 497-516.
- [9] Goodman, P., Buntha, S., Zou, Q., and S. Dascalu (2007). Virtual neurorobotics to accelerate development of plausible neuromorphic brain architectures, *Frontiers in Neurorobotics* 1 (1): 1-7.
- [10] Quiroz, J., Shankar, A., Louis, S., S. Dascalu (2007). Interactive Genetic Algorithms for User Interface Design. *Procs. of the IEEE Intl. Congress on Evolutionary Comp.*, pp. 1366-1373.
- [11] Dascalu, S., Fritzinger, E., Cooper, K. and N. Debnath (2007). A Software Tool for Requirements Specification: On Using the STORM Environment to Create SRS Documents. *Procs. of the 2nd Intl. Conf. on Software and Data Technologies (ICSOF-2007)*, Barcelona, Spain, pp. 319-326.
- [12] Quiroz, J., Louis, S., and S. Dascalu (2007). Interactive Evolution of XUL User Interfaces. *Procs. of the Genetic and Evolutionary Computation Conference*, London, England, pp. 2151-2158.
- [13] Quiroz, J., Dascalu, S., and S. Louis (2007). Human Guided Evolution of XUL User Interfaces. *Procs. of ACM CHI Intl. Conf. on Human-Factors in Comp. Systems (CHI-2007)*, pp. 2621-2626.
- [14] Shankar, A., Louis, S., Dascalu, S., Hayes, L., and R. Houmanfar (2007). User-Context for Adaptive User Interfaces. *Procs. of the 12th ACM Intl. Conf. on Intelligent User Interfaces*, pp. 321-324.
- [15] Dascalu, S., Buntha, S., Saru, D. and N. Debnath (2006). Software tool for naval surface warfare simulation and training. *J. of Computational Methods in Sci. and Engineering* 6 (5-6) s2: 427-444.
- [16] Karam, M., Dascalu, S., and R.H. Hazime (2006). Challenges and opportunities for improving code-based testing of graphical user interfaces. *J. of Comp. Methods in Sc. and Eng* 6 (5-6) s2: 379-388.
- [17] Yi, B., Harris, F.C., Jr., Dascalu, S., and A. Erol (2006). User interface aspects of a human-hand simulation system. *J. for Systemics, Cybernetics & Informatics* 3 (5): 77-83.
- [18] Dascalu, S. and S. Buntha (2006). Simulation Software for Naval Surface Warfare Training. *Procs. of the 6th World Automation Congress (WAC-2006)*, pp. 1-7.
- [19] Dascalu, S., Fritzinger, E., Debnath, N., O. Akinwale (2006). STORM: Software Tool for the Organization of Requirements Modeling. *EIT-2006*, IEEE Computer Society Press, pp. 250-255.
- [20] Dascalu, S., Hao, N., and N. Debnath (2006). Design Patterns Automation with Template Library. *Procs. of the IEEE ISSPIT-2006 Conf.*, Athens, Greece, IEEE Comp. Society Press, pp. 699-705.
- [21] Dascalu, S., Brown, N., Okamoto, S., Buntha, S., and N. Chawla (2006). Crown Vision: Metrics Visualization for Project Management. *Procs. of CATA-2006*, Seattle, WA, pp. 246-253.
- [22] Dascalu, S., Varol, Y., Harris, F.C., Jr., and B. Westphal (2005). Computer Science Capstone Course Senior Projects: From Project Idea to Prototype Implementation. *Proceedings of the IEEE FIE-2005 Frontiers in Education Conf.*, Indianapolis, IN, pp. S3J/1-6.

- [5] Tsodyks, M. & Markram, H. (1997) The neural code between neocortical pyramidal neurons depends on neurotransmitter release probability. *PNAS*, 94; 719-723.
- [6] Markram, H., Lübke, J., Frotscher, M. & Sakmann, B (1997) Regulation of synaptic efficacy by coincidence of postsynaptic APs and EPSPs. *Science*, 275; 213-215.
- [7] Markram, H., Lübke, J., Frotscher, M., Roth, A., & Sakmann, B (1997) Physiology and anatomy of synaptic connections between thick tufted pyramidal neurones in the developing rat neocortex. *Journal of Physiology (Lond.)*, 500; 409-440.
- [8] Markram, H (1997) A network of tufted layer 5 pyramidal neurons. *Cerebral Cortex* 7(6); 523-533.
- [9] Gerstner, W., Kreiter, A.K., Markram, H. & Herz, A.V.M. (1997) Neural codes: Firing rates and beyond. *Proceedings of the National Academy of Sciences of the USA*, 94, 12740-12741.
- [10] Tsodyks M, Pawleslik K & Markram H. (1998) Neural networks with dynamic synapses. *Neural Computation*, 10, 821-835 (1998).
- [11] Markram, H, Tsodyks M & Wang Y. Differential signaling via the same axon from neocortical layer 5 pyramidal neurons. *Proceedings of the National Academy of Sciences of the USA*, 95, 5323-5328.
- [12] Markram, H., Gupta, A., Wang, Y., Uziel, A. & Tsodyks, M., (1998). Information processing with Frequency Sensitive Synapses. *Neurobiology of Learning and Memory*, 70, 101-112.
- [13] Henry Markram, Misha Tsodyks and Dimitri Pikus (1998) Potential for multiple mechanisms, phenomena and algorithms for synaptic plasticity at single synapses. *Neuropharmacology*, 37. 489-500.
- [14] Gupta A, Wang Y, Markram H. Organizing principles for a diversity of GABAergic interneurons and synapses in the neocortex. *Science* 2000 Jan 14 287:5451 273-8.
- [15] Toledo-Rodriguez M, Blumenfeld B, Wu C, Luo J, Attali B, Goodman PH & Markram H. (2004) Correlation maps allow neuronal electrical properties to be predicted from single-cell gene expression profiles in rat neocortex. *Cerebral Cortex* 2004; 14(12):1310-27.
- [16] Maciokas JB, Goodman PH, Kenyon JL, Toledo-Rodriguez M., Markram H. Accurate dynamical model of interneuronal GABAergic channel physiologies. *Neurocomputing* 2005; 65, 5-14.
- [17] Toledo-Rodriguez M., Goodman PH, Illic M., Wu C.Z., Markram H. Neuropeptide and calcium-binding protein gene expression profiles predict neuronal anatomical type in the juvenile rat. *J Physiology* 2005; 567, 401-413.
- [18] Silberberg G, Bethge M, Markram H, Pawelzik K, Tsodyks M. Dynamics of population rate codes in ensembles of neocortical neurons. *J Neurophysiol.* 2004 Feb;91(2):704-9.
- [19] Silberberg G, Wu C, Markram H. Synaptic dynamics control the timing of neuronal excitation in the activated neocortical microcircuit. *J Physiol.* 2004 Apr 1;556(Pt 1):19-27. Epub 2004 Feb 20.
- [20] Wang Y, Markram H, Goodman PH, Berger T., Ma J., Goldman-Rakic PS. Heterogeneity in the pyramidal network of the medial prefrontal cortex.. *Nature Neuroscience* 2006 Apr;9(4):534-42. PMID: 16547512
- [21] Markram H. The blue brain project. *Nat Rev Neurosci.* 2006 Feb;7(2):153-60.
- [22] Silberberg G, Markram H. Disynaptic inhibition between neocortical pyramidal cells mediated by Martinotti cells. *Neuron.* 2007 Mar 1;53(5):735-46.
- [23] Rinaldi T, Perrodin C, Markram H. Hyper-connectivity and hyper-plasticity in the medial prefrontal cortex in the valproic Acid animal model of autism. *Front Neural Circuits.* 2008;2:4.
- [24] Markram K, Rinaldi T, La Mendola D, Sandi C, Markram H. Abnormal fear conditioning and amygdala processing in an animal model of autism. *Neuropsychopharmacology.* 2008 Mar;33(4):901-12.
- [25] Melamed O, Barak O, Silberberg G, Markram H, Tsodyks M. Slow oscillations in neural networks with facilitating synapses. *J Comput Neurosci.* 2008 Oct;25(2):308-16.
- [26] Rinaldi T, Silberberg G, Markram H. Hyperconnectivity of local neocortical microcircuitry induced by prenatal exposure to valproic acid. *Cereb Cortex.* 2008 Apr;18(4):763-70.
- [27] Hines ML, Markram H, Schürmann F. Fully implicit parallel simulation of single neurons. *J Comput Neurosci.* 2008 Dec; 25(3):439-48.

Abbreviated Curriculum Vitae of Investigator

Name: Florian Mormann, MD, PhD

Birthdate: January 4, 1973

Education Background

From-To	Institution	Area of Specialization	Degree
1991-1993	University of Karlsruhe, Germany	Physics	BA Physics
1993-1998	University of Bonn, Germany	Physics	MS Physics
1994-2001	Universities of Bonn and Cologne, Germany	Medicine	MD
1998-2003	University of Bonn	Physics	PhD Physics
2006-2009	California Institute of Technology Fellowship from the European Community	Neuroscience (<i>in vivo</i> recording)	Fellowship

Major research interests: Understanding the neurobiology of perception and memory from electrophysiological recordings of single-neuron activity and local field potentials in humans. Mechanisms of epileptic seizure generation.

Employment (starting with present position)

From-To	Institution	Research area	Title
2009-present	Univ. of Bonn, Germany Dept. of Epileptology	Cognitive Electrophysiology	Research Fellow
2006-2009	Calif. Inst. of Tech. School of Medicine	Cognitive Electrophysiology	Postdoctoral Scholar
2003-2006	Univ. of Bonn, Germany Dept. of Epileptology	Clinical and Cognitive Electrophysiology	Postdoctoral Scholar Clinical Resident
1998-2003	Univ. of Bonn, Germany Dept. of Epileptology Dept of Physics	Human Electrophysiology	Assistant Researcher

Selected Relevant Publications of Florian Mormann:

- [1] Mormann F, Lehnertz K, David P, E. Elger C. Mean phase coherence as a measure for phase synchronization and its application to the EEG of epilepsy patients. *Physica D: Nonlinear Phenomena* 2000; 144 (3-4): 358-369.
- [2] Lehnertz K, Andrzejak RG, Arnhold J, Kreuz T, Mormann F, Rieke C, et al. Nonlinear EEG analysis in epilepsy: its possible use for interictal focus localization, seizure anticipation, and prevention. *J Clin Neurophysiol* 2001; 18 (3): 209-22.

