



Department of Health and Human Services

National Institutes of Health
NATIONAL INSTITUTE ON DEAFNESS AND OTHER
COMMUNICATION DISORDERS

Notice of Award

FAIN# R01DC003180

Federal Award Date

01/22/2021

Recipient Information

1. Recipient Name

JOHNS HOPKINS UNIVERSITY, THE
3400 N CHARLES ST

BALTIMORE, MD 21218

2. Congressional District of Recipient

07

3. Payment System Identifier (ID)

1520595110A1

4. Employer Identification Number (EIN)

520595110

5. Data Universal Numbering System (DUNS)

001910777

6. Recipient's Unique Entity Identifier

7. Project Director or Principal Investigator

XIAOQIN WANG, PHD
Professor
xiaoqin.wang@jhu.edu
(410) 614-4547

8. Authorized Official

Marisa Bailey
mabailey@jhu.edu
443-287-0982

Federal Agency Information

9. Awarding Agency Contact Information

Eric Nunn

NATIONAL INSTITUTE ON DEAFNESS AND
OTHER COMMUNICATION DISORDERS
eric.nunn@nih.gov
(301) 451-5882

10. Program Official Contact Information

AMY POREMBA
Director Central Pathways For Hearing &
Balance Program
NATIONAL INSTITUTE ON DEAFNESS AND
OTHER COMMUNICATION DISORDERS
porembaa@nidcd.nih.gov
301-496-1804

Federal Award Information

11. Award Number

5R01DC003180-25

12. Unique Federal Award Identification Number (FAIN)

R01DC003180

13. Statutory Authority

42 USC 241 42 CFR 52

14. Federal Award Project Title

Information Processing in Auditory Cortex

15. Assistance Listing Number

93.173

16. Assistance Listing Program Title

Research Related to Deafness and Communication Disorders

17. Award Action Type

Non-Competing Continuation

18. Is the Award R&D?

Yes

Summary Federal Award Financial Information

19. Budget Period Start Date 02/01/2021 – End Date 01/31/2022

20. Total Amount of Federal Funds Obligated by this Action \$635,888

20a. Direct Cost Amount \$397,520

20b. Indirect Cost Amount \$238,368

21. Authorized Carryover \$0

22. Offset \$0

23. Total Amount of Federal Funds Obligated this budget period \$635,888

24. Total Approved Cost Sharing or Matching, where applicable \$0

25. Total Federal and Non-Federal Approved this Budget Period \$635,888

26. Project Period Start Date 01/01/1997 – End Date 01/31/2025

27. Total Amount of the Federal Award including Approved Cost
Sharing or Matching this Project Period \$1,296,155

28. Authorized Treatment of Program Income

Additional Costs

29. Grants Management Officer - Signature

Edward Myrbeck

30. Remarks

Acceptance of this award, including the "Terms and Conditions," is acknowledged by the recipient when funds are drawn down or otherwise requested from the grant payment system.



NATIONAL INSTITUTE ON DEAFNESS AND OTHER COMMUNICATION DISORDERS

SECTION I – AWARD DATA – 5R01DC003180-25

Principal Investigator(s):
XIAOQIN WANG, PHD

Award e-mailed to: eawards@jhu.edu

Dear Authorized Official:

The National Institutes of Health hereby awards a grant in the amount of \$635,888 (see "Award Calculation" in Section I and "Terms and Conditions" in Section III) to JOHNS HOPKINS UNIVERSITY, THE in support of the above referenced project. This award is pursuant to the authority of 42 USC 241 42 CFR 52 and is subject to the requirements of this statute and regulation and of other referenced, incorporated or attached terms and conditions.

Acceptance of this award, including the "Terms and Conditions," is acknowledged by the recipient when funds are drawn down or otherwise requested from the grant payment system.

Each publication, press release, or other document about research supported by an NIH award must include an acknowledgment of NIH award support and a disclaimer such as "Research reported in this publication was supported by the National Institute On Deafness And Other Communication Disorders of the National Institutes of Health under Award Number R01DC003180. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health." Prior to issuing a press release concerning the outcome of this research, please notify the NIH awarding IC in advance to allow for coordination.

