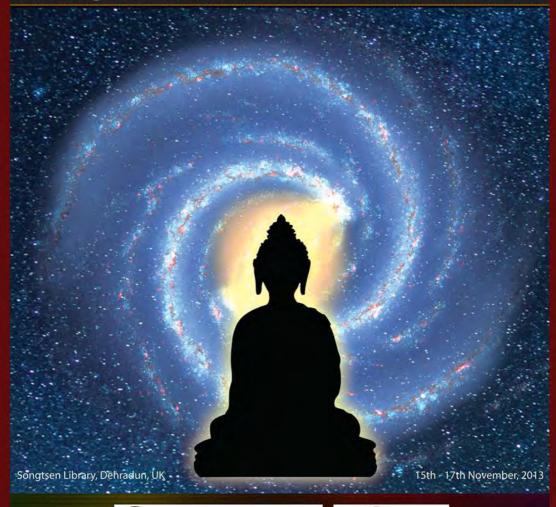
# Knowing 6 Consciousness II Knowing 6 Action

A dialogue between scientists & buddhist scholars





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JOHN TEMPLETON FOUNDATION

### ळ्च वस्य ५५५६ हि । चस्य

हुं . खं. ४००० ख्र-ज्व् स्वाची-पहं स्वाचि क्षेत्र स्वाच क्षेत्र स्वच क्

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७) ८.क्र्यान्त्राची.पहुचा.हेब.ज.हूमायहूय.पट्या क्ष्य.ह्या.ट्ट.वट.यहु.चमा हुहु. खेबामा.यमा.पट.वीट.बु.पहुचा.हेब.ज.हूमायहूय.पटान्या क्ष्य.ह्या.ट्ट.वट.यहु.चमा हुहु.

- त्रक्षां क्षा स्वास्त्र स
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#### ळ्वस्तर्धःसूरा

णद्रान्यात्र स्वर्थः विकास स्वर्थः स्व प्रवर्णः प्रवर्णः स्वर्थः स्वर प्रवर्णः प्रवर्णः स्वर्थः स्वर्यः स्वर्थः स्वर्थः स्वर्थः स्वर्थः स्वर्थः स्वर्थः स्वर्थः स्वर्यः स्वर्थः स्वर्यः स्वर्थः स्वर्थः स्वर्थः स्वर्थः स्वर्थः स्वर्यः स्वर्थः स्वर्यः स्व

# ज़ित्र'न्न'म् न'ळें अ'हे 'ह्नम'ने अ'ई ग्रथ'हे न'न्स| ग्रवत'य'अन्य| ह्व'त' ११ केंब' १५ २०१३

ळ्यायान्या हासूपुरा हा १ १०० वस १०० ४०

त्तुः पत्ते तुः विष्यः पर्ते तुः हः त्त्वरुषः । वेत्रयः त्रशुः तृदः हें तुः त्रशुदः त्रभृत्। त्रो त्रभे यः भ्रुतः हें तुः याष्यः तृदः हें तुः त्रे यो। स्टिं हें तुः कें त्रा

र्म.ट्रेंद्र.सिया.क्ट्र्ट. ६ ८५ वया १० ३०

नर्हेन्'निष्णे वन'नर्ष'ळव'नेन्'ने'क्रस'निष्ण'क्षेनस'नम्न' नर्षे'मेस'न्युख'ख'त्रह्न्।स्था

त्यकाश्चरकाश्चरम् । प्रची प्रची का प्रमुख्य ।

#### वर्ह्स् ५'र्स् क'श्ले ५'र्स्।

श्रॅमशः क्वें प्यतः द्वायः द्वायं विश्वर्थम् अर्थे मश्रायः प्यतः स्वायः स्वायः स्वायः स्वायः स्वायः स्वायः स्व दशन्ते सामाध्यात्मात्म् वास्त्राम् स्वामास्त्राचनुष्यात्मा स्वामा क्रि. ह्या स्वामानम् स्वामास्त्रात्मा ष्ट्रमाः द्ध्याः अर्दे । उत्था त्राया मातृदाः सुनाया यायाः है । भ्रादाना सुद्रया या प्रवेद । स्वीदा स्वीदाः सु नवै र र्र्भेन होन नने न सामन निकास सुवाय विद्याप वि द्वारा वि देश हार सामन निवासी होन यम। क्रन् सन्दर्धन से दानी निर्मेशसक्षम तमा तस् मान्य क्रन् साम्यन सम्मे विवास स्वास्त्रे स्पर्वास्य विष्ट्रिया स्वास्त्र स्वास्त्र स्वास्त्र स्वास्त्र स्वास्त्र स्वास्त्र स्वास्त्र स श्चेरःर्ह्वे नारःविनाःधुवःवःवःद्रनाःभ्रनशःर्ने स्वःदेवःठ्वःवेनाःर्धेन्यवे दरःद्वशःर्वेनाःवेवः दशःसर्वे नद्वन्याः हे सर्देदः शुसः नरः ५६ नः मदेः रेसः मः ५२ रे ह्वे 'धुयः यः ५६ नः र्ख्यः इनः देदर्भे अ:दे:धेदा वें गम्ने अ:दशः अर्वे :यहंगशः दर्वे अ:यदे :देशः यः येदा भ्रवशः देः हे : ळॅंबरद्रबरद्द्रवासःऍन्रया थेन्रन्ध्रॅन्स्ट्रहेशन्सवाद्रवासदरःऍन्सयाबन्। वनःगनः अर्देवः शुअः दशः दह् गः नः षदः ष्पेदः गोः ष्पेदः सः रः र्क्षेत्रः शुदः नशः शुन। देवः ग्रहः वदेर-ब्रॅग्-सर-से-चल-चढे-क्वॅ-च्वे-ब्र्ग्-स-म्हेग्-लॅग्-ले स-दस-सॅद्र-सुस-नर-देस-मुकास्यायतह्नाः द्वाः स्वाः वहात् । देः स्वाः स्वाः मुकाः स्वाकाः स्वाः स्वाः स्वाः स्वाः स्वाः स्वाः स्वाः स क्षायदेः नवरः वीषाध्याने रः श्चें पदेन वाषान् रः श्चरः पदेन या ग्रीः वें वाकी यावहुरः वीरा हुः यळ्वॱयः नहेव व्यान्ययः क्वें विनः हुः नहरः नयः नैयः नविवः वे र्ळे यः न्रः धीनः न्र्डें नः हेयः न्यनाः इस्रमः भ्रीः विरा हे सः न्यनाः नीः क्रुवः यरः यरः ने स्यान्य स्थान्य र स्थे सः न्राय्य देवः शुस्रादेशक्रीसावतुरावदे वी देसावी वा व्यवस्था देसामावदे वे व्यवस्था स्थाना *ॸ*ॖॸॱज़ॸॱऄढ़ॱॸॖढ़ॱक़ॕॴॸॖ॓ढ़ॆॱज़ढ़ॴख़ॖज़ॴॱॾ॓ॱॸढ़ॏढ़ॱॴऄॴॴढ़ॏॴॱॹ॓ॱॾॕॴढ़ॴक़ॕॴड़॓ढ़ॆॱ न्यत्राखन्य भेषात्रवर्षा होत् सान्दायला होता यहार्ये । यहार्यस्य होता वहार्या ढ़ॖॖ॔ख़ॱॸॶॸॱॸढ़ॆॱॶॖॖॖॻऻॺॱख़ॱॾॣॕॱॸॖ॓ॱॸ॒ॻऻॱऴॕॸॱॺॱॸ॒ॸॱऴऀढ़ॱॹ॓ढ़ॱॻऻॸॱॵढ़ॱॹॖऀॱॸ॒ॿॖ॓ॱॺऴ॔ॺॺॱਘॸॱ

(प्रियान्तर्भन्यः ३५ द्वःद्वे न्यं व्यान्यः व्यान्तः व्यान्यः व्यान्यः व्यान्यः व्यान्तः व्यानः व्यान्तः व्यान्तः व्यान

#### मुर्से त्राच्या मुर्च मुर्च व व व १११००

इ.ट्रं<sub>डुंचे</sub>.विच.क्ट्रंट. ४४।०० वस. ४४।८५ इ.ट्रंडुंचे.विच.क्ट्रंट. ४४।०० वस. ४४।८५

#### नर्हेन'र्नेन'क्षेन'र्ने।

(प्राप्तान्त्रस्थात् क्ष्रस्थात् क्ष्रस्य क्ष्य क्ष्रस्य क्ष्रस्य क्ष्रस्य क्ष्रस्य क्ष्रस्य क्ष्रस्य क्ष्य क्ष्र

बृर्देवे:स्रुणः क्षेत्रः ११ । ८५ त्रा से हे देवे:स्रुणः क्षेत्रः ११ । ३०

### नर्हेन्'न्वि। नॅन्'ग्री'न्बर्भन्नेन्न'र्हेन्न्र

श्चव्यः न्यास्य स्वास्य स्वास्य

#### नर्हेन'र्नेन'क्षेन'र्ने।

(जन्मानन् भूरामा ३५ ५८ ई.च.ईमालदालाभूरामा१०)

