Graduate Systemic Inquiry Co-Laboratory

Systems Thinking in Practice (STiP) in PhD Research: Realizing Sustainable Futures in Socio-Ecological Systems

22nd July – 30th July 2016,

Boulder, Colorado, USA

Course programme

See also: http://www.coexploration.org/systemicinquiry/

NB. We will generally have morning and afternoon coffee breaks of about 30 minutes and an hour for lunch.

Pre-Course preparation 15 July – 27 July	Familiarise yourself with the program for the systemic inquiry.	Read your pre-joining instructions Review Key References	• Establish on-line contacts • Write Personal Mission / Purpose
	• **Morning**	• **Afternoon**	• **Evening**
Friday 22nd July 9am-8pm	Introductions: • sharing individual research and systems trajectories • working as a critical learning systems (CLS) community • reviewing STiP experience & taking an overview of the course resources and program • Emergent issues from your own experiences of Systems	• STiP as the conservation of theoretical lineages and traditions • Implications of these traditions for practice; research as a practice • Modes of research (the PFMS heuristic) • Introducing systemic inquiry in context of ISSS (SI session 1)	'Walking our talk': grounding what has been presented in your own context. Practical exercise over dinner

Saturday 23rd July 9am - 5pm	• Welcoming ISSS Berlin alumni; • Contextualising you and your PhD research • Articulating your….PFMS 'model' • Forming inquiry groups • Exploring contexts & emerging issues	• Introducing and using systems, tools, techniques, methods and methodologies combined with group work; • Skills/enthusiasm audit	
Sunday 24th July 9am – 4pm	• Overview of Systems Lineages and Implications for Research: Prof. *Debora Hammond (0930)* • Social System Design and Institutional complexity: implications in the STiP field: Prof *Gary Metcalf (11.00)* • Panel Discussion • Small group explorations of implications (for your group SI and for your own research)	• Skills/enthusiasm audit iteration; • Clarifying tasks for the week • Continuing a systemic inquiry at ISSS: (SI session 2) • contracting/protocols; • preliminary designs for final presentation • *ISSS Reception*	
Monday 25th July	Conference Registration (cont'd) Conference sessions	Conference Sessions	Networking; inquiry conversations
Tuesday 26th July	Conference sessions	Conference sessions	5pm to 6pm CLS community reflections session 1
Wednesday 27th July	Conference Sessions	Conference Sessions	
Thursday 28th July	Conference sessions	Conference sessions	5pm to 6pm CLS community reflections session 2 Finalising feedback presentation
Friday 29th July	• Conference sessions • PhD student feedback in plenary	• Final course assignment: • Group report • Linking your future research trajectory	

		design to your inquiry outcomes. • Final reflections & course certificates • 1600 CLOSE	
Saturday 30th July	• Optional extra – self organizing		

Course Facilitators:	Contributors
Prof. Ray Ison (UK) Dr Chris Blackmore (UK) Peter Tuddenham (US) Jeremiah Osborne-Gowey (US) ISSS Berlin Alumni (names to be advised)	Prof Debora Hammond (US) Prof Gary Metcalf (US) ISSS Boulder participants and presenters
Course Director (University of Colorado)	**Course Assistant**
Prof. John Kineman	Dr Mary Edson

PROGRAM RATIONALE

The course is related to the International Society for Systems Sciences (ISSS) Annual Meeting being held on the campus of the University of Colorado Boulder. The course consists of a 1) pre-conference intensive seminar, 2) the conference itself which has a variety of keynote presentations, panel discussions, workshops, special integration group presentations, case-studies and discussions, and intensive evening reflections and events, 3) the post-conference follow-up, 4) written reports, and 5) reflections on learning and personal development, 6) required evaluations

Students signing up for the course must also register for the ISSS Conference and participate fully for the full duration of the conference. Register at http://isss.org/world/node/625.