- [3] Andrzejak RG, Lehnertz K, Mormann F, Rieke C, David P, Elger CE. Indications of nonlinear deterministic and finite-dimensional structures in time series of brain electrical activity: dependence on recording region and brain state. *Phys Rev E Stat Nonlin Soft Matter Phys* 2001; 64 (6 Pt 1): 061907.
- [4] Mormann F, Kreuz T, Andrzejak RG, David P, Lehnertz K, Elger CE. Epileptic seizures are preceded by a decrease in synchronization. *Epilepsy Res* 2003; 53 (3): 173-85.
- [5] Mormann F, Fell J, Axmacher N, Weber B, Lehnertz K, Elger CE, et al. Phase/amplitude reset and theta-gamma interaction in the human medial temporal lobe during a continuous word recognition memory task. *Hippocampus* 2005; 15 (7): 890-900.
- [6] Sowa R, Chernihovskyi A, Mormann F, Lehnertz K. Estimating phase synchronization in dynamical systems using cellular nonlinear networks. *Phys Rev E Stat Nonlin Soft Matter Phys* 2005; 71 (6 Pt 1): 061926.
- [7] Chernihovskyi A, Mormann F, Müller M, Elger CE, Baier G, Lehnertz K. EEG analysis with nonlinear excitable media. *J Clin Neurophysiol* 2005; 22 (5): 314-29.
- [8] Weber B, Hoppe C, Faber J, Axmacher N, Fliessbach K, Mormann F, et al. Association between scalp hair-whorl direction and hemispheric language dominance. *Neuroimage* 2006; 30 (2): 539-43.
- [9] Müller A, Osterhage H, Sowa R, Andrzejak RG, Mormann F, Lehnertz K. A distributed computing system for multivariate time series analyses of multichannel neurophysiological data. *J Neurosci Methods* 2006; 152 (1-2): 190-201.
- [10] Mormann F, Fernández G, Klaver P, Weber B, Elger CE, Fell J. Declarative memory formation in hippocampal sclerosis: an intracranial event-related potentials study. *Neuroreport* 2007; 18 (4): 317-21.
- [11] Lehnertz K, Mormann F, Osterhage H, Müller A, Prusseit J, Chernihovskyi A, et al. State-of-the-art of seizure prediction. *J Clin Neurophysiol* 2007; 24 (2): 147-53.
- [12] Osterhage H, Mormann F, Wagner T, Lehnertz K. Measuring the directionality of coupling: phase versus state space dynamics and application to EEG time series. *Int J Neural Syst* 2007; 17 (3): 139-48.
- [13] Axmacher N, Mormann F, Fernández G, Cohen MX, Elger CE, Fell J. Sustained neural activity patterns during working memory in the human medial temporal lobe. *J Neurosci* 2007; 27 (29): 7807-16.
- [14] Feldt S, Osterhage H, Mormann F, Lehnertz K, Zochowski M. Internetwork and intranetwork communications during bursting dynamics: applications to seizure prediction. *Phys Rev E Stat Nonlin Soft Matter Phys* 2007; 76 (2 Pt 1): 021920.
- [15] Osterhage H, Mormann F, Staniek M, Lehnertz K. Measuring synchronization in the epileptic brain: A comparison of different approaches. *Int. J. Bifur. Chaos* 2007; 17 (10): 3539.
- [16] Mormann F, Koch C. Neural correlates of consciousness. *Scholarpedia* 2007; 2 (12): 1740.
- [17] Semmler A, Hermann S, Mormann F, Weberpals M, Paxian SA, Okulla T, et al. Sepsis causes neuroinflammation and concomitant decrease of cerebral metabolism. *J Neuroinflammation* 2008; 5: 38.
- [18] Osterhage H, Mormann F, Wagner T, Lehnertz K. Detecting directional coupling in the human epileptic brain: limitations and potential pitfalls. *Phys Rev E Stat Nonlin Soft Matter Phys* 2008; 77 (1 Pt 1): 011914.
- [19] Mormann F, Osterhage H, Andrzejak RG, Weber B, Fernández G, Fell J, et al. Independent delta/theta rhythms in the human hippocampus and entorhinal cortex. *Front Hum Neurosci* 2008; 2: 3.
- [20] Döhler F, Mormann F, Weber B, Elger CE, Lehnertz K. A cellular neural network based method for classification of magnetic resonance images: towards an automated detection of hippocampal sclerosis. *J. Neurosci. Methods* 2008; 170 (2): 324-331.
- [21] Mormann F, Kornblith S, Quiroga RQ, Kraskov A, Cerf M, Fried I, et al. Latency and selectivity of single neurons indicate hierarchical processing in the human medial temporal lobe. *J. Neurosci* 2008; 28 (36): 8865-8872.
- [22] Mormann F. Seizure prediction. *Scholarpedia* 2008; 3 (10): 5770.
- [23] Milstein J, Mormann F, Fried I, Koch C. Neuronal shot noise and Brownian $1/f^2$ behavior in the local field potential. *PLoS ONE* 2009; 4 (2): e4338.

Enter name of Organization: Board of Regents NSHE obo Univer

* Start Date:	10/01/2009	* End Date:	09/30/2010
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Budget Period 1

A. Senior/Key Person

Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	* Funds Requested (\$)
1.	Prof.	Philip	Holden		Goodman	M.D.				69,900.00	16,776.00	86,676.00
2.	Dr.	Frederick			Harris	Jr.				10,000.00	400.00	10,400.00
3.	Dr.	Sergiu			Dascalu	PhD				5,000.00	200.00	5,200.00
4.	Dr.	Henry			Markram	PhD				16,000.00	0.00	16,000.00
5.	Dr.	Florian			Mormann	MD				10,000.00	0.00	10,000.00
6.												
7.												
8.												
9.	Total Funds requested for all Senior Key Persons in the attached file											
												102,276
												128,276.00
												Total Senior/Key Person

Additional Senior Key Persons:

B. Other Personnel

Number of Personnel	* Project Role	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	* Funds Requested (\$)
	Post Doctoral Associates						
2	Graduate Students		18.00		5,667.00	0.00	5,667.00
	Undergraduate Students						
	Secretarial/Clerical						
2	Total Number Other Personnel						5,667.00
	Total Salary, Wages and Fringe Benefits (A+B)						133,943.00

Close Form

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 1

* ORGANIZATIONAL DUNS: 1465154600000

* Budget Type: ☒ Project ☐ Subaward/Consortium

Enter name of Organization: Board of Regents NSHE obo Univ

* Start Date: 10/01/2009 * End Date: 09/30/2010 Budget Period 1

C. Equipment Description

List items and dollar amount for each item exceeding \$5,000

Equipment item	* Funds Requested (\$)
1. <input type="text"/>	<input type="text"/>
2. <input type="text"/>	<input type="text"/>
3. <input type="text"/>	<input type="text"/>
4. <input type="text"/>	<input type="text"/>
5. <input type="text"/>	<input type="text"/>
6. <input type="text"/>	<input type="text"/>
7. <input type="text"/>	<input type="text"/>
8. <input type="text"/>	<input type="text"/>
9. <input type="text"/>	<input type="text"/>
10. <input type="text"/>	<input type="text"/>
11. Total funds requested for all equipment listed in the attached file	<input type="text"/>
Total Equipment	<input type="text"/>

Additional Equipment:

Add Attachment

Delete Attachment

View Attachment

D. Travel

- Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions)
- Foreign Travel Costs

Funds Requested (\$)

4,200.00

3,800.00

Total Travel Cost

8,000.00

E. Participant/Trainee Support Costs

- Tuition/Fees/Health Insurance
- Stipends
- Travel
- Subsistence
- Other

Funds Requested (\$)

6,598.00

2

Number of Participants/Trainees

Total Participant/Trainee Support Costs

6,598.00

RESEARCH & RELATED Budget (C-E) (Funds Requested)

Close Form

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 1

* ORGANIZATIONAL DUNS: 1465154600000

* Budget Type: ☒ Project ☐ Subaward/Consortium

Enter name of Organization: Board of Regents NSHE obo Univ

* Start Date: 10/01/2009 * End Date: 09/30/2010 Budget Period 1

F. Other Direct Costs

	Funds Requested (\$)
1. Materials and Supplies	5,000.00
2. Publication Costs	
3. Consultant Services	26,000
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8. conferences & speaker hosting (no food or drink)	5,700.00
9.	
10.	
Total Other Direct Costs	10,700.00

36700

G. Direct Costs

Funds Requested (\$)

Total Direct Costs (A thru F) 159,241.00

H. Indirect Costs

Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	* Funds Requested (\$)
1. Modified total direct costs	40.50	222,398.00	63,157.00
2.			
3.			
4.			
Total Indirect Costs			63,157.00

Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

I. Total Direct and Indirect Costs

Funds Requested (\$)

Total Direct and Indirect Institutional Costs (G + H) 222,398.00

J. Fee

Funds Requested (\$)

K. * Budget Justification BUDG JUSTIFICATION Goodman ONRcontin20
(Only attach one file.)

Add Attachment

Delete Attachment

View Attachment

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 2

* ORGANIZATIONAL DUNS: 1465154600000

* Budget Type: ☒ Project ☐ Subaward/Consortium

Enter name of Organization: Board of Regents NSHE obo Univer

* Start Date: 10/01/2010 * End Date: 09/30/2011 Budget Period 2

A. Senior/Key Person

Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	* Funds Requested (\$)
1. Prof.	Philip	Holden	Goodman	M.D.	PD/PI					93,200.00	22,368.00	115,568.00
2. Dr.	Frederick		Harris	Jr.	Coinvestigator					10,000.00	400.00	10,400.00
3. Dr.	Sergiu		Dasalu	PhD	Coinvestigator					5,000.00	200.00	5,200.00
4. Dr.	Henry		Markram	PhD	Consulting coinv.					16,000.00	0.00	16,000.00
5. Dr.	Floxi		Mormann	PhD	Consulting coinv.					10,000.00	0.00	10,000.00
6.												
7.												
8.												

9. Total Funds requested for all Senior Key Persons in the attached file

Total Senior/Key Person

157,168.00

Additional Senior Key Persons:

View Attachment

Update Attachment

Add Attachment

131,168

B. Other Personnel

* Number of Personnel	* Project Role	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	* Funds Requested (\$)
	Post Doctoral Associates						
2	Graduate Students	18.00			25,623.00	0.00	25,623.00
	Undergraduate Students						
	Secretarial/Clerical						
2	Total Number Other Personnel						25,623.00

Total Other Personnel

25,623.00

Total Salary, Wages and Fringe Benefits (A+B)

182,791.00

Close Form

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 2

* ORGANIZATIONAL DUNS: 1465154600000

* Budget Type: ☒ Project ☐ Subaward/Consortium

Enter name of Organization: Board of Regents NSHE obo Unive

* Start Date: 10/01/2010 * End Date: 09/30/2011 Budget Period 2

C. Equipment Description

List items and dollar amount for each item exceeding \$5,000

Equipment item	* Funds Requested (\$)
1. <input type="text"/>	<input type="text"/>
2. <input type="text"/>	<input type="text"/>
3. <input type="text"/>	<input type="text"/>
4. <input type="text"/>	<input type="text"/>
5. <input type="text"/>	<input type="text"/>
6. <input type="text"/>	<input type="text"/>
7. <input type="text"/>	<input type="text"/>
8. <input type="text"/>	<input type="text"/>
9. <input type="text"/>	<input type="text"/>
10. <input type="text"/>	<input type="text"/>
11. Total funds requested for all equipment listed in the attached file	<input type="text"/>
Total Equipment	<input type="text"/>

Additional Equipment:

Add Attachment

Delete Attachment

View Attachment

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (incl. Canada, Mexico and U.S. Possessions)	<input type="text" value="4,200.00"/>
2. Foreign Travel Costs	<input type="text" value="3,800.00"/>
Total Travel Cost	<input type="text" value="8,000.00"/>

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance	<input type="text" value="6,598.00"/>
2. Stipends	<input type="text"/>
3. Travel	<input type="text"/>
4. Subsistence	<input type="text"/>
5. Other <input type="text"/>	<input type="text"/>

<input type="text" value="2"/> Number of Participants/Trainees	Total Participant/Trainee Support Costs	<input type="text" value="6,598.00"/>
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RESEARCH & RELATED Budget (C-E) (Funds Requested)

Close Form

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 2

* ORGANIZATIONAL DUNS: 1465154600000

* Budget Type: ☒ Project ☐ Subaward/Consortium

Enter name of Organization: Board of Regents NSHE obo Univer

* Start Date: 10/01/2010 * End Date: 09/30/2011 Budget Period 2

F. Other Direct Costs

Funds Requested (\$)

1. Materials and Supplies	5,000.00
2. Publication Costs	
3. Consultant Services	26,000
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8. conferences & speaker hosting (no food or drink)	5,700.00
9.	
10.	

Total Other Direct Costs 10,700.00

36,700

G. Direct Costs

Funds Requested (\$)

Total Direct Costs (A thru F) 208,089.00

H. Indirect Costs

Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	* Funds Requested (\$)
1. Modified total direct costs	40.50	204,791.00	82,940.00
2.			
3.			
4.			

Total Indirect Costs 82,940.00

Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

I. Total Direct and Indirect Costs

Funds Requested (\$)

Total Direct and Indirect Institutional Costs (G + H)

291,029.00

J. Fee

Funds Requested (\$)

K. * Budget Justification BUDG JUSTIFICATION Goodman ONRcontin2

(Only attach one file.)

Add Attachment

Delete Attachment

View Attachment

1465154600000

☐ Subaward/Consortium

Board of Regents NSHE Ohio Univ

date: 10/01/2011

* End Date: 09/30/2012

Budget Period 3

[illegible][illegible]

.....