नेत'न्मुन'मर्सेस'ळेमसा धे'र्झेदे'ध्रम'ळेन' १११० वस' ११००

ङ्गाः ह्याः स्थापन्त्रस्या द्विः द्विष्ट्वमाः स्वतः १०० वसः १००

#### <u> नख्नसःश्रं सःनगरःनष्ट्रम्</u>।

चर्त्वाकाः क्षेत्रः भूत्रः याद्यः अप्तात्वा क्षेत्रः निष्टे से अध्यायी क्षेत्रः चर्त्वाकाः क्षेत्रः याद्यः याद्यः अपित्रः क्षेत्रः याद्यः विष्टे से विष्टे

### न्रस्ति। प्रमासेन। धुन्। स्ति। १०० वसः ११००

ळॅनस'तुस'नदी'म। धुन'ळॅन' भात्र० दस' ५१७०

**पर्वे प्रसम्बद्धाः स्टाप्त स्टाप्त स्टाप्त** 

चर्च् भ्रीत् न्यात् स्था ४०। क्ष्मायाय प्रति भ्रीत्याय प्रति वित्यात् स्था क्ष्माया क्ष्माया क्ष्मायाय क्षमायाय क्ष्मायाय क्ष्माय क्ष्माय क्ष्माय क्ष्माय क्ष्माय क्ष्माय क्ष्माय क्ष्माय क्ष्मायाय क्ष्माय क्

# निवरश्चेत्रप्र हैं क्रिंस् क्रिंस हैं निक्ष क्षेत्र १८।

ळॅनस'नुस'न्न'या स्'र्नेते'स्चन'ळॅन' १०० नस' १०५

पड्डेल'लस'झुक'प। पड्डेल'लस'झुक'प।

ग्रसः मुनः नभूत्। इ.सः नेंद्रः ग्रीः द्वेः सर्हेद्रावदः नीः क्वः देवाः वसः ग्रीद्रा

#### नर्हेन'र्नेन'क्षेन'र्ने।

न्यान्त्रित्त्युन्यायाः स्रीतित्वरान्यम् क्षेत्रान्त्रान्त्राम् न्यान्त्रान्त्रान्त्रान्त्रान्त्रान्त्रान्त्रा रे·र्वेद्रःधेनानीःनहःळदःन्वेनाःळदःरेनानीःनहःळदःनविःखःयःर्श्वेदःळेनायःद्राः। *प*दः भूनशः रे : दरः पदे : नृतुरः खुन्। शः ग्रे : नृत्रः कर् : अरः दृना : है नृः यः । अदः यो नृः दृशः दृः दृना : दृर । अष्ठअःमदेःसेनःक्षेत्राःसेन् मःने प्दनःर्षेतःत्री र्षेत्। नःर्केश्वःत्रेशःक्षेत्राःसे प्दनःनःत्राहेशःग्रीः भूराताचित्रवासी भूरासर्। भूराक्ष्यातरासक्षरभाष्ट्रराजरारीवाचिराची भिराजूरमा यमार्देवायार्क्केटमामराह्येदासादे द्वारंभेदा ही भी देवायर्देवासेदाहे माना ही देवा नाबुदःशॅर्भेर्न्दःदेनानाबुद्रःशॅर्भेदेशेद्रःक्षेन्द्रिन्द्रदेवे नेर्द्रिन्द्र्यःद्र्यःक्ष्यःवावशः ऍन्। नवन-र्नेद-प्दे-नन-ने-भेश-हेनश-पश-ने-वेर-न्द-र्यन-हेनश-श्रेय-मुन-पदे-यद-· र्वेन्या से दार्केन्या दे रहें त्रा में हिंदा से त्य दा का से दा का से क धेन् न<sub>बन</sub>्नु न्वें शासदे भ्रुषाया नहें न ने प्वें प्रदेश हें न्या प्रदेश सुन्ते शाहें न्या ब्रनःसरःरुषःर्क्षद्रायम् राष्ट्रीःर्ष्यद्रा वायाने राक्षः चलदास्रावदः स्वरःस्वरः स्वरःस्वरः स्वरःस्वरः र्देशःदशःधेरःग्वनःप्रःमरःगरःसह्गःर्धेशःग्रेरःपरःसःर्धेगशःद। दःर्केशःदरःर्केशः <u>५८.क्ष्र-५७.ची.चर.क.चेश्वः चत्रुक्ष.च.क्ष्र्यः वर्षे क्ष्र्यः वर्षे का</u> (गहसानभूरासा ३५ ५८ ई.च.ईसायदायासूरासा१०) र्ब. ट्रेंदु. बीचा. क्रूटे. बिल्स वेश. १०। ५०

#### नर्हेन'र्नेन'क्षेन'र्ने।

बरःसदः विष्टाः खेवायाः ययाः इत्याः सदेः नयसः श्रें सः क्रीः द्रस्याः येदा द्रोतः द्री दिः विषयः र्राष्ट्रवास्त्रेरावीः क्षेत्रार्रा परादार्ह्वे क्षेत्राची प्रवस्थान क्ष्रित्वस्थान *५८:क्षेद*ःहे : श्रॅन्यां शक्तं सेना सः इस्र शत्यः ग्लान् । सर्वे : त्ये : त्य बर-रर-लेब-के-चर्र-चर्ह-नाले-चर्र्डनाक्रमाळम्ब-धर्म- महस्य-मन्दिन-*ॱ*ॴॺॸॱॸॖॱॸॿॸॱय़य़॓ॱॸॺॺॱॾॣॕॹॱॸ॒ॸॱढ़ॿ॒॓ॺॱॸय़॓ॱॸॖॸॸॱॾॱऴऺढ़ॱॸ॓ॴॱॺऀॱॿ॓ॸॱॺय़॓ॱढ़ॸॱढ़॓ॱ ૄઽૺૹૻૡૹૢૻૡૻ૾ૹ૾ૢ૾ઽૺૠૢૻૣૻૣ૾ૣૢૻઽૼ૾૽ૢૢ૿૽૾ૢૺઌઌૺ૱ૢૢૼૻૹૣ૿ૼૼઌૼ૱૽૽ૼૺ૾૾ૺૺૺ૾ઌૺૺૹ૽૱ૹૹૻૢ૾ૹ૽૽૱ૹૹઌૢ૽૱ૹૺૺૺૺૺૺ ळॅं न्यायायदे :ब्रह्म क्षात्र :ब्रह्म न्यायुन्य अनुवादा :ब्रह्म :ब्रह्म :ब्रह्म :ब्रह्म :ब्रह्म :ब्रह्म :ब्रह्म <u>ॼॖ</u>॓ऀॸॱॹॖ॓ॱऒ॔ॸऻ॒ॱॸॱक़ॕॳॱॺॸॣॺॱॺऄॱॸॼॸॱॼॖॱॸढ़ऄॱज़ॸॱख़ॖ॓ॸॱॹॗॕॸॱॺॗॕज़ॱ नश्चरः विनः सर्देरः द्यान्ते दासुः दरा देशः नश्यः श्चेत्रः स्त्रीः हस्यान्ये दास्याः दयः स्त्राः स्तरः स्तरः ळण्यान्त्रीं नान्तान्त्रीते होनाय्या केषान्त्रीया सुर्वेषा सुर्वेष ૹ૽૾ૢૺ<sup>੶</sup>ૢ૱૱૽ૡ૽ૺ૱ૢૡ૱ૡ૱૽ૣૢૻૼ૱૱ૢૣ૽૱૱૱૽ૡ૽૽૱ૣઌૢ૱૱૱ૢ૽ૢ૽ૼૺૢ૱૱ૡ૱૱૱૱ૢ૽ૼ૱૱૱૱ चेत्रसम्बर्गन्दान्यस्त्रात् १ १ सम्बर्धन्यः स्टेडिं स्मृत्यदे स्वर्गम्यः सेसः म्रीः मृत्यसः चेत्रम्यः स्वर्गान दन्नदन्दन्तः सन्तर्भवे । स ऍ८। ङ्गार्टेबर्,ञ्चेंब्रःश्र्य्यायेदःग्रेःश्चेंदःचह्र्यःदरःर्ड्याःस्यःत्व्ययायाद्याः स्वराह्यः <sup>5</sup>્રસ:ૹૅૅઽ-સુઽ-૬.૪સ:ૹ૾ૢ૽૽ૄઽૣ૾૱੶ૡૡઽ-ૹૣઽ-ૡૡ૽૾૱ૡૡઌૢ૱૱૱૱૱૱૽ૢ૽ૡઽ૱ઃૠૢૢૺૡ੶ૡૡૺ*ઽ*੶ देश ऍट्। सर्देरादा क्रस्या देश पर्ने प्रवासिया द्रास्त्र होते हो स्वास्त्र होता प्रवासिया होता है व र्बेट्ट प्रमान्य के प्रमानी के अपने मान्य प्रमान के प्रम (गहस्रानन्दाभूरासा ३५ ५८ ई.च.ईसायदायाभूरासा१०)

#### न्रस्ति। नरान्रेर। इन्द्रिष्ध्रमा छ र १०१७० वसा १०१००

इ.ट्रंषु:श्चेया:क्क्ट्र, १९१०० यस. १८१८ १

#### नवुगम्भः अत्यानगतः नष्ट्रम्।

यविवाशःश्चान्यम् सम्बाह्म स्वाप्त क्षित्रः विवाशः स्वाप्त विवाशः स्वाप्त सम्बाह्म स्वाप्त स्वाप्त स्वाप्त स्वापत स्वाप्त स्वापत स्वापत

(वर्चे. भ्रेट. रेश. सिय. भेर. भारता करा। (वर्चे. भ्रेट. रेश. सिय. भेर. भारता करा।

