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CIT OFFICE OF THE REGISTRAR



INDEPENDENT STUDY PROGRAM PETITION

ISP PROPOSAL

Student: \_\_\_\_\_ MSC: \_\_\_\_\_  
(Please print)

Cell Phone #: \_\_\_\_\_ YOS: Sophomore

Pertinent Background: I am a current sophomore interested in pursuing a degree in Decision Neuroscience. I am interested in studying an interdisciplinary subject that includes elements of neuroscience, psychology, and economics.

Goals of proposal; reasons for applying:

The subjects I am interested in are included in the CNS, Biology, and Economics majors. Through the Independent Study Program, I tailor my course selection to better fit my major of interest, which encompasses a subset from each of the three majors.

Faculty Advisers: (Indicate Chairman)

Ralph Adolphs (Chair), Peter Bossaerts, and Colin Camerer

Agreement with ISP Study Proposal:

Student: \_\_\_\_\_ Date: 5/27/10

Faculty Adviser: Ralph Adolphs Date: 5/28/10  
(Chairman)

Peter Bossaerts

Digitally signed by Peter Bossaerts  
DN: cn=Peter Bossaerts, o=US, ou=Caltech, ou=ISS, email=pb@iss.caltech.edu  
Reason: I agree to the terms defined by the placement of my signature on this document  
Date: 2010.05.26 00:36:43 -0700

Date: \_\_\_\_\_

[Signature] Date: 26 May 2010

Dean of Students: John F. Hall Date: 6/1/2010

Chair, Curriculum Committee: [Signature] Date: 6/4/2010

California Institute of Technology

INDEPENDENT STUDY PROGRAM PETITION

ISP CONTRACT

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Course #: \_\_\_\_\_

Student: \_\_\_\_\_

Responsible Faculty Adviser: \_\_\_\_\_

Subject Area: Decision Neuroscience

Time Period: 2009 to 2012 Units of ISP Credit: 182

**Course Description:**

Decision Neuroscience is an interdisciplinary subject of behavioral biology, neuroscience, psychology, and economics. It is the study of how people make choices, what influences these choices, and how to predict the choices people make.

**Student Commitments:**

Student will meet with advisers at least once a term to discuss courses, progress, and other major/career related topics. Student must attain ~~184~~ units of ISP credit to graduate.

**Adviser Commitments:**

Adviser will meet with the student at least once a term to discuss courses, progress, and other major/career related topics. Advisers will also monitor the student's progress to ensure that she is passing well.

**Method of Grading:**

Grades or Pass/Fail as deemed appropriated by student and advisers

**Agreement with above contract:**

Student: \_\_\_\_\_ Date: 5/27/10

Chairman, Student's Advisory Committee: [Signature] 5/28/10

Evaluation by Chairman: \_\_\_\_\_

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California Institute of Technology

ISP PROGRAM APPROVAL FORM

Student Name: \_\_\_\_\_

**Course of Study\***

Sophomore Year

Term	Course #	Units/ Term	Title of Description	Instructor
1,2	Ma 2ab	9	Differential Equations, Probability, and Statistics	Flach, Borodin
1,2	Ph 2ab	9	Waves, Quantum Mechanics, and Statistical Physics	Martin, Filippone
1	PS 12	9	Introduction to Political Science	Ordeshook
3	CNS/SS/Psy/Bi 102B	9	Brains, Minds, and Society	Bossaerts, Camerer, Koch, Rangel
3	CNS/Bi/Psy 120	9	Consciousness	Koch
3	Ec/Ps 172	9	Game Theory	Enchenique
3	An 150a	9	The Caltech Project	Ensminger
3	IST 4	9	Information and Logic (Menu Course)	Bruck
1,2,3	HSS electives	9	HSS electives	

Junior Year

Term	Course #	Units/ Term	Title of Description	Instructor
1	ACM 118	9	Methods in Applied Statistics and Data Analysis	Tropp
1	CNS 150	10	Introduction to Neuroscience	Kennedy, Lester, Adolphs
1	CS 1	9	Introduction to Computer Programming	Vanier
2	CNS/SS/Psy/Bi 102A	9	Brains, Minds, and Society	Bossaerts, Camerer, Koch, Rangel
2	CS 11	3	Computer Programming Language	Pinkston, Vanier
2	CNS/SS 251	9	Human Brain Mapping: Theory and Practice	O'Doherty
1,2, or 3	Lab/Research	tbd	Lab/Research	tbd
1,2,3	ISP electives	9	ISP electives	tbd
1,2,3	HSS electives	9	HSS electives	tbd

Senior Year

Term	Course #	Units/ Term	Title of Description	Instructor
1	CS/CNS 171	12	Introduction to Computer Graphics Laboratory	Barr
1	Ec 122	9	Econometrics	Sherman
2	CNS/Psy/Bi 131	9	The Psychology of Learning and Motivation	O'Doherty
3	En 84	9	Science Writing	Youra
1,2, or 3	Lab/Research	tbd	Lab/Research	tbd
1,2,3	ISP electives	9	ISP electives	tbd
1,2,3	HSS electives	9	HSS electives	tbd

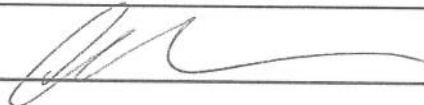
\* This schedule may change depending on when courses are offered. A list of proposed requirements for the major are on the next page.