Add Attachment

NEW! 1300mm

* Number of Personnel	* Project Role		Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	* Funds Requested (\$)
	Post Doctoral Associates							
2	Graduate Students		18.00			42,000.00	0.00	42,000.00
	Undergraduate Students							
	Secretarial/Clerical							
	Total Number Other Personnel							42,000.00

173,168.00

Close Form

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 3

* ORGANIZATIONAL DUNS: 1465154600000

* Budget Type: ☒ Project ☐ Subaward/Consortium

Enter name of Organization: Board of Regents NSHE obo Univer

* Start Date: 10/01/2011 * End Date: 09/30/2012 Budget Period 3

C. Equipment Description

List items and dollar amount for each item exceeding \$5,000

Equipment item	* Funds Requested (\$)
1. <input type="text"/>	<input type="text"/>
2. <input type="text"/>	<input type="text"/>
3. <input type="text"/>	<input type="text"/>
4. <input type="text"/>	<input type="text"/>
5. <input type="text"/>	<input type="text"/>
6. <input type="text"/>	<input type="text"/>
7. <input type="text"/>	<input type="text"/>
8. <input type="text"/>	<input type="text"/>
9. <input type="text"/>	<input type="text"/>
10. <input type="text"/>	<input type="text"/>
11. Total funds requested for all equipment listed in the attached file	<input type="text"/>
Total Equipment	<input type="text"/>

Additional Equipment:

Add Attachment

Delete Attachment

View Attachment

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions)	<input type="text" value="4,200.00"/>
2. Foreign Travel Costs	<input type="text" value="3,800.00"/>
Total Travel Cost	<input type="text" value="8,000.00"/>

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance	<input type="text" value="6,598.00"/>
2. Stipends	<input type="text"/>
3. Travel	<input type="text"/>
4. Subsistence	<input type="text"/>
5. Other <input type="text"/>	<input type="text"/>

<input type="text" value="2"/> Number of Participants/Trainees	Total Participant/Trainee Support Costs	<input type="text" value="6,598.00"/>
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RESEARCH & RELATED Budget {C-E} (Funds Requested)

Close Form

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 3

* ORGANIZATIONAL DUNS: 1465154600000

* Budget Type: ☒ Project ☐ Subaward/Consortium

Enter name of Organization: Board of Regents NSHE obo Univ

* Start Date: 10/01/2011 * End Date: 09/30/2012 Budget Period 3

F. Other Direct Costs

Funds Requested (\$)

1. Materials and Supplies	5,000.00	
2. Publication Costs		
3. Consultant Services	26,000.00	
4. ADP/Computer Services		
5. Subawards/Consortium/Contractual Costs		
6. Equipment or Facility Rental/User Fees		
7. Alterations and Renovations		
8. conferences & speaker hosting (no food or drink)	5,700.00	
9.		
10.		
Total Other Direct Costs		36,700.00

G. Direct Costs

Funds Requested (\$)

Total Direct Costs (A thru F) 224,466.00

H. Indirect Costs

Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	* Funds Requested (\$)
1. Modified total direct costs	40.50	221,168.00	89,573.00
2.			
3.			
4.			
Total Indirect Costs			89,573.00

Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

I. Total Direct and Indirect Costs

Funds Requested (\$)

Total Direct and Indirect Institutional Costs (G + H) 314,039.00

J. Fee

Funds Requested (\$)

K. * Budget Justification BUDG JUSTIFICATION Goodman ONRcontin20

(Only attach one file.)

Add Attachment

Delete Attachment

View Attachment

RESEARCH & RELATED BUDGET - Cumulative Budget

	Totals (\$)
Section A, Senior/Key Person	364,612.00
Section B, Other Personnel	73,290.00
Total Number Other Personnel	6
Total Salary, Wages and Fringe Benefits (A+B)	437,902.00
Section C, Equipment	
Section D, Travel	24,000.00
1. Domestic	12,600.00
2. Foreign	11,400.00
Section E, Participant/Trainee Support Costs	19,794.00
1. Tuition/Fees/Health Insurance	19,794.00
2. Stipends	
3. Travel	
4. Subsistence	
5. Other	
6. Number of Participants/Trainees	6
Section F, Other Direct Costs	110,100.00
1. Materials and Supplies	15,000.00
2. Publication Costs	
3. Consultant Services	78,000.00
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8. Other 1	17,100.00
9. Other 2	
10. Other 3	
Section G, Direct Costs (A thru F)	591,796.00
Section H, Indirect Costs	235,670.00
Section I, Total Direct and Indirect Costs (G + H)	827,466.00
Section J, Fee	

Budget Justification

Salaries:

1. **Goodman, Philip** (see also Biosketch). 30-40% FTE. Dr. Goodman will be responsible for: (1) oversight of the project as a whole, (2) overall design of simulation experiments and robotics, (2) calibration (below) with Drs. Markram and Mormann, (3) statistical analyses, and (4) reporting to ONR. Based on experience with current ONR grant and two prior federally-funded neural network projects, 30-40% time will be needed to accomplish the stated goals. During year 1, funding should be available from another source (DARPA SyNAPSE) with synergistic overlap sufficient to provide 10% offload of salary during that first year; this is redistributed to offset costs of essential consultancies and studentships.
2. **Harris Jr, Frederick** (see also Biosketch). Partial summer salary. \$10,000/year. Dr. Harris will be responsible for (1) oversight of updating and maintaining the Beowulf distributed processing hardware system, (2) oversight of code development for the parallel-processing simulation software environment, and (3) recruiting, training, and directing of CS graduate students. Throughout the year Dr. Harris will maintain involvement by reporting at the lab team conferences, meeting weekly with each of the CS students to review progress and code planning, and will be involved in the authoring of papers and attending ONR-related meetings with Dr. Goodman.
3. **Dascalu, Sergiu** (see also Biosketch). Partial summer salary. \$5,000/year. Based on his expertise in the human-computer interface (and 2007 & 2008 co-publications with Dr. Goodman), Dr. Dascalu will be responsible for (1) suggesting and developing key innovations in Virtual Neurorobotics, and (2) recruiting, training, and directing a CS graduate student to implement this innovation. Throughout the year Dr. Dascalu will maintain involvement by reporting at the lab team conferences, meeting regularly with the CS graduate student, and attending ONR-related meetings with Dr. Goodman.
4. **Markram, Henry** (see also Biosketch). \$16-24,000/year. Based on our previous experience, it is absolutely essential that the physiologist be directly involved with the simulation team to maximize biological realism; multi-electrode brain slice recording is performed at Dr. Markram's laboratory in Switzerland, and Dr. Goodman works with Dr. Markram to transform the biological measurements into parameters used for ONR simulations purposes. This has led to numerous high-profile joint publications over the past 6 years. This will also provide Dr. Markram the opportunity to coordinate future UNR and EPFL Blue Brain simulations and joint visualization projects. Interactions include email and ftp data exchange, conferences, and site visits.
5. **Mormann, Florian** (see also Biosketch). \$10-12,000/year. In order to calibrate our robotic brain model and expand its functionality to approximate human decision making, it will be essential to have access to neural multiunit recordings from awake, behaving *human* subjects. Dr. Mormann will be able to provide this data, based on careful coordination of decision making experiments with Dr. Goodman, in order to address critical simulation design issues. The first year will involve planning of experiments while Dr. Mormann completes construction of his experimental setup, and the second and third years will involve the conduct of experiments and joint analysis of data. On a regular basis, Dr. Mormann will participate via video teleconference, and will plan to meet at least annually with Dr. Goodman in person through at a UNR or Univ. of Bonn site visit, and/or during a professional conference for presentation of findings. In addition to passive recording during psychophysical experiments, this grant will support planning by Drs. Mormann and Goodman for possible interventional human subjects research such as intranasal oxytocin effects on trust and learning (the actual human subjects research would be outside the scope of the ONR proposal).
6. **Hardware and Software Engineering Graduate Students** 2 students, half-time during the academic year, full-time during summer, co-funded by ONR and UNR. One student will focus on

Consultants

Per PI
go to

design and implementation of brain models, the other on programming and enhancing the neuro-robotics environment.

Supplies and Materials

7. **Computer hardware supplies.** Include: wiring, switching, power supplies, backup devices, laboratory PCs to interface with supercomputer clusters, and addition or replacement of components not covered by warranty (e.g., hard drives, processing and memory chips).
8. **Research/Processing Supplies.** Include: miscellaneous office, printing, and computer supplies, lab textbooks and technical journal subscriptions, photocopying of research documents and ONR reports, conference registration fees, and publication costs.

Travel (reflects estimated government rates for hotels, per diem, and transportation)

9. **Goodman, Philip.** \$4700. Dr. Goodman attend the annual ONR investigator meeting and a relevant neuroscience meeting. Dr. Goodman will visit the Univ. of Bonn once per year to coordinate research goals and data analysis.
10. **Harris, Frederick.** \$1400. Dr. Harris (or a designated student) will attend either an ONR workshop or a society meeting targeted at enhancing the development of the Beowulf system.
11. **Mormann, Florian.** \$\$1900. Dr. Mormann will attend the annual ONR investigator meeting, timed so as to coordinate with a site visit with Dr. Goodman at the UNR lab or at a professional society meeting.

Other Direct Costs

12. **Tuition.** (6 units per semester) Tuition will be provided in accordance with UNR policies for student research assistance ships. UNR also requires that the RAship pay for student health insurance.
13. **Licenses, operating, hosting.** Includes: limited site licenses for Matlab, C-language compilers, Systat, word processing and data management software; computer connection and security services; and logistical hosting and consultation expenses related to invited consultants, speakerships, and project-specific journal clubs, and group meetings. ***The funds provided by ONR will not be used for food or beverages***

Other Support:

14. **The UNR Vice President for Research** is able to supply in-kind support for graduate students of \$36,333 during the first year, and \$16,377 during the second year (due to state budget shortfalls, no third-year in-kind was offered).
15. **DARPA SyNAPSE** will announce, by September 2009, its decision to fund Phase I of that project. UNR is a partner to the HRL team, engaged to provide recommendations on biologically realistic architectures to be instantiated into a customized neuromorphic chips. It is anticipated that funding from DARPA can offset 10% of Dr. Goodman's first-year salary, as indicated below. (UNR has not yet been included in plans for Phase II of SyNAPSE, so salary is only reduced for the first year.)
16. **NIH.** Dr. Harris plans to apply to the NIH program PAR-08-010, "Continued Development and Maintenance of Software (R01)", for funding in late 2010 or early 2011. This would primarily provide graduate student support of NCS enhancements necessary to disseminate, maintain, and provide consultation to external scientists. No support would be included for Dr. Goodman.

VII.1 Budget Justification

Salaries:

1. **Goodman, Philip** (see also Biosketch). 30-40% FTE. Dr. Goodman will be responsible for: (1) oversight of the project as a whole, (2) overall design of simulation experiments and robotics, (2) calibration (below) with Drs. Markram and Mormann, (3) statistical analyses, and (4) reporting to ONR. Based on experience with current ONR grant and two prior federally-funded neural network projects, 30-40% time will be needed to accomplish the stated goals. During year 1, funding may be available from another source (DARPA SyNAPSE) with synergistic overlap sufficient to provide 10% offload of salary during that first year. *Does DARPA know about this?*
2. **Harris Jr, Frederick** (see also Biosketch). Partial summer salary. \$10,000/year. Dr. Harris will be responsible for (1) oversight of updating and maintaining the Beowulf distributed processing hardware system, (2) oversight of code development for the parallel-processing simulation software environment, and (3) recruiting, training, and directing of CS graduate students. Throughout the year Dr. Harris will maintain involvement by reporting at the lab team conferences, meeting weekly with each of the CS students to review progress and code planning, and will be involved in the authoring of papers and attending ONR-related meetings with Dr. Goodman.
3. **Dascalu, Sergiu** (see also Biosketch). Partial summer salary. \$5,000/year. Based on his expertise in the human-computer interface (and 2007 & 2008 co-publications with Dr. Goodman), Dr. Dascalu will be responsible for (1) suggesting and developing key innovations in Virtual Neurorobotics, and (2) recruiting, training, and directing a CS graduate student to implement this innovation. Throughout the year Dr. Dascalu will maintain involvement by reporting at the lab team conferences, meeting regularly with the CS graduate student, and attending ONR-related meetings with Dr. Goodman.
4. **Markram, Henry** (see also Biosketch). \$16,000/year. Based on our previous experience, it is absolutely essential that the physiologist be directly involved with the simulation team to maximize biological realism. This will also provide Dr. Markram the opportunity to coordinate UNR and EPFL Blue Brain simulations and joint visualization projects. Interactions include email and ftp data exchange, conferences, and site visits. A consulting agreement from UNR with BMI approval will provide the equivalent of approximately 300 consulting hours per year.
5. **Mormann, Florian** (see also Biosketch). \$10,000/year. In order to calibrate our robotic brain model and expand its functionality to approximate human decision making, it will be essential to have access to neural multiunit recordings from awake, behaving human subjects. Dr. Mormann will be able to provide this data, based on careful coordination of decision making experiments with Dr. Goodman, in order to address critical simulation design issues. The first year will involve planning of experiments while Dr. Mormann completes construction of his experimental setup, and the second and third years will involve the conduct of experiments and joint analysis of data. On a regular basis, Dr. Mormann will participate via video teleconference, and will plan to meet at least annually with Dr. Goodman in person through at a UNR or Univ. of Bonn site visit, and/or during a professional conference for presentation of findings.
6. **Hardware and Software Engineering Graduate Students** 2 students, half-time during the academic year, full-time during summer, co-funded by ONR and UNR. One student will focus on design and implementation of brain models, the other on programming and enhancing the neuro-robotics environment.