स्याः केंद्रः ११ | ६५ दशः १२ | ३०

नहॅन्'निवि। कॅस'ळव'र्नेव'निलेम'न। नुस'मनस'लेम'निकेन'पिते'व्र' नस्राञ्जीय'न्न'ळव'रीन

कृ.चर.क्ष. इ.च.चक्षे.चर्याचरा । कृ.चर.क्ष. इ.च.चक्षे.चर्याचरा ।

#### नर्हेन'र्नेन'श्लेन'र्ने।

स्वर् देना-न्दः नम्भाः क्षेत्रः वे नम्बरः द्वन्यान् नम् क्षेत्रः विद्यत्ते न्त्रः विद्यत्ते । विद्यत्त्रः विद्य द्वर् देना-न्दः नम्भाः क्षेत्रः वे नम्बरः द्वर् नम्बरः विद्यत्ते । विद्यत्ते निद्यः विद्यत्ते । व

क्षेॅरॱनविदे निह्न परिदे र्रेंद्र नर पेद देवा दर्या पर्यापद के प्राप्त की विद्याप्त की विद्याप्त की विद्याप्त र्श्रे न्या का क्षेत्र का क्षेत्र का क्षेत्र का स्वाप्त है ते स्वाप्त की स्वाप्त की स्वाप्त की स्वाप्त की स्वाप मःतिनानीः ईनान्यः न्द्रीन्यान्यः प्रिनाः धुवान्तीः प्रवस्त्रान्यस्त्रः न्द्रम्यायः देवान्यः देवान्यः व्यानाः व्य व्यानाः व्याना वज्ञ बाक्षेत्र में विश्वेत खें न कुन। न काने वे न कन सक्त बाबा साम्राम खें ना के ना सम ५.५४.८४४.७५८.पाड्नि.सह.पार्ट्र.पार्ट्र.पार्च.कुर्य.पाना.वु। रन्प.य.य.सह.सह.सूर.सह. नार्डः म्र्रान्ति । यहारा महिला स्वार्था विष्या निष्या महिला स्वार्था स्वार्थी स्वार क्षे। रट.वैट.प्रिश्नभ.शे.शुषु:श्रीवाश.मेवेय.इ.लूट.ज.र्झेर.ट्यूशा क्ष्म.चेटश.शट.सूषु:ह्र्या. ळंदःरेना'षरःकुषःधेदःषॅन्'रे। युन्'ङदेःनर्वे 'रेना'न्रःनर्देशःश्वेरःश्वेषः'र्देषः'रेना'नशः ग्रुट्राट्कें शुर्धोद्वर्षे वाट्राट्कें शावाद के शावात्वशासू वाच दे क्षेत्र शाक है दे त्या है रावा स्थाने वा <u>ॼॆॖऀॸॱॹॆॖॱॲ॔ॸऻ</u>ॱॱऴ॔क़ॱॸॆऀॺऻॱऴ॔ॸॱॺढ़ऀॱढ़ॸॱॺऻॸॱॿॴॱॴॶॖॖॖॖॺॱय़ॱढ़ॏॴॱॵॱॹॸॱढ़ॏॴॵॱय़ढ़ऀॱ क्रुं सक्दरमानहेद। विराक्षेत्रारा हेराय सुराना मेर्दर क्रुरा से दाने रामित देवाः मरः भेदः श्रेः नदेः नः ॲंदः वीः ॲंद्रा देः देः दुः शः ॐंदः वृष्ठे वाः यः *खंदः* देवाः दृदः *खंदः ऋ*यः दवेषः क्रुअः ग्रीअः स्टः हेदःषः दशुरः चः श्वाकः क्रेः द्वनः पदे ।वशः येदः ग्रुअः पदे र्देसः दह्नुषः अर्देव मश्य दें दः र्वे व पा धेवा

द्रान्तः क्षुं न्यात् विद्रान्तः विद्रान्तः

त्रचुर्-त्रश्चर्ने क्रिंश-क्रिंश-व्रक्तं चुःकुः भेदा व्याप्त व्यापत व

ने ब'न्मुन'मर्से स'क्रेम्स। धे'र्दे दे'ध्रम'क्रेन' १११० वस' ११००

# ङ्गाः ह्याः व्याप्त स्थाः व्याप्त स्थाः स्था स्थाः स्

चर्हेन्'म्बे। न'ळेते'ळेन'मेस'स'कु'क्केन'नन'झनस'तहेन'छेन्'म्। न्नो'नक्षेर्राः कुनार्हेन्। इ.स.सॅन्'क्के' द्वे स्ट्रेन्।वर्गानक्षेर्रा

#### नर्हेन'र्नेन'क्षेन'र्ने।

(जिन्मानम् निमान दे र् न्राहे नाहे मानदाया भूरामा १०)

द्यमाः क्षेत्रः श्राच्य

#### नर्हेन'र्नेन'क्षेन'र्ने।

द्ध्यात्र्यस्यात्रेत्राचे न्यदे त्यदे व्यक्ति त्ये न्यदे त्यक्ष्यात्र व्यक्ति त्यक्ष्यात्र व्यक्ष्य व्यवक्ष्य व्यक्ष्य व्यवक्ष्य व्यवक्षय व्यवक्ष्य व्यवक्य व्यवक्ष्य व्यवक्य व्यवक्ष्य व्यवक्ष्य व्यवक्ष्य व्यवक्षय व्यवक्षय व्यवक्षय व्यवक्षय व्यवक्षय व्यवक्षय व्यवक्षय व्यवक्य व्यवक्षय व्यवक्षय व्यवक्षय

(जन्मानन् भूरामा ३५ ५८ है नहें नहें सामनाया भूरामा १०)

मर्से संदि 'चर'म्बेर'। द्यम'र्ह्मे र अ१७० वस ६१००

ळ्यायाच्चेरसाचधिना चिनाः स्ट्री ००० वया ५०००

#### **चलुगस'ॲस'चगर'चह्नू**म।

# क्रिक् 'म्राह्म अप्ता न 'क्रिक्स 'सम् 'म्राह्म 'हि 'त्र होत्र | हो 'स्य प्रमाण महास्त्र हो 'त्र हो हो । विकास स्वाप्त हो 'स्य हो हो हो । विकास स्वाप्त हो स्वाप्त हो । विकास हो । विकास

ळॅगस'वेरस'र्र'या १००' इस' १०१७०

चर्ह्न प्रावि । न्न क्रिये प्रश्चल के प्राव क्रियं प्रश्चल के प्राव क्रियं प्रश्चल क्रियं क्र

#### नर्हेन'र्नेन'क्षेन'र्ने।

यदंशःश्चिरः वदः द्वारः इतेः यह्न गःश्चितः श्चितः विद्याः यावितः विद्याः यावितः वद्याः यावितः वद्याः यावितः वद्याः यावितः वद्याः यावितः वद्याः यावितः वदः यावितः यावितः वदः यावितः यावित

च्युत्यः त्रेना त्रव्यः स्वीत् न्वातः श्रुंतः च्युत्यः त्रव्यः त्रव्यः विवाद्यः विवादः विवाद

- ग्रभः ग्रमः प्रदेशः विद्याया न्यरः इतेः त्र्याः सेवाः न्याः व्रमः व्याः व्यः व्याः व्याः व्याः व्याः व्याः व्याः व्याः व्याः व्याः व्यः
- क्रुवःश्वरायः धेवः विश्वरायः प्रदानित्वा नियम् इते । व्यव्यायः स्वार्थः स्वर्थः स्वार्थः स्वार्थः स्वार्थः स्वर्थः स्वर्थः स्वर्यः स्वर्थः स्वर्थः स्वर्थः स्वर्यः स्वर्यः स्वर्थः स्वर्थः स्वर्थः स्वर्यः स्वर्यः स्वर्थः स्वर्यः स
- વર્ષા-વિવારના ભૂ-શાના વારા કર્યા કિલ્લા ક્ષ્યાના કૃત્યા શ્રામાં સ્થાપ્ત કર્યા ભૂ-શાના વારા કર્યા તાલું ત
- र्हेर्न्न ऍ.क्शसीचाश्चरत्वीचाची.कस्पश्चरान्त्यादश्चर-स्था
- त्याव.त्य. श्रींच.क्या. श्रींच. क्या. क्

(विष्ठाःचन्तरः भूरः अस्य द्वाराः क्षेत्रः याद्वेत्रः व्यव्यः भूरः स्वः १०) विरः विरः विरः विष्यः विष्यः विषयः विषय विषयः वि

ध्याः क्ट्रेंट. ६१८५ दयः १०१३०

#### नर्हेन्'निवि। तशुक्ष'श्चिन्'लुन्'नदे'क्ष्य।

च्चे<sup>.</sup>चःक्षॅ.चेःर्रे। क्षॅरःगीतःक्षॅवाशःसदेःत्वादःदह्वःत्रःवाशरःदह्वाशःवादरःश्वादा

#### नर्हेर'र्ने मुश्लेर'र्य।

चैर-य-द्री श्री यी.क्ष्यु-योथ्य-प्रेट्य-प्रप्ट-प्रमुच-प्रकृत-प्रयाम-क्ष्य-प्रमुच-प्रम