Award recipients must promote objectivity in research by establishing standards that provide a reasonable expectation that the design, conduct and reporting of research funded under NIH awards will be free from bias resulting from an Investigator's Financial Conflict of Interest (FCOI), in accordance with the 2011 revised regulation at 42 CFR Part 50 Subpart F. The Institution shall submit all FCOI reports to the NIH through the eRA Commons FCOI Module. The regulation does not apply to Phase I Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) awards. Consult the NIH website <http://grants.nih.gov/grants/policy/coi/> for a link to the regulation and additional important information.

If you have any questions about this award, please direct questions to the Federal Agency contacts.

Sincerely yours,

Edward Myrbeck
Grants Management Officer
NATIONAL INSTITUTE ON DEAFNESS AND OTHER COMMUNICATION DISORDERS

Additional information follows

Cumulative Award Calculations for this Budget Period (U.S. Dollars)

Salaries and Wages	\$191,060
Fringe Benefits	\$50,854
Personnel Costs (Subtotal)	\$241,914
Equipment	\$23,609
Materials & Supplies	\$47,209
Travel	\$3,825
Other	\$77,563
Publication Costs	\$3,400

Federal Direct Costs	\$397,520
Federal F&A Costs	\$238,368
Approved Budget	\$635,888
Total Amount of Federal Funds Authorized (Federal Share)	\$635,888
TOTAL FEDERAL AWARD AMOUNT	\$635,888

AMOUNT OF THIS ACTION (FEDERAL SHARE) **\$635,888**

SUMMARY TOTALS FOR ALL YEARS (for this Document Number)		
YR	THIS AWARD	CUMULATIVE TOTALS
25	\$635,888	\$635,888
26	\$631,358	\$631,358
27	\$620,039	\$620,039
28	\$612,279	\$612,279

Recommended future year total cost support, subject to the availability of funds and satisfactory progress of the project

Fiscal Information:

Payment System Identifier: 1520595110A1
Document Number: RDC003180E
PMS Account Type: P (Subaccount)
Fiscal Year: 2021

IC	CAN	2021	2022	2023	2024
DC	8472510	\$635,888	\$631,358	\$620,039	\$612,279

Recommended future year total cost support, subject to the availability of funds and satisfactory progress of the project

NIH Administrative Data:

PCC: HR61 / **OC:** 41025 / **Released:** Myrbeck, Edward 01/12/2021

Award Processed: 01/22/2021 02:44:57 AM

SECTION II – PAYMENT/HOTLINE INFORMATION – 5R01DC003180-25

For payment and HHS Office of Inspector General Hotline information, see the NIH Home Page at <http://grants.nih.gov/grants/policy/awardconditions.htm>

SECTION III – STANDARD TERMS AND CONDITIONS – 5R01DC003180-25

This award is based on the application submitted to, and as approved by, NIH on the above-titled project and is subject to the terms and conditions incorporated either directly or by reference in the following:

- a. The grant program legislation and program regulation cited in this Notice of Award.
- b. Conditions on activities and expenditure of funds in other statutory requirements, such as those included in appropriations acts.
- c. 45 CFR Part 75.
- d. National Policy Requirements and all other requirements described in the NIH Grants

- Policy Statement, including addenda in effect as of the beginning date of the budget period.
- e. Federal Award Performance Goals: As required by the periodic report in the RPPR or in the final progress report when applicable.
 - f. This award notice, INCLUDING THE TERMS AND CONDITIONS CITED BELOW.

(See NIH Home Page at <http://grants.nih.gov/grants/policy/awardconditions.htm> for certain references cited above.)

Research and Development (R&D): All awards issued by the National Institutes of Health (NIH) meet the definition of "Research and Development" at 45 CFR Part§ 75.2. As such, auditees should identify NIH awards as part of the R&D cluster on the Schedule of Expenditures of Federal Awards (SEFA). The auditor should test NIH awards for compliance as instructed in Part V, Clusters of Programs. NIH recognizes that some awards may have another classification for purposes of indirect costs. The auditor is not required to report the disconnect (i.e., the award is classified as R&D for Federal Audit Requirement purposes but non-research for indirect cost rate purposes), unless the auditee is charging indirect costs at a rate other than the rate(s) specified in the award document(s).

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VII Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

An unobligated balance may be carried over into the next budget period without Grants Management Officer prior approval.