Supplies and Materials

7. **Computer hardware supplies.** Include: wiring, switching, power supplies, backup devices, laboratory PCs to interface with supercomputer clusters, and addition or replacement of components not covered by warranty (e.g., hard drives, processing and memory chips).
8. **Research/Processing Supplies.** Include: miscellaneous office, printing, and computer supplies, lab textbooks and technical journal subscriptions, photocopying of research documents and ONR reports, conference registration fees, and publication costs.

Travel (reflects estimated government rates for hotels, per diem, and transportation)

9. **Goodman, Philip.** Dr. Goodman attend the annual ONR PI meeting and a relevant neuroscience meeting. Dr. Goodman will visit the Univ. of Bonn once per year to coordinate research goals and data analysis.
10. **Harris, Frederick.** Dr. Harris (or a designated student) will attend either an ONR workshop or a society meeting targeted at enhancing the development of the Beowulf system.
11. **Mormann, Florian.** Dr. Mormann will attend the annual ONR PI meeting, and conduct either a site visit to the UNR lab or coordinate a meeting with Dr. Goodman at a professional society meeting.

Other Direct Costs

12. **Tuition.** Tuition will be provided in accordance with UNR policies for student research assistance ships.
13. **Licenses, operating, hosting.** Includes: limited site licenses for Matlab, C-language compilers, Systat, word processing and data management software; computer connection and security services; and hosting and consultation expenses related to invited consultants, speakerships, and project-specific journal clubs, and group meetings.

Other Support:

14. **The UNR Vice President for Research** is able to supply in-kind support for graduate students of \$36,333 during the first year, and \$16,377 during the second year (due to state budget shortfalls, no third-year in-kind was offered).
15. **DARPA SyNAPSE** will announce, by September 2009, its decision to fund Phase I of that project. UNR is a partner to the HRL team, engaged to provide recommendations on biologically realistic architectures to be instantiated into a customized neuromorphic chips. It is anticipated that funding from DARPA can offset 10% of Dr. Goodman's first-year salary, as indicated below. (UNR has not yet been included in plans for Phase II of SyNAPSE, so salary is only reduced for the first year.)
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Correct

Goodman UNR for ONR contin2009-2012 - FY 1 (2010)

	Direct	Fringe
1 SALARY COSTS	90,567	20,676
Philip Goodman - PI (30% offload)	69,900	46,776 <i>18,873</i>
Fred Harris, co-inv (summer)	10,000	400
Sergiu Dascalu, co-inv (summer)	5,000	200
Grad. Student Brain Modeling, 12 mo.	2,834	1,650 <i>3150</i>
Grad. Student Robotics, 12 mo.	2,834	1,650 <i>3150</i>
2 SUPPLIES AND OPERATING	10,700	
computer hardware supplies	1,000	
research / processing supplies	4,000	
visiting speaker hosting	5,700	
3 CONSULTANT COSTS	26,000	
Henry Markram, EPFL, Lausanne	16,000	
Florian Mormann, U. Bonn, Germany	10,000	
4 TRAVEL COSTS	8,000	
ONR investig mtg (PG) + 1 confer (PG)	2,800	
ONR investig mtg (FH)	1,400	
ONR investig mtg (FM) + trip to Ger. (PG)	3,800	
5 EQUIPMENT	0	
6 TUITION	3,298	
tuition, 2 semesters @ 6 credits/student	3,298	<i>3629 for 24 credits @ 151.22 ea</i>
7 TOTAL DIRECT COST, 1-6 above	159,242	
8 ICR-ELIGIBLE DIRECT, 1-4 above	155,949	
9 ICR (40.5%)	63,157	
10 TOTAL FY 2010 ONR COST	222,399	
11 UNR FY 2010 IN-KIND SUPPORT	36,333	

FY 2 (2011)

	Direct	Fringe
1 SALARY COSTS	133,823	26,268
Philip Goodman - PI (40% offload)	93,200	22,368 <i>25,164</i>
Fred Harris, co-inv (summer)	10,000	400
Sergiu Dascalu, co-inv (summer)	5,000	200
Grad. Student Brain Modeling, 12 mo.	12,812	1,650 <i>3150</i>
Grad. Student Robotics, 12 mo.	12,812	1,650 <i>3150</i>
2 SUPPLIES AND OPERATING	10,700	
computer hardware supplies	1,000	
research / processing supplies	4,000	
visiting speaker hosting	5,700	
3 CONSULTANT COSTS	26,000	
Henry Markram, EPFL, Lausanne	16,000	
Florian Mormann, U. Bonn, Germany	10,000	
4 TRAVEL COSTS	8,000	
ONR investig mtg (PG) + 1 confer (PG)	2,800	
ONR investig mtg (FH)	1,400	
ONR investig mtg (FM) + trip to Ger. (PG)	3,800	
5 EQUIPMENT	0	
6 TUITION	3,298	
tuition, 2 semesters @ 6 credits/student	3,298	<i>3629</i>
7 TOTAL DIRECT COSTS, 1-6 above	208,089	
8 ICR-ELIGIBLE DIRECT, 1-4 above	204,791	
9 ICR (40.5%)	82,940	
10 TOTAL FY 2011 ONR COST	291,029	
11 UNR FY 2011 IN-KIND SUPPORT	16,377	

FY 3 (2012)

	Direct	Fringe
1 SALARY COSTS	150,200	26,268
Philip Goodman - PI (40% offload)	93,200	22,368 <i>25,164</i>
Fred Harris, co-inv (summer)	10,000	400
Sergiu Dascalu, co-inv (summer)	5,000	200
Grad. Student Brain Modeling, 12 mo.	21,000	1,650 <i>3150</i>
Grad. Student Robotics, 12 mo.	21,000	1,650 <i>3150</i>
2 SUPPLIES AND OPERATING	10,700	
computer hardware supplies	1,000	
research / processing supplies	4,000	
visiting speaker hosting	5,700	
3 CONSULTANT COSTS	26,000	
Henry Markram, EPFL, Lausanne	16,000	
Florian Mormann, U. Bonn, Germany	10,000	
4 TRAVEL COSTS	8,000	
ONR investig mtg (PG) + 1 confer (PG)	2,800	
ONR investig mtg (FH)	1,400	
ONR investig mtg (FM) + trip to Ger. (PG)	3,800	
5 EQUIPMENT	0	
6 TUITION	3,298	
tuition, 2 semesters @ 6 credits/student	3,298	
7 TOTAL DIRECT COSTS, 1-6 above	224,466	
8 ICR-ELIGIBLE DIRECT, 1-4 above	221,168	
9 ICR (40.5%)	89,573	
10 TOTAL FY 2012 ONR COST	314,039	
11 UNR FY 2012 IN-KIND SUPPORT	0	

CUMULATIVE 3-YEAR BUDGET

	Direct	Fringe
1 SALARY COSTS	374,590	73,212
Philip Goodman - PI (40% offload)	256,300	61,512
Fred Harris, co-inv (summer)	30,000	1,200
Sergiu Dascalu, co-inv (summer)	15,000	600
Grad. Student Brain Modeling, 12 mo.	36,645	4,950
Grad. Student Robotics, 12 mo.	36,645	4,950
2 SUPPLIES AND OPERATING	32,100	
computer hardware supplies	3,000	
research / processing supplies	12,000	
visiting speaker hosting	17,100	
3 CONSULTANT COSTS	78,000	
Henry Markram, EPFL, Lausanne	48,000	
Florian Mormann, U. Bonn, Germany	30,000	
4 TRAVEL COSTS	24,000	
ONR mtgs (PG) + conferences	8,400	
ONR mtgs (FH)	4,200	
ONR mtgs (FM) + trips to Ger. (PG)	11,400	
5 EQUIPMENT	0	
6 TUITION	9,894	
tuition, 2 semesters @ 6 credits/student	9,894	
7 TOTAL DIRECT COSTS, 1-6 above	591,796	
8 ICR-ELIGIBLE DIRECT, 1-4 above	581,902	
9 ICR (40.5%)	235,670	
10 FY 2010-2012 ONR COST	827,467	
11 UNR FY 2010-2012 IN-KIND SUPPORT	52,710	

VII.2 Budget Details

Goodman UNR for ONR contin2009-2012 -FY 1 (2010)

	Direct	Fringe
1 SALARY COSTS	90,567	20,676
Philip Goodman - PI (30% offload)	69,900	16,776
Fred Harris, co-inv (summer)	10,000	400
Sergiu Dascalu, co-inv (summer)	5,000	200
Grad. Student Brain Modeling, 12 mo.	2,834	1,650
Grad. Student Robotics, 12 mo.	2,834	1,650
2 SUPPLIES AND OPERATING	10,700	
computer hardware supplies	1,000	
research / processing supplies	4,000	
visiting speaker hosting	5,700	
3 CONSULTANT COSTS	26,000	
Henry Markram, EPFL, Lausanne	16,000	
Florian Mormann, U. Bonn, Germany	10,000	
4 TRAVEL COSTS	8,000	
ONR investig mtg (PG) + 1 confer (PG)	2,800	
ONR investig mtg (FH)	1,400	
ONR investig mtg (FM) + trip to Ger. (PG)	3,800	
5 EQUIPMENT	0	
6 TUITION	3,298	
tuition, 2 semesters @ 6 credits/student	3,298	
7 TOTAL DIRECT COST, 1-6 above	159,241	
8 ICR-ELIGIBLE DIRECT, 1-4 above	155,943	
9 ICR (40.5%)	63,157	
10 TOTAL FY 2010 ONR COST	222,398	
11 UNR FY 2010 IN-KIND SUPPORT	36,333	

FY 3 (2012)

	Direct	Fringe
1 SALARY COSTS	150,200	26,268
Philip Goodman - PI (40% offload)	93,200	22,368
Fred Harris, co-inv (summer)	10,000	400
Sergiu Dascalu, co-inv (summer)	5,000	200
Grad. Student Brain Modeling, 12 mo.	21,000	1,650
Grad. Student Robotics, 12 mo.	21,000	1,650
2 SUPPLIES AND OPERATING	10,700	
computer hardware supplies	1,000	
research / processing supplies	4,000	
visiting speaker hosting	5,700	
3 CONSULTANT COSTS	26,000	
Henry Markram, EPFL, Lausanne	16,000	
Florian Mormann, U. Bonn, Germany	10,000	
4 TRAVEL COSTS	8,000	
ONR investig mtg (PG) + 1 confer (PG)	2,800	
ONR investig mtg (FH)	1,400	
ONR investig mtg (FM) + trip to Ger. (PG)	3,800	
5 EQUIPMENT	0	
6 TUITION	3,298	
tuition, 2 semesters @ 6 credits/student	3,298	
7 TOTAL DIRECT COSTS, 1-6 above	224,466	
8 ICR-ELIGIBLE DIRECT, 1-4 above	221,168	
9 ICR (40.5%)	89,573	
10 TOTAL FY 2012 ONR COST	314,039	

FY 2 (2011)

	Direct	Fringe
1 SALARY COSTS	133,823	26,268
Philip Goodman - PI (40% offload)	93,200	22,368
Fred Harris, co-inv (summer)	10,000	400
Sergiu Dascalu, co-inv (summer)	5,000	200
Grad. Student Brain Modeling, 12 mo.	12,812	1,650
Grad. Student Robotics, 12 mo.	12,812	1,650
2 SUPPLIES AND OPERATING	10,700	
computer hardware supplies	1,000	
research / processing supplies	4,000	
visiting speaker hosting	5,700	
3 CONSULTANT COSTS	26,000	
Henry Markram, EPFL, Lausanne	16,000	
Florian Mormann, U. Bonn, Germany	10,000	
4 TRAVEL COSTS	8,000	
ONR investig mtg (PG) + 1 confer (PG)	2,800	
ONR investig mtg (FH)	1,400	
ONR investig mtg (FM) + trip to Ger. (PG)	3,800	
5 EQUIPMENT	0	
6 TUITION	3,298	
tuition, 2 semesters @ 6 credits/student	3,298	
7 TOTAL DIRECT COSTS, 1-6 above	208,089	
8 ICR-ELIGIBLE DIRECT, 1-4 above	204,791	
9 ICR (40.5%)	82,940	
10 TOTAL FY 2011 ONR COST	291,029	
11 UNR FY 2011 IN-KIND SUPPORT	16,377	