क्षेरक्ष की या जात्र प्रची प्

(जानसायम् प्रमासा ३५ ५८:इ.च.इसायदायाश्रमासा

न्रस्ति प्रमासिन्। १०१७० स्र १११००

ळ्यास्य प्रमाण्डेसाया ख्रमाळ्या १०० वसः १९०० प्रमास्य स्थापनातः प्रमा

प्रमः म्र्री नेया म्राज्याचा स्वाप्ता वित्रास्त्र स्वाप्याया म्र्री त्या स्वाप्ता स्वाप्ता स्वाप्ता स्वाप्ता स्व

सूर्यायहेव नवर सम्बा र्वे ने यान्

मूर्यास्यान्यास्य स्वा

#### ने द'न्मुन'म्बस्थि म्बा १११४० दब्र १।००

ळ्यासाच्चेत्साम्बुद्धाःम् ग्रात्र० वसः त्राग्र५ ११३० वसः १११५

नहॅं न्'नित्ते। सम्'नष्ट्रम्'न्न्'। अम्'न्य्येम्'स्यम्'न्नेन्'सते'तर्मे 'न' अति'वनस'स्यामसम्या

र्ने ने से सूर्

#### नर्हेन'र्नेन'क्षेन'र्ने।

क्रॅं स्वर् स्वामित्रक्षेत्रस्य स्वास्त्र स्व

(जन्मानन् भूरामा ३५ ५८:ई.न.ईमालनालाभूरामा०)

सुगाः केंद्रः श्राग्य द्या ३।१५

#### नवुगम्भः अत्यानगतः नष्ट्रम्।

क्षेट्यायहुर्या पूर्याय्याष्ट्राधा सुन्धा स्थाप्ता च्याप्ता व्याप्ता स्थाप्ता सुन्धा स्थाप्ता सुन्धा सुन्दा सुन्धा सुन्या सुन्धा सुन्य

# নর্ল্র 'ন্নু ন'ব্দ'ল চ্নান্ত্র নাল কাল কাল কাল কাল কাল

न्नो निभानश्रुत न प्रमामा सर्केन

श्रीयःश्रीरः। श्रीयः वित्रः ये वित्रः वित्रः ये वित्रः

नार्वेदर्यन्दरळे अर्वेदे र्श्वेदर्यंदर्वेदर्वे नार्दर्श्वेदरम्बदर्येदर्ये नार्वेदर्य यन्तरद्देव प्यर खेव। विर नी १३ समा हेन हो र खुया है। सर्वेर के मा शुर् पर पर हो र ढ़ॖऀ॔ऀ॔॔॔ॱऒॣॕ**ॸॱऒढ़ऻ**ॖॾॖॕ॔॔॔॔॔ॹऒॕज़ॸक़ॖॖॱॸ॔ॸॱड़ॗज़ॱॹॖॱय़ॸॱॷॖढ़ॱॻॖॴऒ॔ॸॱॸॱॸॸ॔ज़ॕॗॱक़ॗ॓ॸॱख़ॕॴॴढ़ॸ॔ॖॱ इनाः इः इंसः नुः निष्मः निष्नः निरः ईसः धेनाः श्चेतः धेन्। विरः नीः यसः निवे ने निवेदः अः देवेः यविषान्नयात्रम् यविषाप्तराद्रान्त्रम् मुलावराष्ट्रम् क्षेत्रम् विष्याप्तरायात्रे वावरायात्रे वावरायात्रे विष्य दर्जे : र्जें द निहर द अ : रें निय र अ : द्वे र निहर केंद्र । क्षेत्र निहर दें द दिना नी : क : द अ : द निर हों न ॿॆॎॸॱॹॖॆॱॺऻॿॆॸॺॱक़ॺॺॱॺॹॖॱॺऻॹॺॱॹ॔ॺॱॿॕॸॱय़ॱॸॣॸॕॹॱॺऻढ़ॏॱढ़ऴॸॱढ़ॺॕऻ॔ॸॱॸॣॸख़ॷॺॱॸ॓ॺऻॱ यसेयाः क्रुशः बदः यद्वेयाः नः द्याः बनः व्येदः स्वेताः देत्। देः नविदः विदः देः आद्रेदः अप्तः द्युदः ळॅवाश सेदे प्रवाद प्रहेद वार्विद य प्राप्त क्षय दर श्रुप र्श्चेत विर वी केद वर्श्चेत र्श्चेत र्श्चेत होत् स्राम्यान्तरायानायान्या वित्राचीयाञ्चराश्चेत्रतेषायान्तराञ्चराश्चेत्रश्चे न्देशित्रयानायाने स्राम्य ॱॳॢढ़ॱॻ॒ॻऻॺॱक़॓ॱॸढ़॓ॱॾॖॕ*ॺॱ*ऄ॔ॻॱॶॖॺॱॹॖॱॿॣॻॱॸॸॱॷॕढ़ॱॻॖॴॱॸॱॸ॔ॱॸॕॗॱॸॗऀॱॸॗऀॸॱॻॖ॓ॱऄॗ॔ॸॱॸ॓ॸॱॻऻढ़॓ॴ नासराईसानाबरार्धेन्। नेपनिबरळवारीनानीनेनानासुसानइससार्धेन्पाससाङ्गीर्वे १००७ व्य-त्रक्षः यथुष्यत्र में द्रा में देशासासर मुक्त हुशासामा है। व्या १०१० व्यन मह्याः है : क्षेत्रः तर्भे मा अभा विभागः नृहाः विभागः १०११ व्यत्रः वर्षे । हे : क्षेत्रः व्यवासः मा *बेशामानासम्* कें साम्रहराम्य प्रतास्त्र कार्या है । हे स्वति । हे स्वति । हे साम्रहे । हे साम्रहे । हे साम्रहे । होन्'नबिद'र्षेन्। श्वे'र्वे' ४००४ दश'नहुन्'न्नो'यन्द्र'नवे'र्छेन्'न्'र्कंद'नेना'नी'यश'नबिदे' <u> दरःसहस्रालुग्रास्त्रेन् नित्रामः नहस्राधिदा</u>

यश्चर्यानस्त्रम् वस्त्रस्य स्त्रीत्यास्य त्रे स्त्रीत्यः १६६ च स्त्रम्यवाधीवायरः स्रीसामार्याः साक्षासः

#### क्र:हे:भी गा:शे:हु:दे:रव:गवा

वित्तः मित्तः स्वार्तः स्वार् स्वार्त्तः स्वार्तः स्वारंतः स्वरंतः स्वारंतः स्वारंतः स्वारंतः स्वरंतः स्वरंत

#### कुंवान्त्राकुंन्त्रा

<u> क्रि.चीश.ट्र.बैट.रेशुचीश.यशकाचिट.लीकाषुःष्ट्रीट.केशश.लुप्रीचचा.ची.पट.चीशका.लीका</u> हें ग्रथः इनश्रः त्याः वित्राः प्रेत्। यन्श्रः प्रदेः व्याः प्रेतः त्येः त्यः त्येः द्वाः व्याः व्याः क्षेतः व नाकेरः विरानी प्रनो प्रने शार्क्के प्रवास प्रमुद्धा प्रदेश प्रमुद्धा प्रमार्श्के प्राप्त प्रमार्श्के प्रमार्थ प्रमार्श्के प्रमार्थ प्रम प्रमार्थ प् [यदःवी 'ङबःश्रे :दे :शव :इसःविहेश :ददः अहस :बे वः वी :ईवा दशः धुवः हें वाशः विदः निहः । *ची* श्रेट हे दे श्रें ट नहर वे अपदे प्याय नावे दे शें मा सुमा प्याय नावट सुया दि प्याय नावे प्य हे वै नितृत स्वानिकुत् सेर से अप्योत् र्श्वेत नित्तर होत् प्रवस् भी वा न्दर ने प्यार र्श्वेर श्वेस्य येदःग्रहेरःचव्नाः चुरुषः सः वेनाः धेद्याः सूदः सरुषः स्रेस्यः र्क्षेटः प्यायदः चुेदः र्क्ष्यः द्रदः सुरुषः षित्रयाची निर्मादारमा सामाना विषया हो। या यह हो न रहें या बना के बार में हो न समा होन् हो । प्राप्त ने नित्त नित्त ने से समान्त के नामी के नामा नित्त हो ने नाही । न्त्रोहर्मा स्वाकार्के नास्त्रात्रात्रे नास्त्रात्रे नास्त्रात्रे नास्त्रात्रे नास्त्रात्रे नास्त्र नास्त्रात्र ळॅं अॱ८्रधे गुरु नः हे 'गुरु ग्। त्र श्ले द्र' मदे 'श्लेन अ'श्ले' ८ नटः हः ८८ः खु अ'विस्रयः ग्री' दर्जे वः नदे ऄॣॕॕॸॱॸॣॹॖॸॱढ़ॏज़ॱॹॖॆॸॖॱॺढ़ॏढ़ॱऒॕॸॱय़ॱॸ॓ॱख़ॱॺहॆढ़ॱढ़ॺॱॺऻॿॆॸॺॱढ़ॹॺॱॿॕज़ॱय़ॱढ़ॏॹॱॸ॓ॸऻॗॱॱਘॸॱ र्वे*५*-५८:अे:ब्रॅं-देवे:ळंब:देवा:यश:यळर:ग्रुं:५न८:इवे:ळंब:देवा:वी:यश:ग्रु:बेवा:५८:यश: ૡૹૻૻૻૡ૽૽૾૽ૡ૽ૺ૾ૹ૽૽ૼૡૻૹૻૹ૽૽ૼૡ૽ૻૡ૽૽ૺૡૹૹ૾ૢૼ૱ૡ૽ૼૡૻ૽૱૽ૢૼ૾૱૽૽ૺૡ૽ૺ૾ૹ૽૽ૣૺૼ૱ૡૡ૽ૼૡ૽૾ૢૺૡ૽૽ૹ૽ૼૡ૽૽ૡૡ૽ नसूर दर्शे निवेद रावे नार्या प्रेनिया सुवादी से प्रेनिया में प्रेनिया में प्रेनिया में प्रेनिया में प्रेनिया में रदः दर्ळे : मुनः मदे : ळंदः देवा ऄॣॕ नः ब्वेदः ठेवा व्यॅदः नः ग्रेदः कुः देः व्येदा