This grant is subject to Streamlined Noncompeting Award Procedures (SNAP).

This award is subject to the requirements of 2 CFR Part 25 for institutions to receive a Dun & Bradstreet Universal Numbering System (DUNS) number and maintain an active registration in the System for Award Management (SAM). Should a consortium/subaward be issued under this award, a DUNS requirement must be included. See <http://grants.nih.gov/grants/policy/awardconditions.htm> for the full NIH award term implementing this requirement and other additional information.

This award has been assigned the Federal Award Identification Number (FAIN) R01DC003180. Recipients must document the assigned FAIN on each consortium/subaward issued under this award.

This award is not subject to the Transparency Act subaward and executive compensation reporting requirement of 2 CFR Part 170.

In accordance with P.L. 110-161, compliance with the NIH Public Access Policy is now mandatory. For more information, see NOT-OD-08-033 and the Public Access website: <http://publicaccess.nih.gov/>.

In accordance with the regulatory requirements provided at 45 CFR 75.113 and Appendix XII to 45 CFR Part 75, recipients that have currently active Federal grants, cooperative agreements, and procurement contracts with cumulative total value greater than \$10,000,000 must report and maintain information in the System for Award Management (SAM) about civil, criminal, and administrative proceedings in connection with the award or performance of a Federal award that reached final disposition within the most recent five-year period. The recipient must also make semiannual disclosures regarding such proceedings. Proceedings information will be made publicly available in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System (FAPIIS)). Full reporting requirements and procedures are found in Appendix XII to 45 CFR Part 75. This term does not apply to NIH fellowships.

SECTION IV – DC SPECIFIC AWARD CONDITIONS – 5R01DC003180-25

Clinical Trial Indicator: No

This award does not support any NIH-defined Clinical Trials. See the NIH Grants Policy Statement Section 1.2 for NIH definition of Clinical Trial.

SPREADSHEET SUMMARY

AWARD NUMBER: 5R01DC003180-25

INSTITUTION: JOHNS HOPKINS UNIVERSITY, THE

Budget	Year 25	Year 26	Year 27	Year 28
Salaries and Wages	\$191,060	\$191,060	\$191,060	\$191,060
Fringe Benefits	\$50,854	\$50,854	\$50,854	\$50,854
Personnel Costs (Subtotal)	\$241,914	\$241,914	\$241,914	\$241,914
Equipment	\$23,609			
Materials & Supplies	\$47,209	\$47,209	\$47,209	\$47,209
Travel	\$3,825	\$3,825	\$3,825	\$3,825
Other	\$77,563	\$89,214	\$82,302	\$77,563
Publication Costs	\$3,400	\$3,400	\$3,400	\$3,400
TOTAL FEDERAL DC	\$397,520	\$385,562	\$378,650	\$373,911
TOTAL FEDERAL F&A	\$238,368	\$245,796	\$241,389	\$238,368
TOTAL COST	\$635,888	\$631,358	\$620,039	\$612,279

Facilities and Administrative Costs	Year 25	Year 26	Year 27	Year 28
F&A Cost Rate 1	63.75%	63.75%	63.75%	63.75%
F&A Cost Base 1	\$373,911	\$385,562	\$378,650	\$373,911
F&A Costs 1	\$238,368	\$245,796	\$241,389	\$238,368

A. COVER PAGE

Project Title: Information Processing in Auditory Cortex	
Grant Number: 5R01DC003180-25	Project/Grant Period: 01/01/1997 - 01/31/2025
Reporting Period: 02/25/2020 - 01/31/2021	Requested Budget Period: 02/01/2021 - 01/31/2022
Report Term Frequency: Annual	Date Submitted: 12/16/2020
Program Director/Principal Investigator Information: XIAOQIN WANG , PHD Phone Number: (410) 614-4547 Email: xiaoqin.wang@jhu.edu	Recipient Organization: JOHNS HOPKINS UNIVERSITY 3400 N. Charles Street BALTIMORE, MD 21218 DUNS: 001910777 EIN: 1520595110A1 RECIPIENT ID:
Change of Contact PD/PI: NA	
Administrative Official: MARISA BAILEY 733 N. Broadway, Suite 117 Baltimore, MD 21205 Phone number: 443-287-0982 Email: mabailey@jhu.edu	Signing Official: MARISA BAILEY 733 N. Broadway, Suite 117 Baltimore, MD 21205 Phone number: 443-287-0982 Email: mabailey@jhu.edu
Human Subjects: No	Vertebrate Animals: Yes
hESC: No	Inventions/Patents: No

B. ACCOMPLISHMENTS

B.1 WHAT ARE THE MAJOR GOALS OF THE PROJECT?