Approved: Committee of Three

 5/28/10

Peter Bossaerts

Digifly signed by Peter Bossaerts  
DN: cn=Peter Bossaerts, o=UCSD, ou=EECS, email=pob@ucsd.edu  
Reason: I agree to the terms defined by the placement of my signature on this document  
Date: 2010.05.28 03:29:26 -0700



Date: 26 May 2010

## Independent Study Program: Decision Neuroscience

### Required Courses:\*\*

#### *Choose one from:*

ACM/ESE 118	Methods in Applied Statistics and Data Analysis
Ma 112ab	Statistics

#### *At least 12 units from:*

BEM 190	Undergraduate Research Project
Bi 22	Research in Biology
CNS 180	Research in Computation and Neural Systems
Ec/PS 190	Undergraduate Research
Ec/PS 160abc	Laboratory Experiments in the Social Sciences
Bi/CNS 162	Cellular and Systems Neuroscience Laboratory

#### *Required:*

Ec 11	Introduction to Economics (completed)
PS 12	Introduction to Political Science (completed)
En 84	Writing Science

Bi/CNS 150	Introduction to Neuroscience
CNS/SS/Psy/Bi 102 ab	Brains, Minds, and Society

CNS/Psy/Bi 131	The Psychology of Learning and Motivation
CNS/SS 251	Human Brain Mapping: Theory and Practice

PS/Ec 172	Game Theory
Ec 122	Econometrics
CS 1	Introduction to Computer Programming
CS 11 (or ACM 11)	Computer Language Shop (or Intro to Matlab and Mathematica)
CS/CNS 171	Introduction to Computer Graphics Laboratory

#### *Choose 45 additional units from:*

ACM 11	Introduction to Matlab and Mathematica
An 135	Primate Behavior
An 150 ab	The Caltech Project
BEM 101	Introduction to Accounting
BEM 103	Introduction to Finance
BEM 106	Competitive Strategy
BEM 110	Venture Capital
BEM 116	Advanced Business Strategy for Technology
BEM/Ec 146	Organization Design
Bi 152	Introduction to Neuroethology
Bi 156	Molecular Basis of Behavior
Bi 199ab	Special Topics in Computational Biology
Bi 202	Neurobiology of Disease
Bi/CNS 184	The Primate Visual System
CNS 100	Introduction to Computation and Neural Systems

CNS/Bi 256	Decision Making
CNS/Bi/Ph/CS 187	Neural Computation
CNS/Bi/Psy 120	The Neuronal Basis of Consciousness
CNS/Bi/SS/Psy 176	Cognition
CS/CNS/EE 154	Artificial Intelligence
CNS/SS 252	Experimental Design and Research Methods in Cognitive Neuroscience
CNS/SS/Psy 110 abc	Cognitive Neuroscience Tools
CS/CNS 176	Introduction to Computer Graphics Research
Ec 116	Contemporary Socioeconomic Problems
Ec 121 ab	Theory of Value
Ec 131	Market Design
Ec 132	Auctions
Ec/PS 160abc	Laboratory Experiments in the Social Sciences
HPS/PI 134	Current Issues in Philosophical Psychology
Ma 12	Chance
PS/Ec 173	Cooperation and Social Behavior
SS 201 abc	Analytical Foundations of Social Science
SS 205 abc	Foundations of Economics
SS 218	Neuroscience Applications to Economics and Politics
BEM 190	Undergraduate Research Project
Bi 22	Research in Biology
CNS 180	Research in Computation and Neural Systems
Ec/PS 190	Undergraduate Research
Ec/PS 160abc	Laboratory Experiments in the Social Sciences
Bi/CNS 162	Cellular and Systems Neuroscience Laboratory

*This adds to a total of 182 units for the ISP major.*

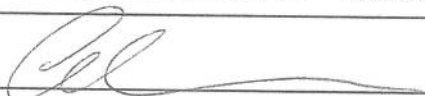
\*\* This list may be changed if a course is not available prior to my expected graduation date. Changes must be approved by the Committee of Three and the Dean of Students.

Approved: Committee of Three

 5/28/10

Peter Bossaerts

Digitally signed by Peter Bossaerts  
DN: cn=Peter Bossaerts, o=US, ou=Carroll, email=pbossa@hawaii.edu  
Reason: I agree to the terms outlined by the placement of my signature on this document  
Date: 2010.05.28 09:22 -0700



Date: 26 May 2010



# CALIFORNIA INSTITUTE OF TECHNOLOGY

DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES 228-77  
Pasadena, California 91125  
Prof. Ralph Adolphs      Phone: (626)-395-4486  
Email: [radolphs@hss.caltech.edu](mailto:radolphs@hss.caltech.edu)

June 8, 2010

RE: Decision Neuroscience Major for

To the Curriculum Committee:

I have discussed closely with \_\_\_\_\_ her plans for an independent major in Decision Neuroscience. Together with her other advisors, we have put together a curriculum that I believe both satisfies the rigors that any major at Caltech should, and is specifically tailored to take advantage of the highly interdisciplinary array of courses we offer relevant to Decision Neuroscience.

I strongly endorse \_\_\_\_\_ planned curriculum.

Sincerely,

A handwritten signature in cursive script that reads "Ralph Adolphs".

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Ralph Adolphs, Ph.D.  
Bren Professor of Psychology and Neuroscience