#### वे अव शे श

चल्चे स्वाप्तान्त्रम् स्वाप्तान्त्रम्यस्वाप्तान्त्रम् स्वाप्तान्त्रम्यस्वाप्तान्त्रम्यस्वाप्तान्त्रम्यस्तान्त्रम् स्वाप्तान्त्रम्यस्वाप्तान्त्रम्यस्वाप्तान्त

#### শৃশ্ব:মুব:নম্বুবা

#### छो देगा उन्न वर्

ॉिं र<sup>्</sup> हे 'ह़स्रक्ष' द्वेच 'नाहर सामह 'ग्री' रचर 'श्रदे 'कंद' रे न' रा' दे ना' रा' दे ना' रा' । या र 'स्कार स षदानुन्द्वार्नाहर्षे निरायकार्चेनामदे न्नराहते ह्यारेनाका नुन्नराहदे सायनाया न्याया में वा मे लबा.श्चिमाबहेरावरावया.श्चिमार्चेराची।श्चिमार्चेमा श्चीःला १६८६ वया १६८६ वरा क्तिः वरः तर्से दः नर्से वावर्याषरः नुः स्वायाय्यायवरः नः नृरः। श्वीः वरः १८४८ वर्षः १९६१ चर.श्र.श.वे.५.श.रंशर्थाःश्चर्याः मी.रंगरः मी.संग्र.मंग.चंत्रः मी.संग्र.मंग. षशः नादरः स्त्री दः द्वेदे : करः क्षेत्रः नः दरः दन् वा अर्थे दः दनरः इदे : नर्वे : वर्षे : नादशः [मरःवी:यन्त्रवादहेत:नरःश्चे:नहें अपवें:यश्चार्च: क्वार्ची: अष्ठश्चायत्रेयःश्चें वाद्वेव:वि नबैदासंभेदार्देदाग्रह्मायमार्स्केनामहेनामरामी श्वेतामान्यत्वास्त्रदान्यत्वास्त्र सर्वे देश यस प्रकर मु र्के वास से प्यार पेता प्रवर हते कंत्र देवा वी प्रस्य विवर पर विंर निहेशानराष्ट्रीः र्सेनासाळे रासारानदार्भेरारे र्सेनास्त्रीतानिहास निहासी निहासी निहासी युनायमामान्यायम् । विष्यामामान्यायम् । विष्यामामान्यायम् । विष्यामामान्यायम् । विष्यामामान्यायम् । ळे*५*ॱग्रीॱ५व८ॱऋषेॱळंत्रः२ेषाॱठेश्यःयः देःवॅॱश्रूरःष्ट्र्यः ग्लीटःशःर्युष्यश्चारःश्वरःश्चिषः *\_*दर-द्रचो-म्बर-अ-प्यायद-र्थे अ-चेद-र्थेट्-च्रेद-च्रेद-प्येद-प्य-चर्च अ-ओ

#### क्रै.व.क्र्.च्.र्स.ली

<u>क्तिः वु. त्त्रु. प्राप्तः व्याप्तः व्याप्तः त्याप्तः त्याप्तः त्याप्तः त्याप्तः त्याप्तः त्याप्तः त्याप्तः त</u>

## म्, ह्ये में में चे ने ने ने ने ने

न्नो निर्मेश स्वाः ह्रेन

#### ने र शे ह्व श्वा

वैॱ<del>र</del>ॱसैॱहेंदॱसेंद'दें'ळंद'देग'य'*५८*'भेश'ॲद'ऄॣ॔व'सूंद'य'वेग'ऄद'य'विंर'ॶग'ळंद' रेना<sup>.</sup>र्झेनाःर्स्चेनःर्म्चेनःर्स्धेनःयःवेनाःधेन। नेःनवेनःयनान्यस्नःर्स्चेनःविनःयःन्नवःर्सेशः <u>ॲं५ॱॴॺढ़ॱढ़ऀॴॱ५८ॱऄ॔५ॱॹॖॆॱज़ॗॱॺढ़ॖऺढ़ॱक़ॕॸॱक़ऺढ़ॱॸऀॴॱऄॣॕॸॱॿॎॆ५ॱक़ॖॆ५ॱॺढ़ॏढ़ॱॲ॔५</u>ऻॎॺ॔॔ॸॱॾॗॆऀॱ र्षे. १६६६ वर्षा.४००१ चर.ष्र.पाद्धेश.इर.इ.स.चर्त्रन.वर्षा.स्या.पार्यर.श्रीर.च.रर. भूनसः देरः र्वेदः ग्रीः द्वे स्यर्हेदः विराजीकः द्वो स्यतुद्वः सदैः क्वेदः दुः क्वंदः रेवा रहेसः सदैः स्यतः नावि देर पर्ने पहुंना भारते दारा सुना रेना भारतहर खेंद्रा ही के स्वराम से प्राप्त से प्र वाद्ववाःसवाःश्चेतःवादेतः।वदःद्वशःवितःसुवाःवर्ञःस्याःसदेःश्चवाःवद्यसःस्याःसदेःश्चेतः सबर ही व। दे हे सामा से से रादे प्या मिर सुना सुना सुना सुना मही नावसामा है से साम से स वियात्मरायवराश्चिरा ही त्या ४००१ वया ४००६ वरा ही सक्केंद्रा ह्या ही राहे वा विवा नहना न्ध्र निरं नुः स्वा व्यवा व्यवः व्यन्। श्चीः वे १०१० व्यनः स्रोताः से १ वे १ न्या नीः न्नो न्व र्श्वेन्यन्र विरान् स्वाप्य यावरायर्वे पर्याया नेरान्नो नव निरान् श्वास्य प्रा दब्रोसमार्भेद्रान्वे त्यमानार्भे नामान्द्रान्युत्रान्युनात्यमान्त्रद्रान्ते दे त्यनेद्रान्ते । *ぺ*र्द, के दे : द्रास्कंद : देवा : द्राप्त : द्रापत र्क्षेट्र-५८-५बोससर्थ्रेद्र| ढद्र-२ेप-र्क्षेत्र-बिट्-नठसरग्री-बट्-लें-नठु-पहेसरब्रुपानी-हससर श्चिरः धेरा

#### **CONFERENCE OVERVIEW:**

In 2000, His Holiness the Dalai Lama provided a vision and directive for the exiled Tibetan monastic community in India to engage science, and to initiate science trainings that would eventually support new learning at the frontiers of science and Buddhism.

"Cosmology and Consciousness II – Knowing and Action" is the second conference in a four part series made possible by the generous funding of the Templeton Foundation. The conference series convenes Buddhist scholars, and western and Indian scientists in a 3-day dialogue to promote the integration of spiritual values and scientific investigations. The first conference, "Cosmology and Consciousness – a Dialogue a Dialogue between Buddhist Scholars and Scientists on Mind and Matter" was held in Dharamsala, in December, 2011, and was inaugurated by His Holiness the Dalai Lama.

How do we know, and how do we know how to act? What are the tools that scientific and contemplative traditions utilize for examining the human condition and the cosmos? How do we acquire and integrate knowledge and information to expand our awareness? New ethical dilemmas arise as science advances. What is the greater good and our responsibility to one another in a rapidly modernizing world? Most recently in the field of neuroscience, neuroethics has emerged a

topic of scientific and philosophical inquiry. The interaction of brains and machines and tailored pharmaceutical drugs have a great potential to alter and enhance our human experience, but also present serious ethical challenges.

# This years conference themes include:

- 1. How Do We Know? How do science and Buddhist contemplative traditions know and understand the natural world, what are the strengths and limitations of each for knowing. What is the epistemological status of knowledge between traditions? How do we distinguish between the real and unreal?
- 2. How Do We Extend Our Knowing? How do concepts from the cognitive sciences and neurobiology interface with concepts from Buddhism? In what ways can we extend our senses how does our mind extend into new technologies that interface with our brains? What are the limits for extending our senses?
- 3. How Do We Act? How do we navigate complex moral and ethical issues? How do we decide what is moral and what is not moral? What is the connection between knowledge and action does increased knowledge increase ethical behavior? How can contemplative traditions and science work together to best serve humanity providing both knowledge and happiness? What interventions are needed?

Our understanding of both cosmology and neuroscience has progressed substantially in recent years as the result of technological advances. A universe that stretches thousands times further than we can see, the possibilities of the multiverse, exoplanets and for life afar, all emerged as real scientific possibilities in recent decades. At our inner frontiers, the findings of neuroscience bring new light to the notions of consciousness and moral sensibility. These two strands, cosmos and consciousness, are closer linked than they may first appear. The role of the brain may be paramount for understanding the

universe, the universe within, and how we shape our actions as individuals and as a species.