This Graduate program is designed as a systemic inquiry into how systems thinking in practice (STiP) can enhance the graduate work of participants. Pre-course reading and assignment prepares participants for the inquiry and builds on the experiences and understandings of Systems by those participating. Three additional specialist sessions to enable students to appreciate the different Systems intellectual traditions will be provided during the intensive by guest lecturers and the facilitators. The intensive will equip students with the means to inquire and make sense out of the conference. The conference focuses on what it means for a system to be sustainable: exploring holistic science and thinking to understand, manage, and create sustainability in complex socio-ecological systems. We are intentionally stepping outside traditional comfort zones to explore new territory and possibly find new answers to complex, problems emerging today. We recognize the importance of empowering students; removing philosophical and institutional blocks to their inquiry

into such questions, and providing them with the best tools to guide their research and practical experiences. From development of new theories and practices to integration of existing ones, our challenge is to determine the opportunities that will enable societies to make necessary transformations for systemic sustainability.

Pre-Requisites:

There are no class pre-requisites to register for this course. Although it is designed as a graduate course, we also will accept motivated undergraduates with instructor consent. Prior to the course, you will create a timeline of your personal research and systems trajectories to share during the first session of the course. You will also begin to research what working as a Critical Learning Systems (CLS) community might be for your work and research as well as review Systems Thinking in Practice (STiP) experience as presented in the course resources and proposed course outline program.

Learning Goals

We will build on the following three primary learning goals throughout the course:

- Explore three major systems traditions – systems, cybernetics and complexity, their relation to each other and to ISSS Annual Conference theme of Realizing Sustainable Futures in Socio-Ecological Systems

- Explore contexts, emergence & theoretical/philosophical issues related to personal research projects and the conference theme

- Use systems approaches, theoretical frameworks, methodologies, tools, techniques, and modelling throughout student research projects and during the conference duration.

Textbooks and Materials

Reading 1   Reynolds, Martin and Holwell, Sue (2010). Introducing systems approaches. In: Reynolds, Martin and Holwell, Sue eds. Systems Approaches to Managing Change: A Practical Guide. London: Springer, pp. 1–23.

Reading 2 Ison. Ray (2010) Introducing Systems Practice. In Ison, Ray, Systems Practice: How to Act in a Climate-Change World. London: Springer pp. 17-35

Reading 3 Bawden, Richard (2010) Messy Issues, Worldviews and Systemic Competencies. In Blackmore, Chris ed. Social Learning Systems and Communities of Practice. London: Springer, pp. 89-101

Assignments

See Annex 1 for all assignments:

Written Assignments:

Written Assignment 1: Pre-Course and Day 1: Arrive with Assignment 1 prepared and posted to the program web site http://www.coexploration.org/systemicinquiry/   and bring a hard copy of your

trajectory diagram ready for display, preferably on a large sheet of paper suitable to mount on a wall or pin board – see Assignment 1

Written Assignment 2: Write conference attendance plan.

Written Assignment 3: Write reflections on the course and conference experiences and learning.

Demonstrated Learning:

Students will make a group presentation of their learning during the ISSS conference. Each student will write a final reflection on the conference and their group and personal systemic inquiry.

Further Background Reading (voluntary)

Hammond, D. (2003) *The Science of Synthesis: Exploring the Social Implications of General Systems Theory,* Colorado: University Press of Colorado.

Metcalf, G. ed. (2014) *Social Systems and Design*, Springer, Japan.

Ramage, M. & Shipp, K. (2009) *Systems Thinkers*, Springer (London) and The Open University (UK).

Conference blog site and social media

All participants are encouraged to contribute either individually or collectively to the conference Blog - see http://isss2016.nexial.org/   and to Twitter and other relevant social media.

Studying for Credit

All participants completing the course will receive an ISSS Certificate of Attendance and Completion. If you wish to gain formal credit for your study there are two options available. There is an option to sign up for University of Colorado, Boulder credits (3 credits). The other option is for you to negotiate arrangements for credit with your home institution.