The long-term objective of this research is to understand fundamental neural coding mechanisms and neural circuits in auditory cortex that subserve cortical representations of biologically important sounds. We will use the common marmoset (*Callithrix jacchus*) as our experimental model to investigate these questions. Marmosets have a hearing range similar to that of humans and are an ideal model system for studying audition and deficits and diseases in hearing. With the recent progress in creating transgenic marmosets, this model system is poised to become a major non-human primate model for hearing research. Our laboratory has pioneered major neural recording techniques in awake and behaving marmosets. In this application, we will focus on elucidating neural coding mechanisms underlying spatial and harmonic processing in non-primary auditory cortex. Aim 1 will characterize functional properties of parabelt areas of auditory cortex. Aim 2 will study cortical organization of spatial information. Aim 3 will study topographic organization of harmonic processing in marmoset auditory cortex. Findings from the proposed study will shed lights on neural mechanisms responsible for hearing and have implications for understanding how the auditory system operates in normal or diseased conditions.

B.1.a Have the major goals changed since the initial competing award or previous report?

No

B.2 WHAT WAS ACCOMPLISHED UNDER THESE GOALS?

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B.3 COMPETITIVE REVISIONS/ADMINISTRATIVE SUPPLEMENTS

For this reporting period, is there one or more Revision/Supplement associated with this award for which reporting is required?

No

B.4 WHAT OPPORTUNITIES FOR TRAINING AND PROFESSIONAL DEVELOPMENT HAS THE PROJECT PROVIDED?

NOTHING TO REPORT

B.5 HOW HAVE THE RESULTS BEEN DISSEMINATED TO COMMUNITIES OF INTEREST?

NOTHING TO REPORT

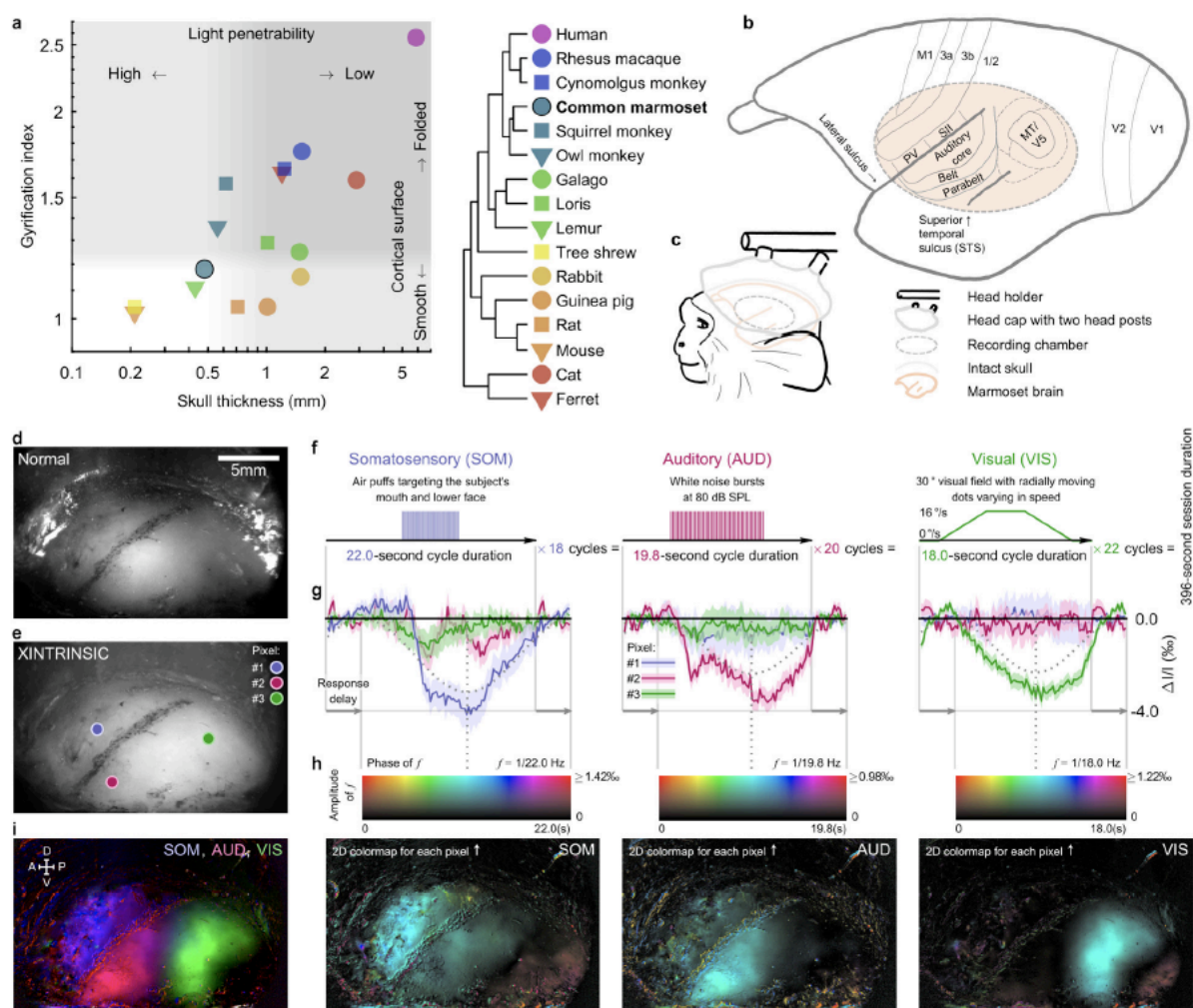
B.6 WHAT DO YOU PLAN TO DO DURING THE NEXT REPORTING PERIOD TO ACCOMPLISH THE GOALS?