CUMULATIVE 3-YEAR BUDGET

	Direct	Fringe
1 SALARY COSTS	374,590	73,212
Philip Goodman - PI (40% offload)	256,300	61,512
Fred Harris, co-inv (summer)	30,000	1,200
Sergiu Dascalu, co-inv (summer)	5,000	600
Grad. Student Brain Modeling, 12 mo.	36,645	4,950
Grad. Student Robotics, 12 mo.	36,645	4,950
2 SUPPLIES AND OPERATING	32,100	
computer hardware supplies	3,000	
research / processing supplies	12,000	
visiting speaker hosting	17,100	
3 CONSULTANT COSTS	78,000	
Henry Markram, EPFL, Lausanne	48,000	
Florian Mormann, U. Bonn, Germany	30,000	
4 TRAVEL COSTS	24,000	
ONR mtgs (PG) + conferences	8,400	
ONR mtgs (FH)	4,200	
ONR mtgs (FM) + trips to Ger. (PG)	11,400	
5 EQUIPMENT	0	
6 TUITION	9,894	
tuition, 2 semesters @ 6 credits/student	9,894	
7 TOTAL DIRECT COSTS, 1-6 above	591,796	
8 ICR-ELIGIBLE DIRECT, 1-4 above	581,902	
9 ICR (40.5%)	235,670	
10 FY 2010-2012 ONR COST	827,467	

GRANTS.GOV ELECTRONIC APPLICATION AND SUBMISSION INFORMATION

1. Application and Submission Process

The proposal submission process is in two stages. Prospective proposers are encouraged to submit white papers. The reason for requesting white papers is to minimize the labor and cost associated with the production of detailed full proposals that have very little chance of being selected for funding. Based on an assessment of the white papers, the responsible Research Topic Chief will provide informal feedback to the proposer to encourage or discourage them to submit full proposals. White papers arriving after the deadline may not receive, and therefore may not benefit from, the informal feedback. However, all full proposals submitted under the terms and conditions cited in the BAA will be reviewed regardless of the feedback on, or lack of, a white paper.

Where to Submit:

Full Proposals – Full Proposals shall be submitted electronically to ONR through Grants.gov at www.grants.gov.

White Papers - White Papers shall be submitted in hard copy (either electronically or paper) directly to the cognizant ONR Science and Technology Department. White Paper submissions may be mailed, faxed, or emailed directly to the appropriate ONR Program Officer/Program Manager. For the mailing address see Section 5, entitled "Address for the Submission of Hard Copy White Papers."

Submission Process:

The offeror must use the Grants.Gov forms from the application package template associated with the BAA on the Grants.Gov web site. To be considered for award, applicants must include the ONR Department Code in Block 4 entitled "Federal Identifier" of the Standard Form (SF) 424 R&R. **Please be sure to enter the Department Code that best relates to your proposal to ensure that your proposal is routed to the correct Program Office. Only one Department Code may be selected.** Please choose at the sub-Department level whenever possible (i.e., for parent ONR Code 30, you should select at the 301, 302, or 303 level if at all possible). A list of Department Codes can be found at <http://www.onr.navy.mil/> on the right side of the screen.

Registration Requirements for Grants.gov: There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See www.grants.gov/GetStarted to begin this process. The Grants.gov Organization Registration Checklist: www.grants.gov/assets/OrganizationRegCheck.doc will guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

Questions: Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov.

2. Content and Format of White Papers and Full Proposals

The white papers and full proposals submitted under this BAA are expected to address unclassified basic research. The full proposal submissions will be protected from unauthorized disclosure in

accordance with FAR 15.207, applicable law, and DoD regulations. Proposers are expected to appropriately mark each page of their submission that contains proprietary information. Grants awarded under this announcement will be unclassified.

White Paper content should be as follows:

- A one page cover letter (optional)
- A cover page, labeled "PROPOSAL WHITE PAPER," that includes the BAA number, proposed title, and proposer's technical point of contact, with telephone number, facsimile number, e-mail address, topic number, and topic title
- Identification of the research and issues
- Proposed technical approaches
- Potential impact on DoD capabilities
- Potential team and management plan
- Summary of estimated costs
- Curriculum vitae of key investigators

The white paper should provide sufficient information on the research being proposed (e.g. hypothesis, theories, concepts, approaches, data measurements and analysis, etc.) to allow for an assessment by a technical expert.

Grants.gov Full Proposal Submission: Contents and Format of Applications

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select "Apply for Grants", and then select "Download Application Package." Enter the CFDA for ONR - 12.300 and the funding opportunity number (BAA 09-XXX), designated as "research opportunity number" on page two of this announcement.

Content and Form of Application – SF 424 (R&R)

You must complete the mandatory forms and any applicable optional forms (e.g., SF-LLL Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the additional instructions below. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.**

FORM: SF 424 (R&R)

Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the "Help Mode" (icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 18 can be found on the ONR Home Page at Contracts and Grants. The certification package for grants is entitled, "Certifications for Grants and Agreements."

FORM: RESEARCH & RELATED Other Project Information.

Complete questions 1 through 5 and attach files. The files must comply with the following instructions:

Project Summary/Abstract (Field 6 on the Form): Please insert coverage relevant to your program.

Project Narrative (Field 7 on the form)

The Following Formatting Rules Apply for Field 7

- Paper size when printed - 8.5 x 11 inch paper
- Margins - 1 inch
- Spacing -single
- Font - Times New Roman, 12 point
- Number of pages – Discuss the limit on the number of pages for Volume I – Technical with the cognizant Program Officer. There are no page limitations to Volume 2 - Cost. The cover, table of contents, list of references, letters of support, and curriculum vitae are excluded from the page limitations. Full proposals exceeding the page limit may not be evaluated.

Include the Following in Field 7

The first page of your narrative must include the following information:

- Principal Investigator name
- Phone number, fax number and e-mail address
- Institution, Department, Division
- Institution address
- Other universities involved
- Current DoD Contractor or Grantee? If yes, provide Agency, point of contact; phone number
- Proposal title
- Institution proposal number
- Agency to which proposal is submitted
- Topic number and topic title

• Table of Contents: List project narrative sections and corresponding page numbers.

Statement of Work: Please insert coverage relevant to your program.

- Technical Approach: Please insert coverage relevant to your program.
- Project Schedule, Milestones and Deliverables: A summary of the schedule of events, milestones, and a detailed description of the results and products to be delivered.
- Management Approach: A discussion of the overall approach to the management of this effort, including brief discussions of: required facilities; relationships with any subawardees and with other organizations; availability of personnel; and planning, scheduling and control procedures.
 - (a) Describe the facilities available for the accomplishment of the proposed research and related education objectives. Describe any capital equipment planned for acquisition under this program and its application to the proposed research. If possible, budget for capital equipment should be allocated to the first budget period of the grant. Include a description of any government furnished equipment/hardware/software/information, by version and/or configuration that are required for the proposed effort.
 - (b) Describe in detail proposed subawards to other eligible universities or

relevant collaborations (planned or in place) with government organizations, industry, or other appropriate institutions. Particularly describe how collaborations are expected to facilitate the transition of research results to applications. Descriptions of industrial collaborations should explain how the proposed research will impact the company's research and/or product development activities. If subawards to other universities are proposed, make clear the division of research activities, to be supported by detailed budgets for the proposed subawards.

(c) Designate one individual as the Principal Investigator for the award, for the purpose of technical responsibility and to serve as the primary point-of-contact. Briefly summarize the qualifications of the Principal Investigator and other key investigators to conduct the proposed research.

(d) List the amount of funding and describe the research activities of the Principal Investigator and co-investigators in on-going and pending research projects, whether or not acting as Principal Investigator in these other projects, the time charged to each of these projects, and their relationship to the proposed effort.

(e) Describe plans to manage the interactions among members of the proposed research team.

(f) Identify other parties to whom the proposal has been, or will be sent, including agency contact information.

- List of References: List publications cited in above sections.
- Letters of Support: Up to 3 Letters of Support from various DoD agencies may be included.
- Curriculum Vitae: Include curriculum vitae of the Principal Investigator and key co-investigators.

All applications should be in a single PDF file. To attach a Project Narrative in Field 7, click "Add Attachment."

Bibliography & References Cited (Field 8 on the form)

This field not required.

Facilities & Other Resources (Field 9 on the form)

This field not required.

Equipment (Field 10 on the form)

This field not required.

Other Attachment (Field 11 on the form)

If you need to elaborate on your responses to questions 1-5 on the "Other Project Information" document, provide the information in field 7 as part of your project narrative. Do not attach a file in field 11.

FORM: Research & Related Budget

Complete the Research and Related Budget form in accordance with the instructions on the form (activate Help Mode to see instructions) and the following instructions. You must provide a detailed cost breakdown of all costs, by cost category, by the funding periods described below, and by task/sub-task corresponding to the task number in the proposed Statement of Work which was provided in Field 7 of the Research and Related Other Project Information Form. Options must be separately priced. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work and meet all the criteria for allowability under the applicable Federal cost principles. The budget should adhere to the following guidelines:

Detailed breakdown of all costs, by cost category, by the calendar periods stated below. For budget purposes, use an award start date of _____. For the _____-year base grant, the cost should be broken down to reflect funding increment periods of:

- (1) _____,
- (2) _____,
- (3) _____, and
- (4) _____.

Note that the budget for each of the calendar periods (e.g. 01 May 07 to 30 Sep 07) should include only those costs to be expended during that calendar period.

The budget should also include an option for ____ additional years broken down to the following funding periods:

- (1) _____,
- (2) _____, and
- (3) _____.

Annual budget should be driven by program requirements. Elements of the budget should include:

- Direct Labor – Individual labor categories or persons, with associated labor hours and unburdened direct labor rates or percentage of effort or total man-years. Provide escalation rates for out years. Justify in Field K.
- Indirect Costs – Fringe Benefits, Overhead, F&A, G&A etc. and their applicable allocation bases. If composite rates are used, provide the calculations used in deriving the composite rates. Justify in Field K.
- Travel - Provide a breakout of travel costs including the purpose and number of trips, origin and destinations(s), duration, travelers per trip, and the airfare, hotel, per diem, car rental costs, etc. for each trip. Or a basis for estimate, i.e., based on previous efforts, based on past experience, etc. Justify in Field K.
- Subawards - Cost proposal as detailed as the recipient's cost proposal will be required to be submitted by the subrecipient. The subawardee's or subrecipient's cost proposal can be provided in a sealed envelope with the recipient's cost proposal or may be sent directly to the Government prior to award. Subawardee proposals must be received and reviewed prior to award.

- Consultant – Include a description of the nature of and the need for any consultant's participation. Strong justification must be provided, and consultants are to be used only under exceptional circumstances where no equivalent expertise can be found at a participating university. Provide budget justification in Field K.
- Materials – Specifically itemized with costs or estimated costs. Include a brief description of the proposers' procurement method used (competition, engineering estimate, market survey, etc.). Justify in Field K.
- Recipient Acquired Equipment or Facilities – Equipment and/or facilities are normally furnished by the Recipient. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). For computer/laptop purchases include a statement indicating the computer/laptop will be integrated into the program or used as an integral part of the research effort. Justify in Field K.
- Other Directs Costs – Provide an itemized list of all other proposed other direct costs such as Graduate Assistant tuition, laboratory fees, report and publication costs, and the basis for the estimates (e.g., quotes, prior purchases, catalog price lists). Justify in Field K.

NOTE: If the grant proposal is for a conference, workshop, or symposium, the proposal should include the following statement: "The funds provided by ONR will not be used for food or beverages."

- Options – The Base Period of Performance and Option Periods must be priced at the submission of the proposal. Any proposal containing unpriced options will not be included in the award;
- Fee/Profit - Fee/profit is unallowable.

Budget Justification (Field K on the form)

Provide the required supporting information for the cost elements as shown above (see Research & Related Budget instructions) and listed as follows: indirect cost, travel, consultant, materials, and other direct costs. Provide any other information you wish to submit to justify your budget request. The Research and Related Budget Form only includes five performance periods (*if this is a MURI, BAA, the MURI BAA requires seven budget periods. Attach the budget information for the last two MURI Budget Periods, e.g., 01 October 2013 to 30 September 2014, and 01 October 2014 to 30 April 2015, in Field K in the same format as that provided for the first five budget periods*). Funding breakdown by task/sub-task corresponding to the task number in the proposed Statement of Work which was provided in Field 7 of the Research and Related Other Project Information Form must also be attached in Field K.

FORM: R&R Subaward Budget Attachment(s) Form Budgets for Subawardees.