### **About the Conference:**

The partners in organizing this conference include the Exploratorium (in San Francisco, USA), the Library of Tibetan Works and Archives (in Dharamsala, India), and made possible from a grant from the Templeton Foundation, and the ongoing generous support of the Sager Family Foundation.

## DAY ONE - HOW DO WE KNOW?

Friday, November 15, 2013 Session 1 – 9:00 AM to 10:30 AM

Chanting (Opening Prayers) & Lighting of the Butter Lamp Welcome and Introduction

Geshe Lhakdor and Bryce Johnson

(9:45 AM to 10:30 AM) **Engaging the World** 

Geshe Tenpa Phakchok
Drepung Gomang Monastic University

## **Abstract:**

How the mind engages with objective world has very detailed descriptions in Buddhist tradition and I will try to cover some points about how we examine the world through seven types of mind. There are specific ways by which one particular mind engages with the objective world and roles played by that type of mind. When we talk about the mind engaging with the objective world, we need to talk about

how we perceive things and here comes the Buddhist epistemology. I will talk about what is a valid cognition and what is mistaken cognition, and also how we know a valid cognition is valid. There is a sequence of the way the mind engages with the object starting from the mistaken state to the valid cognition. First out of ignorance, one either exaggerates or belittles the object and thus a mistaken perception arises. Then through logical analysis and deeper reflection, the mistaken mind gradually transforms successively into doubt, correct assumption, inferential cognition, and finally into direct perception. The process of the mind engaging into the object could be conceptual as well as non-conceptual. It could also be engaging through the process of elimination and affirmation. This process of the mind engaging into the object is very similar to the scientific explanation of the cognition of the object.

(Talk Duration 35 minutes + 10 minutes for Q&A)

Tea Break - 10:30 AM to 11:00 AM

Session 2 – 11:00 AM to 12:30 PM

(11:00 AM to 11:45 AM)

How We Know What We Know

Christopher Impey

University Distinguished Professor, Department of Astronomy University of Arizona

#### **Abstract:**

Science is unparalleled as a method for knowing and understanding the natural world. From its origins with the birth of mathematics and philosophy 2,500 years ago, it has grown to encompass robust theories of the microscopic structure of matter, the origin and evolution of the universe, and the mechanism for the evolution of function and form in living organisms. Applications of these theories have led to modern technology and huge strides in raising humans out of poverty and in combating disease. For all this success, science has limits and there are some things that are unknowable in principle and others that may be unknowable in practice. This talk will cover the strengths and limitations of science and give a sense of where the limits of knowledge lie.

(Talk Duration 35 minutes + 10 minutes for Q&A)

(11:45 AM to 12:30 PM)

# Knowing in Tibetan Medicine

Sonam Dolma
Tibetan Medical Doctor, Men-Tsee-Khang Institute

#### Abstract:

The Tibetan medical system is based on a set of established theories and principles that describe the subtle relationship between the macrocosmic and the microcosmic world. The diagnostic methods adopted in Tibetan medicine is devoid of any equipment and instruments. By merely touching, looking and talking with a patients, a Tibetan doctor can identify a variety of health issues and risks facing the patient. Tibetan medical text explains in great length the diagnostic principles and methods which needs to be adopted in treating a patient. In my presentation, I will touch on some of the important factors of the diagnostic methods, as well as the effectiveness and the limitation of Tibetan Medicine in the modern world.

(Talk Duration 35 minutes + 10 minutes for  $Q \mathcal{C} A$ )

Lunch Break – 12:30 PM to 2:00 PM

Session 3 – 2:00 PM to 3:30 PM (2:00 PM to 3:00 PM)

#### **Panel Discussion**

Panelists: Geshe Tenpa Phakchok, Christopher Impey, Sonam Dolma

Moderator: Eric Chudler (Discussion Time 60 minutes)

Tea Break - 3:00 PM to 3:30 PM

Session 4 – 3:30 PM to 4:30 PM

(3:30 PM to 4:30 PM)

## **Panel Discussion**

Panelists: Eric Chudler, Gaëlle Desbordes, Rajesh Kasturirangan Moderator: Christopher Impey (Discussion Time 60 minutes)

## DAY TWO - HOW DO WE EXTEND OUR KNOWING?

Saturday, November 16, 2013 Session 1 – 9:00 AM to 10:30 AM

(9:00 AM to 9:45 AM)

# Cultural Subjectivity – Building Bridges Between Science and Buddhism

Karma Thupten
Science Staff, Library of Tibetan Works & Archives

#### Abstract:

The connection and relationship between English and Tibetan language is relatively new. Until recently these languages and cultures were highly isolated. In the last decade many scientific words have been coined in Tibetan, and likewise, many words from Buddhist philosophy have been coined in English. However, there are often significant differences between these words that can lead to great misunderstanding during dialogue and exchanges between traditions. Often equivalent terms do not exist. Sometimes one Tibetan term can be used for four or five scientific terms, and sometimes there are numer-

ous terms from the Buddhist tradition that are without an English equivalent. We are not only talking about two different definitions but cultural backgrounds that can confuse understanding of words that may appear similar. The correct meaning, is often unique to the culture and the cultural connotation of the words. Understanding these issues can help avoid misunderstandings and misconceptions. Just knowing that they have different meanings might encourage you to be cautious. But to really understand, it takes time. If we are careful as speakers and as listeners, and avoid jumping to conclusions, we can build more effective bridges between Buddhism and science.

(Talk Duration 35 minutes + 10 minutes for  $Q \mathcal{C}A$ )

(9:45 AM to 10:30 AM)

# Recent findings from neuroscience on how contemplative practices affect the brain

Gaëlle Desbordes

Research Fellow, Center for Biomedical Imaging, Harvard Medical School

#### **Abstract:**

Contemplative practices derived from the Buddhist traditions, such as shamatha-vipashyana meditation or the cultivation of loving-kindness and compassion through lo-jong methods, have become a topic of significant interest for scientists investigating how the human brain works. This talk will provide an overview of recent scientific research within the burgeoning field of contemplative neuroscience, which concerns itself with the scientific investigation of the effects on the brain of various forms of contemplative practice. We will briefly re-

view brain imaging studies from the past decade which indicate that contemplative practices may indeed change the brain structure and how the brain functions. Several studies to date suggest that individuals with extensive meditation experience exhibit differences in their brains compared to non-practitioners, both in terms of anatomy of specific brain regions, and in terms of patterns of brain activity. In addition, there is mounting evidence that training in meditative practices yields changes in the brain that can be measured over time in beginning practitioners after only a few months — or even shorter periods of time. Overall, these studies point to the general notion that contemplative practices affect the brain in measurable, objective ways. This finding has major implications towards understanding how the brain works and how it can be trained.

(Talk Duration 35 minutes + 10 minutes for Q&A)

Tea Break - 10:30 AM to 11:00 AM

Session 2 – 11:00 AM to 12:30 PM

(11:00 AM to 11:45 AM)

## **Panel Discussion**

Panelists: Karma Thupten, Christopher Impey, Gaëlle Desbordes Moderator: Rajesh Kasturirangan (Discussion Time 45 minutes)

(11:45 AM to 12:30 PM)

Dharmanauts: Contemplation and Science in the 21st Century

# Rajesh Kasturirangan

Professor, National Institute for Advanced Studies, Indian Institute of Science

#### **Abstract:**

Much of the dialog between science and contemplative traditions assumes that science is modern and contemplation is ancient. In my presentation, I want to reverse the relationship between the two, that when it comes to certain key developments of the 21st century, contemplative traditions are the future, while scientific inquiry is still stuck in the past, and that much progress will come out of recognizing this role reversal.

What do I mean by the provocative statement? For most of the last four hundred years, science has rejected the study of subjectivity, consciousness, and being and concentrated on third-person objective inquiry instead. The objective method has been remarkably successful, but it's reaching its limits now. Further, the great challenges of the 21st century are either centrally tied to subjectivity – such as the study of the brain – or tied to human impact on nature – such as climate change. Technological advances in big data, neuro-engineering and synthetic biology also promise dramatic changes in who we are as much as what we know. The sciences, because of their focus on third person inquiry, are uncomfortable with studying practices that lead to self-transformation. That's a glaring fault at a time when scientific and technical progress promises massive self-transformation.

Contemplative traditions have engaged with practices of self-transformation for millennia. They provide us both with a theoretical framework and with a moral compass when it comes to self-transformation. I believe that in the coming years, contemplative understanding will (or should!) become mainstream, of great interest not only to people seeking the end of suffering, but also companies like Google that will create products and collect data about first person experience

at a massive scale.

The future belongs to the Dharmanaut; a person who combines a deep understanding of the fundamental issues raised by contemplative inquiry, but who is simultaneously fluent in the language of science and technology. My presentation will cover the scientific and contemplative issues involved in this new imagination, hint at work that we are doing to take this vision forward and speculate (somewhat wildly) on what the future might bring.