In the next reporting period, we plan to continue experiments in Aims 1-2 and begin experiments in Aim 3.

B.2 What was accomplished under these goals?

We have made significant progress in Aims 1-2 in the current funding cycle. We have conducted single neuron recording experiments to characterize functional properties of parabelt areas of auditory cortex as outlined in Aim 1. For Aim 2, we have conducted optical imaging experiments to explore spatial representations in various areas of marmoset cortex. An important progress we have made in this project is to develop an noninvasive through-skull wide-field optical imaging technique in awake marmosets. This new technique is now in use in our laboratory. We are preparing a manuscript to report this work. A pre-print of this manuscript has been deposited in BioRxiv (see below). This new exciting technique will help us identify potential cortical regions to carry out further electrophysiology recordings.

1. Functional maps of the primate cortex revealed by through-skull wide-field optical imaging. Xindong Song, Yueqi Guo, Hongbo Li, Chenggang Chen, Zachary Schmidt, Xiaoqin Wang
<https://www.biorxiv.org/content/10.1101/2020.12.05.413047v1.full>



Marmoset through-skull imaging and functional parcellation of cortical modalities. **a**, Gyrification index⁷ and skull thickness⁶ are compared across species (more details on data sources in Methods). Light penetrability decreases as the skull thickness increases. Increased cortical folding (indicated by larger gyrification index) fragmentizes functional maps in the imaging field. **b**, A sketch of key cortical areas in marmosets⁹⁻¹¹. **c**, Illustration of a marmoset with head-cap implant and recording chamber. **d**, **e**, A view of the recording chamber imaged with **(e)** or without **(d)** XINTRINSIC enhancement using green light. The putative lateral sulcus was marked during implant surgery. **f**, Stimuli design for functionally parcellating somatosensory (SOM), auditory (AUD), and visual (VIS) cortices. **g**, Intrinsic signal response to the stimuli shown in **f** from three exemplar pixels, whose locations are labeled in **e** with the corresponding colors of the signal traces. Each average response trace is shown as a solid line with a shade representing the errors (standard error mean, SEM). Stimulus repetitions in each modality: 18 for SOM (left), 20 for AUD (middle), 22 for VIS (right). For each modality, a cosine “fitting” curve to the trace of the most responsive exemplar pixel was drawn (dotted cosine line) with the response phase indicated by a dotted vertical line. **h**, Response maps of three modalities (left: SOM, middle: AUD, right: VIS). For each pixel, the cosine “fitting” phase and amplitude were encoded respectively as color and intensity on the map, according to the 2D colormap shown above each modality map. **i**, A summary map of functional modality parcellation, with each modality represented by a color (blue: SOM, red: AUD, green: VIS). A (anterior), P (posterior), D (dorsal), V (ventral).