You must provide a separate cumulative and multi-year R&R budget for each subawardee. Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET ATTACHMENT(S) FORM and e-mail it to each subawardee that is required to submit a separate budget. A cost proposal as detailed as the proposer's cost proposal will be required to be submitted by the subcontractor. Note: Subawardees must have installed PureEdge Viewer before they can complete the form. After the Subawardee has e-mailed its completed budget back to you, attach it to one of the fields provided on the R&R SUBAWARD BUDGET ATTACHMENT(S) FORM. Use up to 10 letters of the subawardee's name as the file name (e.g., ucla.xfd or stanford.xfd).

SF-LLL Disclosure of Lobbying Activities Form

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

Proposal Receipt Notices

After a proposal is submitted through Grants.gov, the Authorized Organization Representative (AOR) will receive a series of three e-mails. It is extremely important that the AOR watch for and save each of the e-mails. You will know that your proposal has reached ONR when the AOR receives e-mail Number 3. You will need the Submission Receipt Number (e-mail Number 1) to track a submission. The three e-mails are:

Number 1 – The applicant will receive a confirmation page upon completing the submission to Grants.gov. This confirmation page is a record of the time and date stamp for the submission.

Number 2 – The applicant will receive an e-mail indicating that the proposal has been validated by Grants.gov within a few hours of submission. (This means that all of the required fields have been completed.)

Number 3 – The third notice is an acknowledgment of receipt in e-mail form from the designated agency within ten days from the proposal due date. For white papers the e-mail is sent to the Principal Investigator and for proposals the e-mail is sent to the authorized representative for the institution. The e-mail for white papers notes that the white paper has been received and the e-mail for proposals notes that the proposal has been received and provides the assigned tracking number. Hard copy submissions will receive only e-mail number 3.

4. Submission of Late Proposals

Any proposal submitted through Grants.gov where the time and date for submission (e-mail Number #1) is after the deadline for proposal submission in Section IV.3, will be late and will not be evaluated unless the Grants.gov website was not operational on the due date and was unable to receive the proposal submission. If this occurs, the time specified for the receipt of proposals through Grants.gov will be extended to the same time of the day specified in this BAA on the first workday on which the Grants.gov website is operational.

5. Address for the Submission of Mailed Hard Copy White Papers

Hard copies of white papers should be mailed to the Office of Naval Research at the following address:

Office of Naval Research
For white papers include: ATTN: _____
875 North Randolph Street
Arlington, VA 22203-1995
Point of Contact: _____
Telephone: _____

ONRBAA09-001

ONR BAA Announcement #09-001
September 23rd, 2008



LONG RANGE BROAD AGENCY ANNOUNCEMENT (BAA) FOR NAVY AND MARINE CORP SCIENCE AND TECHNOLOGY

INTRODUCTION:

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in Federal Acquisition Regulation (FAR) 6.102(d)(2), the Department of Defense Grants and Agreements Regulations (DoDGARS) 22.315(a) and 35.016, and DoD's Other Transaction Guide for Prototypes Projects, USD(AT&L), OT Guide, Jan 2001. A formal Request for Proposals (RFP), other solicitation, or additional information regarding this announcement will not be issued.

The Office of Naval Research (ONR) will not issue paper copies of this announcement. The ONR reserves the right to fund all, some or none of the proposals received under this BAA. ONR provides no funding for direct reimbursement of proposal development costs. Technical and cost proposals (or any other material) submitted in response to this BAA will not be returned. It is the policy of ONR to treat all proposals as sensitive competitive information and to disclose their contents only for the purposes of evaluation.

This announcement will remain open for approximately one (1) year from the date of publication or until replaced by a successor BAA. Proposals may be submitted at any time during this period. This announcement replaces ONR BAA #08-001 dated 05 September 2007.

I. GENERAL INFORMATION

SPECIAL NOTICE 1: All Grant Applications submitted under this BAA shall be submitted via the Grants.Gov "APPLY" function. No other form of paper or electronic submission will be accepted unless the prospective grantee organization applies for and receives a waiver in accordance with Section IV, Application and Submission Information, Paragraph 5 entitled 'Submission of Grant Proposals to Grants.gov' below.

SPECIAL NOTICE 2: All attachments to grant applications submitted through Grants.Gov must be in Adobe Portable Document Format. Proposals with attachments submitted in word processing, spreadsheet, or any format other than Adobe Portable Document Format will not be considered for award. The grant Application Package

Template to be used for submission of grant applications through Grants.Gov is based on the PureEdge Forms software. It is anticipated that this BAA will be amended before the end of 2008 to require the use of an Adobe Forms Package in place of the PureEdge Application Package Template. Once this amendment is issue, prospective grantees must download the new Adobe Application Package in order to be able to submit Grant Applications through Grants.Gov.

1. Agency Name -

Office of Naval Research

2. Research Opportunity Title -

Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science & Technology

3. Program Name -

Not Applicable (N/A)

4. Research Opportunity Number -

BAA 09-001

5. Response Date -

This announcement will remain open until 30 September 2009 or until replaced by a successor BAA, whichever first occurs. Proposals may be submitted at any time during this period.

6. Research Opportunity Description -

The Office of Naval Research (ONR) is interested in receiving proposals for Long-Range Science and Technology (S&T) Projects which offer potential for advancement and improvement of Navy and Marine Corps operations. Readers should note that this is an announcement to declare ONR's broad role in competitive funding of meritorious research across a spectrum of science and engineering disciplines.

Prior to preparing proposals, potential offerors are strongly encouraged to contact the ONR point of contact (POC) whose program best matches the offeror's field of interest. For information on POCs, refer to the ONR "Science and Technology Departments" as listed in the Science and Technology section of the ONR Home Page accessible through the World Wide Web at <http://www.onr.navy.mil/> and for ONR's International Agent located on the ONR Global Homepage at <http://www.onrglobal.navy.mil/>.

Work funded under this BAA may include basic research, applied research and some advanced technology development (ATD). With regard to any restrictions on the conduct or outcome of work funded under this BAA, ONR will follow the guidance on and definition of "contracted fundamental research" as provided in the Under Secretary of Defense (Acquisition, Technology and Logistics) Memorandum of 26 June 2008. As defined therein; the definition of "contracted fundamental research", in a DoD contractual context, includes [research performed under] grants and contracts that are (a) funded by Research, Development, Test, and Evaluation Budget Activity 1 (Basic Research), whether performed by universities or industry or (b) funded by Budget Activity 2 (Applied Research) and performed on-campus at a university. ATD is funded through Budget Activity 3. In conformance with the USD(AT&L) guidance and National Security Decision Directive 189, ONR will place no restriction on the conduct or reporting of unclassified fundamental research, except as otherwise required by statute, regulation or Executive Order. Normally, fundamental research is awarded under grants with universities and under contracts with industry. ATD is normally awarded under contracts and may require restrictions during the conduct of the research and DoD pre-publication review of research results due to subject matter sensitivity. Potential offerors should consult with the appropriate ONR POCs to determine whether the proposed effort would constitute basic research, applied research or ATD.

7. Point(s) of Contact –

Questions of a technical nature should be submitted to the ONR POC whose program best matches the offeror's field of interest as listed in the Science and Technology section of the ONR Home Page specified above. Through the ONR POC, prospective offerors will be connected to the cognizant ONR Program Officer.

8. Instrument Type(s) -

Awards may take the form of contracts, grants, cooperative agreements, and other transaction agreements, as appropriate.

9. Catalog of Federal Domestic Assistance (CFDA) Numbers -

12.300

10. Catalog of Federal Domestic Assistance (CFDA) Titles -

Department of Defense (DoD) Basic and Applied Scientific Research

11. Other Information -

This announcement is restricted to work relating to basic and applied research and that portion of advanced technology development not related to a specific system or hardware procurement. Contracts, grants and other awards made under this BAA are for scientific

study and experimentation directed towards advancing the state of the art or increasing knowledge or understanding.

THIS ANNOUNCEMENT IS NOT FOR THE ACQUISITION OF TECHNICAL, ENGINEERING AND OTHER TYPES OF SUPPORT SERVICES.

II. AWARD INFORMATION

The amount and period of performance of each selected proposal will vary depending on the research area and the technical approach to be pursued by the selected offeror.

III. ELIGIBILITY INFORMATION

All responsible sources from academia and industry may submit proposals under this BAA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this BAA will be set aside for HBCU and MI participation.

Federally Funded Research & Development Centers (FFRDCs), including Department of Energy National Laboratories, are not eligible to receive awards under this BAA. However, teaming arrangements between FFRDCs and eligible principal bidders are allowed so long as they are permitted under the sponsoring agreement between the Government and the specific FFRDC.

Navy laboratories and warfare centers as well as other Department of Defense and civilian agency laboratories are also not eligible to receive awards under this BAA and should not directly submit either white papers or full proposals in response to this BAA. If any such organization is interested in one or more of the programs described herein, the organization should contact an appropriate ONR POC to discuss its area of interest. The various scientific divisions of ONR are identified at <http://www.onr.navy.mil/>. As with FFRDCs, these types of federal organizations may team with other responsible sources from academia and industry that are submitting proposals under this BAA.

Teams are encouraged to submit proposals in any and all areas. However, Offerors must be willing to cooperate and exchange software, data and other information in an integrated program with other contractors, as well as with system integrators, selected by ONR.

Some topics cover export controlled technologies. Research in these areas is limited to "U.S. persons" as defined in the International Traffic in Arms Regulations (ITAR) - 22 CFR § 120.1 et seq. (See Section VII, Other Information)

IV. APPLICATION AND SUBMISSION INFORMATION

1. Application and Submission Process -

“White Papers” are frequently desired by ONR Program Officers. Offerors should consult the cognizant ONR Program Officer regarding the desirability of

“White Paper” submissions. The various scientific divisions of ONR are identified at <http://onr.navy.mil>

2. Content and Format of White Papers/Full Proposals –

White Papers and Full Proposals submitted under the BAA are expected to be unclassified; however, confidential/classified proposals are permitted. If a classified proposal is submitted, the resultant contract will be unclassified.

Unclassified proposals shall be submitted directly to the Technical Point of Contract (TPOC).

Classified proposals shall be submitted directly to the attention of ONR’s Document Control Unit at the following address:

Office of Naval Research
Document Control Unit
ONR Code 43
875 North Randolph Street
Arlington, VA 22203-1995

The inner wrapper of the classified proposal should be addressed to the attention of the TPOC. An ‘unclassified’ Statement of Work (SOW) must accompany any classified proposal.

Proposal submissions will be protected from unauthorized disclosure in accordance with FAR Subpart 15.207, applicable law, and DoD/DoN regulations. Offerors are expected to appropriately mark each page of their submission that contains proprietary information. The proposal shall include a severable, self-standing Statement of Work, which contains only unclassified information and does not include any proprietary restrictions.

IMPORTANT NOTE: Titles given to the White Papers/Full Proposals should be descriptive of the work they cover and not be merely a copy of the title of this solicitation.

The proposal format and content identified below are applicable to the submission of proposals for contracts other assistance agreements. As noted in Paragraph 5 below, proposals seeking grants and cooperative agreements are to be formatted as required by Standard Form 424 (R&R), which is available via the internet at <http://www.grants.gov/>.

Alternatives to the format and content identified below may be appropriate depending on the scope and nature of the proposed effort. Coordinate any alternative proposal formats and contents relating to white papers and technical proposals (Volume 1 of the full proposal) with the cognizant ONR Program Officer. Alternative formats and content may be directed by the ONR Program Officer or may result from Offerors' suggestions approved by the ONR Program Officer.

a. **WHITE PAPERS**

White Paper Format

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing – single or double-spaced
- Font – Times New Roman, 12 point
- Copies – one (1) original, an appropriate number of hard copies as discussed with the cognizant Program Officer, and one electronic copy on a CD-ROM (in Microsoft® Word or Excel 97 compatible or .PDF format).

White Paper Content

- **Cover Page:** The Cover Page shall be labeled “WHITE PAPER” and shall include the BAA number, proposed title, technical points of contact, telephone number, facsimile number, and e-mail address.
- **Technical Concept:** A description of the technology innovation and technical risk areas.

For Basic Research

- **Future Naval Relevance (where applicable):** A description of potential Naval relevance and contributions of the effort to the agency's specific mission.