#### Lunch Break - 12:30 PM to 2:00 PM

Session 3 – 2:00 PM to 3:30 PM

(2:00 PM to 2:45 PM)

# **Extending and Restraining Our Senses**

Geshe Lhakdor Director, Library of Tibetan Works and Archives

#### Abstract:

Within the realm of forms the five senses are termed as internal forms as they can be perceived by only mental consciousness. The sense organs do not refer to the gross external organ but to the actual physical mechanism of perception. Each of the senses (eye, ear, nose, tongue, body, and mind) have a different consciousness, that is at each moment of experience there is different experience as well as a different object of experience. The importance of the role played by these sense cannot be downplayed. Even in the briefest of experiences, each of the six sense consciousness occur: one sees, hears, tastes, smells, touches, and one thinks. However in Buddhism, unchecked desires are like the rubber band and stops only when it breaks. The five senses are

the outlets allowing you to engage in the sensual objects. If our inner consciousness has no say then our senses, mind, and intellect will not know where to draw the line. Therefore one of the important conditions for successful meditation is putting restraint on the sense outlets. Real happiness does not come from sensual pleasures. Gratification of the senses leads to more desires which actually act as fuel to the fire. If seeking happiness is a natural human instinct, what really makes one happy is not self-indulgence, but transcending sensual desires and finding fulfillment in a higher spiritual plane and bringing happiness to others. We need to respond carefully to situations in life. A great many of our physical sicknesses could be avoided if we could only change our attitudes. Happiness, at its core, is about discovering meaning, and counting your blessings, not your woes.

(Talk Duration 35 minutes + 10 minutes for Q&A)

(2:45 PM to 3:30 PM)

## The Hum of the Universe Within

Nishant Seth

Graduate Student Researcher, National Institute for Advanced Studies, Indian Institute of Science

#### **Abstract:**

In recent years a lot of groundbreaking work has been done in the area of brain-machine interfaces (BMI), and more generally, what we may call brain-body-machine interfaces. This includes both BMIs where brains control machines, as well as Sensory Substitution Devices where artificial sensors extend the abilities of existing sense organs. These interfaces have chiefly been seen as feats of engineering, while the philosophical questions they raise have been ignored. In this pres-

entation I will frame some of these questions in the context of a novel interface designed in our lab.

The central question we're exploring is whether the brain is the sole player when a person adapts to such an interface, what about the role of agency and other intentional phenomena that can't be localized in space? Through this line of enquiry we hope to build on the extended mind hypothesis and related ideas that try to understand the relationship between the mind and the dynamics of the brain-body-environment system.

Specifically our interface connects two users by enabling one to 'listen' to the other's brain-activity in a natural setting. We want to study how the users' intentions structure the dynamics of this system. Also, by making brainwaves a part of our perceptual domain, we hope to open up a whole new world for scientific and experiential exploration.

(Talk Duration 35 minutes + 10 minutes for  $Q \mathcal{C} A$ )

Tea Break - 3:30 PM to 4:00 PM

Session 4 – 4:00 PM to 5:00 PM

# **Panel Discussion**

Panelists: Karma Thupten, Geshe Lhakdor, Rajesh Kasturirangan,

Nishant Seth, Eric Chudler.

Moderator: Christopher Impey (Discussion Time 60 minutes)

#### DAY THREE - HOW DO WE ACT?

Sunday, November 17, 2013 Session 1 – 9:00 AM to 10:30 AM

(9:00 AM to 9:45 AM)

# Neurotechnology: Promises and Perils

Eric Chudler

Research Associate Professor, Department of Bioengineering, Executive Director, Center for Sensorimotor Neural Engineering, University of Washington, Seattle

#### **Abstract:**

Neurological disorders affect approximately 1 billion worldwide. In the United States alone, movement disorders that require 24 hour care, 7 days a week, cost \$500 billion each year. There is a clear need for technologies to assist people with neurological problems and tremendous progress has been made by researchers to build systems and devices that interact with the nervous system to assist these patients. Although scientists and engineers "can" develop these new neurotechnologies, many ethical concerns and questions about how research-

ers "should" proceed are raised. The current state of neurotechnology research and the following neuroethical issues and questions raised by this research will be discussed.

- Privacy/security: what type of information should be collected from neurotechnologies; who should have access to the information; how can the device be protected from outside interference.
- Normality: what is the difference between an abnormality and a difference in neurological function; acceptance of differences; what are the benefits of neurodiversity; will new technologies be accepted by end-users.
- Authority/control: who decides how neurotechnology is controlled; how much autonomy is given to the device.
- Identity: when does a device become part of a person
- Responsibility: who or what is responsible for the actions of a machine; what happens if the device fails or injures someone.
- Justice: who will have access to the technology; who will decide how a device is used; do the benefits of the technology outweigh the side effects; is there a difference between repair and enhancement of the nervous system; what responsibilities do researchers have with regard to how their devices are used.

(Talk Duration 35 minutes + 10 minutes for Q&A)

(9:45 AM to 10:30 AM)

## The Road Less Travelled

Geet Oberoi

President and Founder, Orkids Foundation

#### **Abstract:**

Until very recent times, contemplative practices have been believed to be the privilege of the learned few. The so called common man delved in spirituality usually when in a place of worship or when on a pilgrimage. Spirituality and living our lives at its best were compartmentalized, like two linear parallels, never meant to intersect. Ten years ago to say that I could integrate spiritual teaching and education, would have been scorned at. However that didn't stop certain individuals and institutions to put into practice their beliefs. Orkids is an organization which has been working in the field of special education for almost 20 years. Starting with providing services likes remedial education to children, Orkids expanded into professional development. Our vision of making education possible for all children irrespective of ability was reinforced by being instrumental in changing the mind-sets and quality of skills of the trained professional. We at Orkids believe that gaining knowledge about the outer universe can be further enhanced if we are in touch with our inner universe. The more we go within, the better we are at living our best in this world. My presentation will throw light on how we work with the realities and practicalities of our world of schools and colleges, lack of awareness, insensitivity, lack of accountability, teacher trainings, jobs, exams, marks, grades and the list goes on. And at the same time how we gain strength from our strong empowered self which holds happiness dearly. A balancing act - an act which has over time produced children who are proud of their diverse neurodevelopmental profile, teachers who are sensitive to all needs of all children and an environment which believes that differences are criteria for celebration and not segregation.

(Talk Duration 35 minutes + 10 minutes for Q&A)

Tea Break - 10:30 AM to 11:00 AM

Session 2 – 11:00 AM to 12:00 PM

(11:00 AM to 12:00 PM)

#### **Panel Discussion**

Panelists: Eric Chudler, Geet Oberoi, Gaëlle Desbordes Moderator: Bobby Sager (Discussion Time 60 minutes)

#### Lunch Break - 12:00 PM to 1:30 PM

Session 3 – 1:30 PM to 3:15 PM

(1:30 PM to 2:15 PM)

Hands-on, Eyeball-to-Eyeball - The New Philanthropy

Bobby Sager
President and Founder, Sager Family Foundation

#### **Abstract:**

For over a decade, the Sager Foundation has employed a special brand of philanthropy that focuses on building personal connections and leveraging business sensibilities. For the individual, this means contributing your time, energy and talents, rather than just your money to maximize the return on investment you get from philanthropy. This is far from the tradition of writing a check and going to an annual dinner. It is about accountability, and applying business skills to make strategic and smart decisions about how to cleverly deploy limited resources. The Sager's approach emphasizes going beyond our immediate bubble of experience, to listen carefully, and to immerse oneself in the issues facing the community. By being hands-on, looking people in their eyes, feeling their humanity, and letting them feel

yours, vibrant and open relationships that bring about change for the greater good are established. It isn't just helping, it's a way to live life to the fullest.

(Talk Duration 35 minutes + 10 minutes for Q&A)

(2:15 PM to 3:15 PM)

## **Panel Discussion**

Panelists: Bobby Sager, Geshe Tenpa Phakchok, Christopher Impey, Sonam Dolma, Rajesh Kasturirangan, Gaëlle Desbordes, Karma Thupten, Nishant Seth, Geshe Lhakdor, Geet Oberoi.

Moderator: Chris Impey (Discussion Time 60 minutes)

## **CONFERENCE PRESENTERS BIOS**

# Geshe Tenpa Phakchok

Tenpa Phakchok was born in India and became a monk in 1970 at Drepung Gomang Monastery in south India, where he studied continuously for 20 years until finishing his traditional studies in 1990. In 1991, he enrolled for Gelukpa examination and finished his Lharampa degree in 1996. In 1997, Geshe Tenpa joined Gyumed Tantric University to study Tantra and received his Tantric Lharampa degree in 1999. He had served his monastery in various administrative and spiritual positions, including Lama Shunglepa and the disciplinary master. Since 2000, Geshe Tenpa has also been closely involved in the various science education programs initiated by the Library of Tibetan Works and Archives, including the Emory Tibet Science Initiative and the Science for Monks Program. Geshe Tenpa spends most of the his teaching Buddhist philosophy at his home monastery in South India.

# **Christopher Impey**

Chris Impey is a University Distinguished Professor and Deputy Head of the Department at the University of Arizona, in charge of academic programs. His research is on observational cosmology, gravitational lensing, and the evolution and structure of galaxies. He has over 160 refereed publications and 60 conference proceedings, and his work has been supported by \$20 million in grants from NASA and the NSF. As a professor, he has won eleven teaching awards, and has been heavily involved in curriculum and instructional technology development. Chris is a past Vice President of the American Astronomical Society. He has also been an NSF Distinguished Teaching Scholar, a Phi Beta Kappa Visiting Scholar, and the Carnegie Council on Teaching's Arizona Professor of the Year. Chris has written over thirty popular articles on cosmology and astrobiology and authored two introductory textbooks. His has published three popular science books: The Living Cosmos (2007, Random House), How It Ends (2010, Norton) and How It Began (2012, Norton). He has three more popular books in preparation. He was a co-chair of the Education and Public Outreach Study Group for the Astronomy Decadal Survey of the National Academy of Sciences. In 2009, he was elected a Fellow of the American Association for the Advancement of Science. He has participated in the Science for Monks program since 2008.