C. PRODUCTS**C.1 PUBLICATIONS**

Are there publications or manuscripts accepted for publication in a journal or other publication (e.g., book, one-time publication, monograph) during the reporting period resulting directly from this award?

No

C.2 WEBSITE(S) OR OTHER INTERNET SITE(S)

NOTHING TO REPORT

C.3 TECHNOLOGIES OR TECHNIQUES

NOTHING TO REPORT

C.4 INVENTIONS, PATENT APPLICATIONS, AND/OR LICENSES

Have inventions, patent applications and/or licenses resulted from the award during the reporting period? No

If yes, has this information been previously provided to the PHS or to the official responsible for patent matters at the grantee organization?

C.5 OTHER PRODUCTS AND RESOURCE SHARING

NOTHING TO REPORT

D. PARTICIPANTS

D.1 WHAT INDIVIDUALS HAVE WORKED ON THE PROJECT?

Commons ID	S/K	Name	Degree(s)	Role	Cal	Aca	Sum	Foreign Org	Country	SS
ERA Commons Name		WANG, XIAOQIN	PHD	PD/PI			Effort			NA

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Glossary of acronyms: S/K - Senior/Key DOB - Date of Birth Cal - Person Months (Calendar) Aca - Person Months (Academic) Sum - Person Months (Summer)	Foreign Org - Foreign Organization Affiliation SS - Supplement Support RE - Reentry Supplement DI - Diversity Supplement OT - Other NA - Not Applicable
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D.2 PERSONNEL UPDATES

D.2.a Level of Effort

Will there be, in the next budget period, either (1) a reduction of 25% or more in the level of effort from what was approved by the agency for the PD/PI(s) or other senior/key personnel designated in the Notice of Award, or (2) a reduction in the level of effort below the minimum amount of effort required by the Notice of Award?

No

D.2.b New Senior/Key Personnel

Are there, or will there be, new senior/key personnel?

No

D.2.c Changes in Other Support

Has there been a change in the active other support of senior/key personnel since the last reporting period?

Yes

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D.2.d New Other Significant Contributors

Are there, or will there be, new other significant contributors?

No

D.2.e Multi-PI (MPI) Leadership Plan

Will there be a change in the MPI Leadership Plan for the next budget period?

NA

For New and Renewal Applications – DO NOT SUBMIT UNLESS REQUESTED**PHS 398 OTHER SUPPORT****Wang, Xiaoqin**ACTIVE

R01 DC003180 (Wang)	2/25/2020-1/30/2025	Effort calendar
NIH/NIDCD	\$421,899	

Information Processing in Auditory Cortex

The major goals of this project are to understand neural mechanisms for representing species-specific vocalizations in auditory cortex of awake marmosets and fundamental neural mechanisms underlying cortical representations of these biologically important sounds.

R01 DC005808 (Wang)	3/1/2018-2/28/2023	Effort calendar
NIH/NIDCD	\$339,515	

Auditory-Vocal Interaction Mechanisms in Primates

The major goals of this project are to study behavioral and physiological mechanisms underlying auditory-vocal interactions in non-human primates, how the vocal production system modulates neural processing in auditory cortex, and whether marmoset vocalizations exhibit experience-based plasticity.

R01 DC014503 (Wang)	12/1/2015-11/30/2021 (NCE)	Effort calendar
NIH/NIDCD	\$268,173	

Cortical Processing of Cochlear Implant Signals

The major goals of this project are to elucidate neural coding and plasticity mechanisms underlying cortical processing of cochlear implant (CI) signals in the context of vocal communication.