For Applied Research and Advanced Technology Development

- **Operational Naval Concept (where applicable):** A description of the project objectives, the concept of operation for the new capabilities to be delivered, and the expected operational performance improvements.
- **Operational Utility Assessment Plan (where applicable):** A plan for demonstrating and evaluating the operational effectiveness of the Offeror's proposed products or processes in field experiments and/or tests in a simulated environment.

b. FULL PROPOSALS

Full Proposal Format – Volume 1 - Technical and Volume 2 - Cost Proposal

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing – single or double-spaced
- Font – Times New Roman, 12 point
- Discuss the limit on the number of pages for Volume I with the cognizant Program Officer. There are no page limitations to Volume 2.
- Copies – one (1) original, an appropriate number of hard copies as discussed with the cognizant Program Officer, and one electronic copy on a CD-ROM (in Microsoft® Word or Excel 97 compatible or .PDF format). If a grant or cooperative agreement is sought, the full proposal shall be submitted electronically on a Standard Form 424 (R&R) at <http://www.grants.gov/> as delineated below. Contracts and any other type of assistance agreements may be submitted via hard copy directly to the cognizant Program Officer.

Full Proposal Content

VOLUME 1: Technical Proposal

- ✓ • **Cover Page:** This should include the words “Technical Proposal” and the following:

- 1) BAA number;
- 2) Title of Proposal;
- 3) Identity of prime Offeror and complete list of subcontractors, if applicable;
- 4) Technical contact (name, address, phone/fax, electronic mail address)
- 5) Administrative/business contact (name, address, phone/fax, electronic mail address) and;
- 6) Duration of effort (differentiate basic effort and any proposed options)

- ✓ • **Table of Contents:** An alphabetical/numerical listing of the sections within the proposal, including corresponding page numbers.

• **Statement of Work:** A Statement of Work (SOW) clearly detailing the scope and objectives of the effort and the technical approach. It is anticipated that the proposed SOW will be incorporated as an attachment to the resultant award instrument. To this end, the proposals must include a severable, self-standing SOW, without any proprietary restrictions, which can be attached to the contract or agreement award. Include a detailed listing of the technical tasks/subtasks organized by year.

For Basic Research

- **Future Naval Relevance (where applicable):** A description of potential Naval relevance and contributions of the effort to the agency's specific mission.

For Applied Research and Advanced Technology Development

- **Operational Naval Concept (where applicable):** A description of the project objectives, the concept of operation for the new capabilities to be delivered, and the expected operational performance improvements.
 - **Operational Utility Assessment Plan (where applicable):** A plan for demonstrating and evaluating the operational effectiveness of the Offeror's proposed products or processes in field experiments and/or tests in a simulated environment.
 - **Project Schedule and Milestones:** A summary of the schedule of events and milestones.
 - **Assertion of Data Rights and/or Rights in Computer Software (Contract Proposals Only):** For a contract award an Offeror may provide with its proposal assertions to restrict use, release or disclosure of data and/or computer software that will be provided in the course of contract performance. The rules governing these assertions are prescribed in Defense Federal Acquisition Regulation Supplement (DFARS) clauses 252.227-7013, -7014 and -7017. These clauses may be accessed at the following web address:

<http://farsite.hill.af.mil/VFDFARA.HTM>
- The Government may challenge assertions that are provided in improper format or that do not properly acknowledge earlier federal funding of related research by the Offeror.
- **Deliverables:** A detailed description of the results and products to be delivered inclusive of the timeframe in which they will be delivered.
 - **Management Approach:** A discussion of the overall approach to the management of this effort, including brief discussions of the total organization; use of personnel; project/function/subcontractor/subrecipient relationships; government research interfaces; and planning, scheduling and control practice. Identify which personnel and subcontractors/subrecipients (if any) will be involved. Include a description of the facilities that are required for the proposed effort with a description of any Government Furnished Equipment/Hardware/Software/Information required, by version and/or configuration.
 - **Other Agencies:** Include the name(s) of any other agencies to which the proposal has also been submitted.

VOLUME 2: Cost Proposal

INSTRUCTIONS FOR CONTRACTS AND OTHER TRANSACTIONS AGREEMENTS

Although not required and provided for informational purposes only, adhering to the instructions delineated below may expedite contract or assistance award placement. Detailed instructions, entitled "Instructions for Preparing Cost Proposals for Contracts and Agreements", including a sample template for preparing costs proposals for contracts and agreements, may be found at ONR's website listed under the 'Acquisition Department – Contracts & Grants Submitting a Proposal' link at: http://www.onr.navy.mil/02/how_to.asp

The Cost Proposal shall consist of a cover page and two parts, Part 1 will provide a detailed cost breakdown of all costs by cost category by calendar or Government fiscal year, and Part 2 will provide a cost breakdown by task/sub-task corresponding to the task numbers in the proposed Statement of Work. Options must be separately priced.

Cover Page: The use of the SF 1411 is optional. The words "Cost Proposal" should appear on the cover page in addition to the following information:

- BAA number
- Title of Proposal
- Identity of prime Offeror and complete list of subcontractors, if applicable
- Technical contact (name, address, phone/fax, electronic mail address)
- Administrative/business contact (name, address, phone/fax, electronic mail address) and
- Duration of effort (separately identify basic effort and any proposed options)

Part 1: Detailed breakdown of all costs by cost category by calendar or Government fiscal year:

- Direct Labor – Individual labor categories or persons, with associated labor hours and unburdened direct labor rates. Provide escalation rates for out years;
- Indirect Costs – Fringe Benefits, Overhead, G&A, COM, etc. and their applicable allocation bases. If composite rates are used, provide the calculations used in deriving the composite rates.
- Travel – Provide a breakout of travel costs including the purpose and number of trips, origin and destinations(s), duration, travelers per trip, and the airfare, hotel, per diem, car rental costs, etc. for each trip.
- Subcontracts – A cost proposal as detailed as the Offeror's cost proposal will be required to be submitted by the subcontractor. The subcontractor's cost proposal can be provided in a sealed envelope with the Offeror's cost proposal or may be sent directly to the Government. Subcontractor proposals must be received and reviewed prior to contract award. The

prime contractor should perform and provide a cost/price analysis of each subcontractor's cost proposal.*

***Note:** DoD Federal Acquisition Regulation provision 252.215-7003 (48 CFR §252.215-7003) is incorporated into this solicitation by reference.

The offeror is to exclude excessive pass-through charges from subcontractors. The offeror must identify in its proposal the percentage of effort it intends to perform and the percentage to be performed by each of its proposed subcontractors. If more than 70 percent of the total effort will be formed through subcontractors, the offeror must include the additional information required by the above-cited clause.

- Consultants – Provide a breakdown of the consultant's hours, the hourly rate proposed, any other proposed consultant costs, a copy of the signed Consulting Agreement or other documentation supporting the proposed consultant cost, and a copy of the consultant's proposed statement of work if it is not already separately identified in the prime contractor's proposal.
- Materials & Supplies – Provide an itemized list of all proposed materials and supplies including quantities, unit prices, proposed vendors (if known), and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Contractor Acquired Equipment or Facilities – Equipment and/or facilities are normally furnished by the Contractor. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Other Direct Costs – Provide an itemized list of all other proposed other direct costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Options – The Base Period of Performance and Option Periods must be priced at the submission of the proposal. Any proposal containing unpriced options will not be included in the contract.
- Fee/Profit (Contract Proposals Only) – Profit or fee is not allowed on direct costs for facilities or in cost-sharing contracts.

Note: Indicate if you have an approved Purchasing/Estimating System and/or describe the process used to determine the basis of reasonableness (e.g., competition, market research, best value analysis) for subcontractors, consultants, materials, supplies, equipment/facilities, and other direct costs.

Part 2 : Cost breakdown by task/sub-task corresponding to the same task breakdown in the proposed Statement of Work. When options are contemplated, options must be separately identified and priced by task/subtask.

INSTRUCTIONS FOR GRANTS AND COOPERATIVE AGREEMENTS

The offeror must use the Grants.Gov forms from the application package template associated with the BAA on the Grants.Gov web site located at <http://www.grants.gov/> . Elements of the budget should include:

- Direct Labor – Individual labor categories or persons, with associated labor hours and unburdened direct labor rates or percentage of effort or total man-years. Provide escalation rates for out years. Justify in Field K
- Indirect Costs – Fringe Benefits, Overhead, F&A, G&A etc. and their applicable allocation bases. If composite rates are used, provide the calculations used in deriving the composite rates. Justify in Field K
- Travel – Provide a breakout of travel costs including the purpose and number of trips, origin and destinations(s), duration, travelers per trip, and the airfare, hotel, per diem, car rental costs, etc. for each trip. Or a basis for estimate, i.e., based on previous efforts, based on past experience, etc. Justify in Field K.
- Subawards - Cost proposal as detailed as the recipient's cost proposal will be required to be submitted by the subrecipient. The subawardee's or subrecipient's cost proposal can be provided in a sealed envelope with the recipient's cost proposal or may be sent directly to the Government. Subawardee proposals must be received and reviewed prior to award.
- Consultants – Provide a breakdown of the consultant's hours, the hourly rate proposed, any other proposed consultant costs and a copy of the consultant's proposed statement of work if it is not already separately identified in the prime recipient's proposal. Strong justification must be provided, and consultants are to be used only under exceptional circumstances where no equivalent expertise can be found at a participating university. Justify in Field K.
- Materials & Supplies – Provide an itemized list of all proposed materials and supplies including quantities, unit prices, proposed vendors (if known), and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). Justify in Field K.
- Recipient Acquired Equipment or Facilities – Equipment and/or facilities are normally furnished by the Recipient. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). For computer/laptop purchases include a statement indicating the computer/laptop will be integrated into the program or used as an integral part of the research effort. Justify in Field K.
- Other Direct Costs – Provide an itemized list of all other proposed other direct costs such as Graduate Assistant tuition, laboratory fees, report and publication costs, and the basis for the estimates (e.g., quotes, prior purchases, catalog price lists). Justify in Field K.

NOTE: If the grant proposal is for a conference, workshop, or symposium, the

proposal should include the following statement: "The funds provided by ONR will not be used for food or beverages."

- Options – The Base Period of Performance and Option Periods must be priced at the submission of the proposal. Any proposal containing unpriced options will not be included in the award.
- Fee/Profit - Fee/profit is unallowable.

3. Significant Dates and Times –

This announcement will remain open until 30 September 2009 or until replaced by a successor BAA, whichever first occurs. Proposals may be submitted any time during this period.

4. Submission of Late Proposals –

Not applicable (N/A)

5. Submission of Grant and Cooperative Agreement Proposals through Grants.gov (NOT APPLICABLE TO PROPOSALS FOR CONTRACTS AND OTHER ASSISTANCE AGREEMENTS)

Detailed instructions entitled "Grants.Gov Electronic Application and Submission Information" on how to submit a grant or cooperative agreement proposal through Grants.gov may be found at the ONR website listed under the 'Acquisition Department – Contracts & Grants Submitting a Proposal' link at:
http://www.onr.navy.mil/02/how_to.asp

Grant and cooperative agreement proposals shall be submitted through Grants.gov using the Grants.gov forms from the application package template associated with the BAA on the Grants.gov website. To be considered for award, applicants must include the ONR Department Code in Block 4 entitled 'Federal Identifier' of the Standard Form (SF) 424 R&R. Enter the Department Code that best relates to your proposal in Block 4 to ensure that it is properly routed to the correct Program Office. Only one Department Code may be selected. Choose at the sub-Department level wherever possible (i.e., for parent ONR Code 30, you should select at the 301, 302 or 303 level if possible). A list of the Department Codes can be found at <http://www.onr.navy.mil/> on the right side of the screen. If there is a specific ONR Program Officer to whom you wish to direct the proposal, enter the Department Code followed by the Program Officer's name. Applicants who fail to provide a Department Code identifier may receive notification that their proposal submission has been rejected.

White Papers should not be submitted through the Grants.govApply process but rather should be sent directly to ONR. White paper submissions should be either mailed, faxed, or emailed directly to the appropriate ONR Program Officer/Program Manager.

By completing Blocks 18 and 19 the Grant Applicant is providing the certification on lobbying required by 32 CFR Part 28. Refer to Section VI, 'Award Administration Information' entitled "Certifications" for further information.

For electronic submission of grant and cooperative agreement full proposals, several one-time actions must be completed in order to submit an application through Grants.gov. These include obtaining a Dun and Bradstreet Data Universal Numbering System (DUNS) number, registering with the Central Contract Registration (CCR), registering with the credential provider, and registering with Grants.gov. See www.grants.gov, specifically www.grants.gov/GetStarted.