#### Sonam Dolma

Sonam Dolma is a Tibetan medical doctor with Men-Tsee-Khang, the Tibetan Medical Institute, in Dharamsala. Sonam completed her BA and MA from Punjab University, Chandigarh. Sonam went on to study Tibetan Medicine for 6 years at Men-Tsee-Khang, from 1992-1997. Dr Sonam has studied under some of the most prominant Tibetan medical doctors and completed her Menrampa degree in Tibetan Medicine in 2009. Dr Sonam has also worked as a translator, where she has translated fundamental medical texts such as the 'Four Tantras' from Tibetan into English. From 2010 to 2012, Dr. Sonam

served as the vice-chairman of the Central Council of Tibetan Medicine, as well as head of the Translation Department at Men-Tsee-Khang. Dr. Sonam is currently serving as head of Men-Tsee-Khang's Documentation & Publication department in Dharasmasala where she continues to practice Tibetan medicine.

# Rajesh Kasturirangan

Rajesh Kasturirangan research interests are in cognitive science and philosophy of mind. His current work relates to applying a combination of philosophical argument, mathematical techniques and empirical observations to classical problems in cognitive science and the philosophy of mind such as the semantics of natural languages, the epistemology of beliefs and the structure of intentionality and consciousness.

### Gaëlle Desbordes

Gaëlle Desbordes is a research fellow at the Athinoula A. Martinos Center for Biomedical Imaging within the Massachusetts General Hospital and Harvard Medical School, and a visiting scholar at Boston University. Trained as a neuroscientist (PhD, Boston University) and with previous postgraduate training in engineering and computer science, Dr. Desbordes's current research focuses on the neuroscientific investigation of contemplative practices, using advanced methods in brain imaging (especially functional MRI) and physiological measurements of the autonomic nervous system. She is particularly interested in contemplative methods for cultivating loving-kindness and compassion (e.g., Tibetan lo-jong practices). For the past four years, Dr. Desbordes has worked in collaboration with Geshe Lobsang Tenzin Negi (Emory University) and Dr. Charles Raison (University of

Arizona) on a scientific study that examines how Cognitively-Based Compassion Training (CBCT), an 8-week secular training program based on lo-jong practices, affects emotional processing in the brains of participants and their physiological response to psychosocial stress. In addition, Dr. Desbordes is the recipient of a Francisco J. Varela Research Award from the Mind and Life Institute for an ongoing study of the neural and physiological correlates of visualization practices in experienced Vajrayana practitioners. She is also on the neuroscience faculty at the Emory-Tibet Science Initiative—an ongoing effort overseen by His Holiness the Dalai Lama and the Library of Tibetan Works and Archives aimed at implementing a comprehensive and sustainable science curriculum for Tibetan monastics.

### Nishant Seth

Nishant Seth is a PhD Student in the Cognition Program at the National Institute of Advanced Studies, Bangalore. He completed his undergraduate studies in Biological Sciences and Electronic Engineering at BITS-Pilani, Rajastan. Nishant has been part of the Doctoral Program since 2012, during which he has taken short courses on the Philosophy of Language and Signs, Embodied Cognition, Non-Linear Dynamics, Complex Systems, and Interdisciplinarity, among others. His research involves philosophizing about, and experimenting with, perceptual extensions. These are artificial interfaces that change, or add to, our existing senses. During work hours, Nishant can be found toying with ideas and electronics to improve or test out a new perceptual extension. Over the past year he has built two such interfaces, one for echolocation, and another for neural-feedback.

# Karma Thupten

Karma Thupten was born in Tibet to a nomadic family and left for India in the pursuit of freedom and education at the age of ten. He did his schooling from the Tibetan Children's Village Schools and later Delhi University where he received a Bachelors in English Literature. In 2006, he joined a translation training program at Library of Tibetan Works and Archives and shortly after was hired by the Library's Science Department as a research and translation officer. Karma has organized and translated various programs related with the promotion of scientific education in Tibetan monastic communities, helping build bridges between scientific and Tibetan Buddhist communities. Karma has also undertaken various science publications of the Library, including his latest translation "Tibetan Buddhism and the Modern Physics: Towards a union of love and Knowledge" by Professor Victor Mansfield. Based on his many years of experience with both Tibetan monastics and western scientific community, he sees that language and cultural subjectivity of these two traditions often become an obstacle for understanding each other that limit the scope of collaboration. He is interested in approaches that clear these source of misconceptions and further the development of this fruitful collaboration.

# Eric Chudler

Eric H. Chudler is a research neuroscientist interested in how the brain processes information about pain and nociception and how neuroactive chemicals from plants affect the nervous system. Eric received his Ph.D. from the Department of Psychology at the University of Washington in Seattle in 1985. He has worked at the National Institutes of Health in Bethesda, MD (1986-1989) and in the Department of Neurosurgery at Massachusetts General Hospital in Boston, MA (1989-1991). He is currently a research associate profes-

sor in the Department of Bioengineering and the executive director of Center for Sensorimotor Neural Engineering. He is also a faculty member in the Department of Anesthesiology & Pain Medicine and the Graduate Program of Neurobiology and Behavior at the University of Washington. In addition to performing basic neuroscience research, Eric works with other neuroscientists and classroom teachers to develop educational materials to help K-12 students learn about the brain. His web site, Neuroscience for Kids, is accessed millions of times each year by students and teachers from around the world.

# **Bobby Sager**

Bobby Sager is a tough-minded businessman who made a fortune by seeing opportunity where others have not. Bobby was a driving force behind the spectacular growth of Gordon Brothers Group. Bobby joined Gordon Brothers in 1986 when it was a small Boston-based jewelry business. Today, Gordon Brothers is a preeminent global financial services business conducting over \$10 billion of transactions annually, with over 10 offices in North America, Europe and Asia. Bobby currently serves as Chairman of the Board of Directors of Polaroid. In 2000, Bobby and his wife and kids founded the Sager Family Traveling Foundation & Roadshow. Three dozen trips later, the Sagers have established their own special brand of hands-on, eyeballto-eyeball philanthropy. Their philanthropy uses business principles and business accountability, whether it's fostering entrepreneurship in Rwanda and Palestine, training teachers in Pakistan or a leadership program for Tibetan monks. Bobby has also been a pioneer in catalyzing Young Presidents' Organization (YPO) as a platform to make a difference. YPO is a global network of 20,000 business leaders in 120 countries whose companies' sales are equivalent to the world's third

largest economy.

#### Geet Oberoi

Geet Oberoi, Founder President, Orkids Foundation Society, has been working in the field of special education for almost 20 years. She started her teaching career in 1994 teaching children with special education needs as a special educator and today is one of the front-runner crusader for Inclusive education in our society in the real sense of the word. Geet's tenacity and the determination to be a true advocate for children with special needs has always been the underpinning of her endeavors. Special needs is a much misunderstood and ignored reality in the Indian society and needs crusaders who can work relentlessly towards the shift from a 'charity-based' model to a 'rights-based' model of society. It is a task needing persons who believe inclusion is a way of life and Geet has exhibited that over the years. Geet has a Doctorate in psychology (Learning Disabilities), a Masters' degree in Psychology and Diploma in Special Education.

## **CONFERENCE ORGANIZERS**

#### Geshe Lhakdor

Geshe Lhakdor is the director of the Library of Tibetan Works and Archives in Dharamsala, India. A distinguished Buddhist scholar, he was the English translator for His Holiness, the 14th Dalai Lama, from 1989 to 2005. He has co-translated and co-produced several books by the Dalai Lama. From 1976 to 1986, Lhakdor studied specialized Buddhist philosophy in the Institute of Buddhist Dialectics, Dharamsala and received the Master of Prajnaparamita in 1982. He also received the Master of Madhyamika in 1989 and the Master of Philosophy from the University of Delhi. Since 2002, Geshe Lhakdor has been an Honorary Professor at the University of British Columbia, Vancouver, Canada. In 2008, he was also conferred an Honorary Professorship by the University of Delhi, Department of Psychology.

# **Bryce Johnson**

Bryce Johnson is a scientist-educator with a background in environmental science and a love of inquiry, hands-on learning, and teaching Tibetan monastics science. Bryce lived and worked in Dharamsala, India for two years from 1999-2001 where he helped the Library of Tibetan Works and Archives launch the Science for Monks program.

He received a BS in 1997 and MS in 1999 from UC Santa Barbara, in Mechanical Engineering. In 2007, he completed a Ph.D. in Environmental Engineering from UC Berkeley. Bryce has worked as a scientist for the California Environmental Protection Agency on water quality issues related to mercury contamination in Northern California. In 2008 and 2009 he worked as a Postdoctoral Fellow in a marine chemistry lab at Texas A&M University in Galveston. Bryce joined the Exploratorium's Teacher Institute in 2010. At the Exploratorium, Bryce has worked with teachers, artists, and exhibit developers on investigations into San Francisco Bay, with an emphasis on the connection between humans and their impact on aquatic environments. Bryce has over 12-years of experience directing and implementing institutes, exhibitions, and teacher trainings for the Science for Monks program in India, and is currently a Staff Scientist at the Exploratorium.