T32 EB003383 (Wang)	7/1/2015-6/30/2021 (NCE)	Effort calendar
NIH/NIBIB	\$277,596	

Training Program in Neuroengineering

The major goals of this training program are to produce the next generation of engineers, scientists and educators and to groom the trainees into scientific and engineering leaders. The program includes six theme areas (Neurotechnology, Neuroimaging, Computational Neuroengineering, Systems Neuroscience, Neural Tissue Engineering, and Clinical Neuroengineering) and embraced a number of additional faculty preceptors across eight departments and two divisions.

N66001-17-2-4008 (Wang)	3/2/2017-3/1/2021	Effort calendar
DARPA	\$280,000	

Target Neuroplasticity Training (TNT)

The major goals of this project are to develop a peripheral nerve stimulation training program that will enhance human perceptual and language learning.

U24 MH123423 (Wang)	7/15/2020-5/31/2025	Effort calendar
NIH BRAIN Initiative	\$850,197	

Bicoastal Marmoset Breeding Center

The major goal of this project is to establish a bicoastal marmoset breeding center, with breeding colonies at JHU and UCSD, to supply marmosets to the research community in the U.S.

OVERLAP: There is no scientific or budgetary overlap.

E. IMPACT**E.1 WHAT IS THE IMPACT ON THE DEVELOPMENT OF HUMAN RESOURCES?**

Not Applicable

E.2 WHAT IS THE IMPACT ON PHYSICAL, INSTITUTIONAL, OR INFORMATION RESOURCES THAT FORM INFRASTRUCTURE?

NOTHING TO REPORT

E.3 WHAT IS THE IMPACT ON TECHNOLOGY TRANSFER?

Not Applicable

E.4 WHAT DOLLAR AMOUNT OF THE AWARD'S BUDGET IS BEING SPENT IN FOREIGN COUNTRY(IES)?

NOTHING TO REPORT

F. CHANGES**F.1 CHANGES IN APPROACH AND REASONS FOR CHANGE**

Not Applicable

F.2 ACTUAL OR ANTICIPATED CHALLENGES OR DELAYS AND ACTIONS OR PLANS TO RESOLVE THEM

NOTHING TO REPORT

F.3 SIGNIFICANT CHANGES TO HUMAN SUBJECTS, VERTEBRATE ANIMALS, BIOHAZARDS, AND/OR SELECT AGENTS**F.3.a Human Subject**

No Change

F.3.b Vertebrate Animals

No Change

F.3.c Biohazards

No Change

F.3.d Select Agents

No Change

G. SPECIAL REPORTING REQUIREMENTS SPECIAL REPORTING REQUIREMENTS

G.1 SPECIAL NOTICE OF AWARD TERMS AND FUNDING OPPORTUNITIES ANNOUNCEMENT REPORTING REQUIREMENTS

NOTHING TO REPORT

G.2 RESPONSIBLE CONDUCT OF RESEARCH

Not Applicable

G.3 MENTOR'S REPORT OR SPONSOR COMMENTS

Not Applicable

G.4 HUMAN SUBJECTS

Not Applicable

G.5 HUMAN SUBJECTS EDUCATION REQUIREMENT

Are there personnel on this project who are newly involved in the design or conduct of human subjects research?

G.6 HUMAN EMBRYONIC STEM CELLS (HESCS)

Does this project involve human embryonic stem cells (only hESC lines listed as approved in the NIH Registry may be used in NIH funded research)?

No

G.7 VERTEBRATE ANIMALS

Does this project involve vertebrate animals?

Yes

G.8 PROJECT/PERFORMANCE SITES

Organization Name	DUNS	Congressional District	Address
Primary: JOHNS HOPKINS UNIVERSITY	001910777	MD-007	Removed by agreement
Johns Hopkins University	001910777	MD-007	

JOHNS HOPKINS UNIVERSITY	001910777		Removed by agreement
JOHNS HOPKINS UNIVERSITY	001910777	MD-007	
Johns Hopkins University	001910777	MD-007	

G.9 FOREIGN COMPONENT

No foreign component

G.10 ESTIMATED UNOBLIGATED BALANCE

G.10.a Is it anticipated that an estimated unobligated balance (including prior year carryover) will be greater than 25% of the current year's total approved budget?

No

G.11 PROGRAM INCOME

Is program income anticipated during the next budget period? No

G.12 F&A COSTS

Is there a change in performance sites that will affect F&A costs?

No