Use the Grants.gov Organization Registration Checklist at http://www.grants.gov/applicants/register_your_organization.jsp which will provide guidance through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called 'MPIN' are important steps in the CCR registration process. Applicants who are not registered with CCR and Grants.gov should allow at least 21 days to complete these requirements. The process should be started as soon as possible. Additionally, in order to download the application package, applicants will need to install PureEdgeViewer. This small, free program will allow applicants to access, complete and submit applications electronically and securely. For a free version of the software, visit the following website: www.grants.gov/DownloadViewer. Any questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov.

Special Notices Relative to Grant Applications to be submitted through Grants.Gov:

All attachments to grant applications submitted through Grants.Gov must be in Adobe Portable Document Format (i.e., .PDF files). Proposals with attachments submitted in word processing, spreadsheet, or any format other than Adobe Portable Document Format will not be considered for award.

The grant Application Package Template to be used for submission of grant applications through Grants.Gov is based on the PureEdge Forms software. It is anticipated that this BAA will be amended before the end of 2008 to require the use of an Adobe Forms Package in place of the PureEdge Application Package Template. Once this amendment is issue, prospective grantees must download the new Adobe Application Package in order to be able to submit Grant Applications through Grants.Gov.

Process to Obtain a Waiver from the Use of Grants.Gov for Submission of Full Grant Proposals: If a prospective grantee is unable to comply with the requirement to use Grants.Gov "APPLY" for submission of a grant application under this BAA or finds it would be an excessive burden to comply with this requirement, a waiver request may be submitted not less than 30 calendar days prior to the closing date for receipt of Full Proposals. Such request should be submitted by the Electronic Business Point of Contact listed in the CCR for the organization and should contain the Organization/Individual's

name, address, telephone number, and email address. The request should state the reason for the request in sufficient detail so a decision can be made. The Waiver Request should be submitted to the ONR Acquisition Department point of contact or Grants Officer listed in the BAA. Such request can be sent by registered mail or email. The "postmark" stamp on the envelope or the time annotated on the email will be used to determine timeliness of the request. A decision and response will be issued within 14 calendar days of receipt of the request by ONR. Foreign Grantees who are not registered in CCR may request a waiver on that basis since CCR registration is integral to the Grants.Gov application process.

6. Address for the Submission of Hard Copy White Papers and Full Proposals for Contracts and Other Assistance Agreements.

Hard copies of White Papers (Contracts, Grants, Cooperative Agreements and Other Transaction Agreements) and Full Proposals for Contracts and Other Transaction Agreements should be sent to the Office of Naval Research at the following address:

Office of Naval Research
Attn*: _____
ONR Department Code**: _____
875 North Randolph Street
Arlington, VA 22203-1995

**Cognizant ONR Program Officer/Point of Contact (POC)*

***Cognizant ONR POC's Code*

A list describing each of the ONR Department Codes can be found at <http://www.onr.navy.mil/> on the right side of the screen.

V. EVALUATION INFORMATION

1. Evaluation Criteria –

Award decisions will be based on a competitive selection of proposals resulting from a scientific and cost review. Evaluations will be conducted using the following evaluation criteria:

- 1) Overall scientific and technical merits of the proposal;
- 2) Potential Naval relevance and contributions of the effort to the agency's specific mission;
- 3) The offeror's capabilities, related experience, facilities, techniques or unique combinations of these which are integral factors for achieving the proposal objectives;
- 4) The qualifications, capabilities and experience of the proposed Principal Investigator (PI), team leader and key personnel who are critical in achieving the proposal objects; and

- 5) The realism of the proposed costs and the availability of funds.

Overall, the technical factors (1 – 4 above) are more important than the cost factor, with the technical factors all being of equal value. The degree of importance of cost will increase with the degree of equality of the proposals in relation to the other factors on which selection is to be based, or when the cost is so significantly high as to diminish the value of the proposal's technical superiority to the Government.

For proposed awards to be made as contracts to large businesses, the socio-economic merits of each proposal will be evaluated based on the extent of the Offeror's commitment in providing meaningful subcontracting opportunities for small businesses, small disadvantaged businesses, woman-owned small businesses, HUBZone small businesses, veteran-owned small businesses, service disabled veteran-owned small businesses, historically black colleges and universities, and minority institutions.

The Government will evaluate options for award purposes by adding the total cost for all options to the total cost for the basic requirement. Evaluation of options will not obligate the Government to exercise the options during contract performance.

2. Evaluation Panel -

Technical and cost proposals submitted under this BAA will be protected from unauthorized disclosure in accordance with FAR 3.104-4 and 15.207. The cognizant Program Officer and other Government scientific experts will perform the evaluation of technical proposals. Cost proposals will be evaluated by Government business professionals. Restrictive notices notwithstanding, one or more support contractors may be utilized as subject-matter-expert technical consultants. Similarly, support contractors may be utilized to evaluate cost proposals. However, proposal selection and award decisions are solely the responsibility of Government personnel. Each support contractor's employee having access to technical and cost proposals submitted in response to this BAA will be required to sign a non-disclosure statement prior to receipt of any proposal submissions.

VI. AWARD ADMINISTRATION INFORMATION

1. Administrative Requirements –

- The North American Industry Classification System (NAICS) code – The North American Industry Classification System (NAICS) code for this announcement is “541712” with a small business size standard of “500 employees”.
- Central Contractor Registry (CCR) - Successful Offerors not already registered in the CCR will be required to register in CCR prior to award of any grant, contract, cooperative agreement, or other transaction agreement. Information on CCR registration is available at <http://www.onr.navy.mil/02/ccr.htm>.

- Subcontracting Plans - Successful contract proposals that exceed \$550,000, submitted by all but small business concerns, will be required to submit prior to award a Small Business Subcontracting Plan in accordance with FAR 52.219-9.
- Certifications – Proposals for contracts and assistance agreements should be accompanied by a completed certification package.

Contracts and Other Transaction Agreement Proposals:

For contracts, in accordance with FAR 4.1201, prospective contractors shall complete and submit electronic annual representations and certifications at <http://orca.bpn.gov>. In addition to completing the Online Representations and Certifications Application (ORCA), proposals must be accompanied with a completed DFARS and contract specific representations and certifications. These "DFARS and Contract Specific Representations and Certifications", i.e., Section K, may be accessed under the Contracts and Grants Section of the ONR Home Page at http://www.onr.navy.mil/02/rep_cert.asp. This certification requirement is also applicable for other transaction proposals involving prototypes (Section 845 agreements).

Grants and Cooperative Agreements:

Grant and Cooperative Agreement awards greater than \$100,000 require a certification of compliance with a national policy mandate concerning lobbying. Grant applicants shall provide this certification by electronic submission of SF424 (R&R) as a part of the electronic proposal submitted via Grants.gov (complete Blocks 18 and 19); The following certification applies to each applicant seeking federal assistance funds exceeding \$100,000:

CERTIFICATION REGARDING LOBBYING ACTIVITIES

- (1) No Federal appropriated funds have been paid or will be paid by or on behalf of the applicant, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the Federal contract, grant, loan, or cooperative agreement, the applicant shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The applicant shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and

contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S.C. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Grants and Cooperative Agreements not through Grants.gov:

Proposers seeking grants or cooperative agreements who have received Grants.gov waiver approval for awards greater than \$100,000 shall complete and submit electronic representations and certifications at the Contracts and Grants Section of the ONR Home Page at http://www.onr.navy.mil/02/rep_cert.asp.

2. Reporting -

The following are samples of data deliverables that are typically required under a research effort:

- *Technical and Financial Progress Reports
- *Presentation Materials
- *Final Report

Additional data deliverables may be proposed and finalized during negotiations. Research performed under contracts may also include the delivery of software, prototypes, and other hardware items.

VII. OTHER INFORMATION

1. Government Property/Government Furnished Equipment (GFE) and Facilities

Each proposer must provide a very specific description of any equipment/hardware that it needs to acquire to perform the work. This description should indicate whether or not each particular piece of equipment/hardware will be included as part of a deliverable item under the resulting award. Also, this description should identify the component, nomenclature, and configuration of the equipment/hardware that it proposes to purchase for this effort. The purchase on a direct reimbursement basis of special test equipment or other equipment that is not included in a deliverable item will be evaluated for allowability on a case-by-case basis. Maximum use of Government integration, test, and experiment facilities is encouraged in each of the Offeror's proposals.

Government research facilities and operational military units are available and should be considered as potential government-furnished equipment/facilities. These facilities and resources are of high value and some are in constant demand by multiple programs. It is

unlikely that all facilities would be used for any one specific program. The use of these facilities and resources will be negotiated as the program unfolds. Offerors should explain as part of their proposals which of these facilities are critical for the project's success.

2. Security Classification

In order to facilitate intra-program collaboration and technology transfer, the Government will attempt to enable technology developers to work at the unclassified level to the maximum extent possible. If access to classified material will be required at any point during performance, the Offeror must clearly identify such need prominently in its proposal.

3. Use of Animals and Human Subjects in Research

If animals are to be utilized in the research effort proposed, the Offeror must complete a DOD Animal Use Protocol with supporting documentation (copies of AALAC accreditation and/or NIH assurance, IACUC approval, research literature database searches, and the two most recent USDA inspection reports) prior to award. For assistance with submission of animal research related documentation, contact the ONR Animal/Human Use Administrator at (703) 696-4046.

Similarly, for any proposal for research involving human subjects the Offeror must submit prior to award: documentation of approval from an Institutional Review Board (IRB); IRB-approved research protocol; IRB-approved informed consent form; proof of completed human research training (e.g., training certificate or institutional verification of training); an application for a DoD Navy Addendum to the Offeror's DHHS-issued Federalwide Assurance (FWA) or the Offeror's DoD Navy Addendum number. In the event that an exemption criterion under 32 CFR.219.101(b) is claimed, provide documentation of the determination by the Institutional Review Board (IRB) Chair, IRB Vice Chair, designated IRB administrator or official of the human research protection program. Information about assurance applications and forms can be obtained by contacting ONR_343_contact@navy.mil. If the research is determined by the IRB to be greater than minimal risk, the Offeror also must provide the name and contact information for the independent medical monitor. [Note: for research involving human subjects that is greater than minimal risk, administrative procedures to protect human subjects from medical expenses (not otherwise provided or reimbursed) that are the direct result of participation in a research project must be addressed. Additional supporting documentation may be requested. For additional information on this topic, email ONR_343_contact@navy.mil.] For assistance with submission of human subject research related documentation, contact the ONR Animal/Human Use Administrator at (703) 696-4046.

4. Recombinant DNA

Proposal which call for experiments using recombinant DNA must include documentation of compliance with Department of Human and Health Services (DHHS) recombinant DNA regulations, approval of the Institutional Biosafety Committee (IBC), and copies of the DHHS Approval of the IBC letter.

5. Department of Defense High Performance Computing Program

The DoD High Performance Computing Program (HPCMP) furnishes the DoD S & T and RDT & E communities with use-access to very powerful high performance computing systems. Awardees of ONR contracts, grants, and other assistance instruments may be eligible

to use HPCMP assets in support of their funded activities if ONR Program Officer approval is obtained and if security/screening requirements are favorably completed. Additional information and an application may be found at <http://www.hpcmo.hpc.mil/>.

6. Protection of Proprietary and Sensitive Information

The parties acknowledge that, during performance of the contract, grant, or other assistance agreement resulting from this BAA, the recipient may require access to certain proprietary and confidential information (whether in its original or derived form) submitted to or produced by the Government. Such information includes, but is not limited to, business practices, proposals, designs, mission or operation concepts, sketches, management policies, cost and operating expense, technical data and trade secrets, proposed Navy budgetary information, and acquisition planning or acquisition actions, obtained either directly or indirectly as a result of the effort performed on behalf of ONR. The recipient shall take appropriate steps not only to safeguard such information, but also to prevent disclosure of such information to any party other than the Government. The recipient agrees to indoctrinate company personnel who will have access to or custody of the information concerning the nature of the confidential terms under which the Government received such information and shall stress that the information shall not be disclosed to any other party or to recipient personnel who do not need to know the contents thereof for the performance of the contract/agreement. Recipient personnel shall also be informed that they shall not engage in any other action, venture, or employment wherein this information will be used for any purpose by any other party.

7. Project Meetings and Reviews

Individual program reviews between the ONR sponsor and the performer may be held as necessary. Program status reviews may also be held to provide a forum for reviews of the latest results from experiments and any other incremental progress towards the major demonstrations. These meetings will be held at various sites throughout the country. For costing purposes, offerors should assume that 40% of these meetings will be at or near ONR, Arlington VA and 60% at other contractor or government facilities. Interim