Graduate Credit (3cr) at CU-Boulder

"Graduate Credit (3cr) at CU-Boulder is Available: Three transferable graduate (or upper division by approval) credits are available from the Environmental Studies Program at the University of Colorado at Boulder for all students enrolled in the ISSS Graduate course and conference, at a specially discounted additional fee of $310 (University Enrolment cost at CU-Boulder Continuing Education). To take the course for CU credit you must register for "ENVS:4100-5100570 Special Topics In Envs", which can be found by searching special courses. Please enter the following search parameters:

Institution: CU Boulder

Term: Summer 2016 UC Boulder

Campus: Boulder Continuing Education

Subject: ENVS

* (leave the rest blank and click on "Search"; then select ENVS 5100 or 4100)

New students will need to apply (https://soa.prod.cu.edu/conted/applyCONTED_CUBLD/onestep/home) for an "Identikey" to access the University's "Desire to Learn" system (https://learn.colorado.edu/d2l/home/170349) where course and student tracking information and other services will be managed. In addition, there will be a course support and collaboration web page at: http://www.coexploration.org/systemicinquiry/.

Please consult information for Enrolment options for current, new, continuing, and international students at: https://ce.colorado.edu/resources/topics/enrollment-general-info/ . Please consult information for Enrolment options for current, new, continuing, and international students at: https://ce.colorado.edu/resources/topics/enrollment-general-info/ .

Students who seek CU credit must enter in the D2L system. (Auditors may also enter to get the same correspondence and services on campus (like library access). This takes about a week to process. These details are required.

- Full legal name of individual to be sponsored: <family name, given name>
- Last 4 digits of [some personal identification number - probably your PIN, or any other identity number] -- <can be any country or state ID, say what it is>.
- Birth date: <Month-Day-Year>
- Length of sponsorship (up to 1 year): This will be for 1 year, renewable.
- A personal email address:
- List the reason for the sponsorship: Participants in Environmental Studies Program Course, ENVS5100-570

You may also contact Peter Tuddenham (peter@coexploration.net), Jeremiah Osborne-Gowey (jeremiah.osbornegowey@colorado.edu) or John Kineman (john.kineman@colorado.edu) for further instructions about Graduate Credit options.

For information about the Core course (July 22-24), please contact Ray Ison (Ray.Ison@open.ac.uk).

ANNEX 1

ASSIGNMENTS

Pre-course assignment Part 1– explore your personal history and prepare a trajectory diagram

In preparation for the course we ask you to explore some of your personal history of relevance to your research and the course and to develop a 'trajectory diagram'. An example of a trajectory diagram and some instructions on how to develop it are given below. You will use this diagram to communicate with other course participants about your perspective. Your diagram should be clearly presented and understandable, assuming that you are there to explain the specific terms. It does not need to be a work of art.

1   Start by considering the question *"What are your points of entry to this course?"*

2   Next draw your own trajectory diagram that shows your points of entry to this course.

To aid you in this activity Chris Blackmore, one of the course tutors, has developed a trajectory diagram (Figure 1) which accounts, in part, for how she arrived at the course.
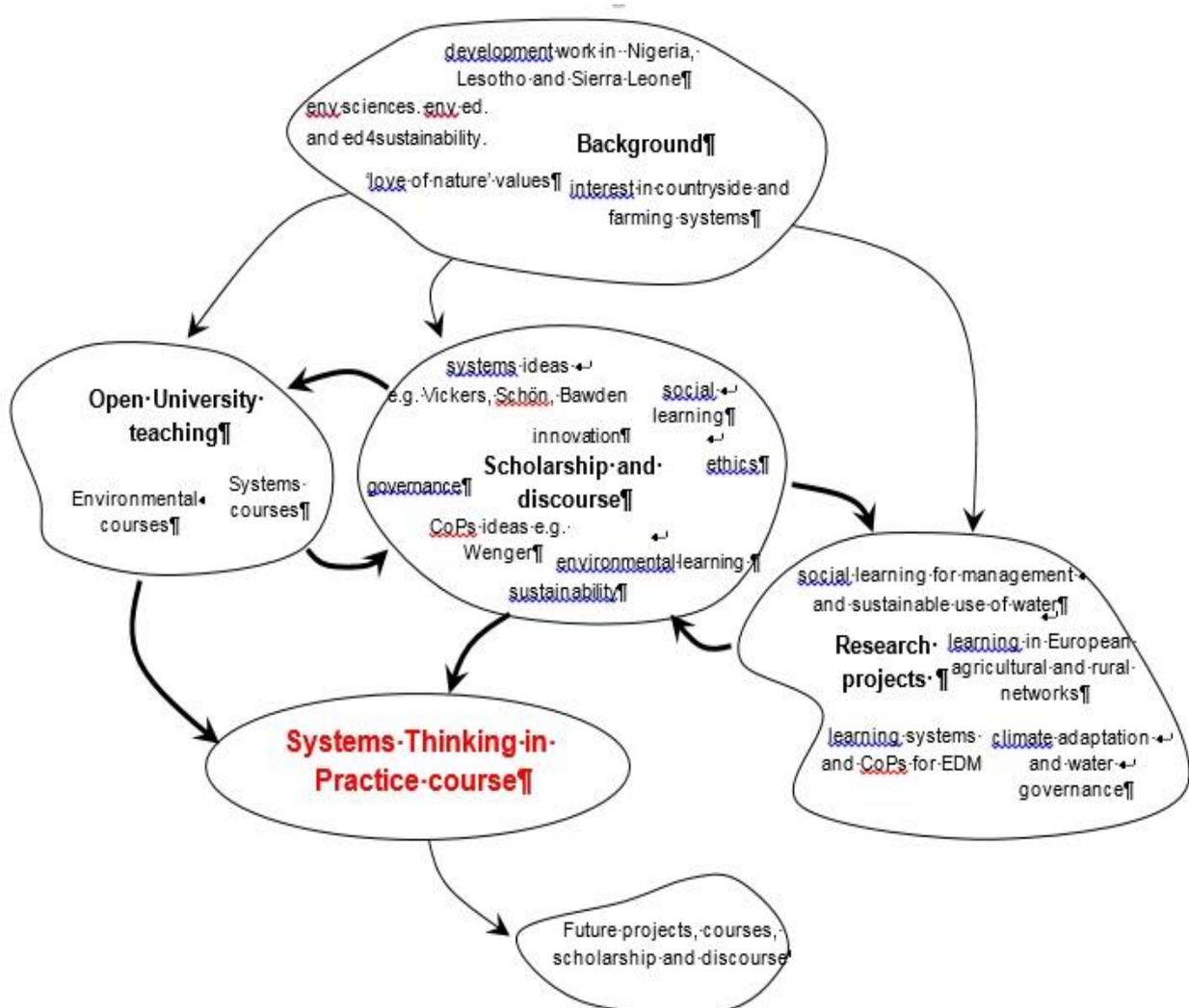
Figure 1: Example of a trajectory diagram showing some of Chris's 'points of entry' to the course

Developing a trajectory diagram

The idea of a trajectory as a past, present and future pathway was developed and used by Wenger (1998) to help people understand their identities in relation to 'communities of practice'. You will use the idea of a trajectory here to represent elements of past, present and future learning that you find significant in relation to the course and to show how you see the links between these elements:

> *[Trajectories] give significance to events in relation to time construed as an extension of the self. They provide a context in which to determine what, among all the things that are potentially significant, actually becomes significant learning. A sense of trajectory gives us ways of sorting out what matters and what does not, what contributes to our identity and what remains marginal. (Wenger, 1998, p. 155)*

In drawing a trajectory diagram in the context of this course you are trying to show a past, present and future pathway that includes the course.

1   First work out what you consider significant to your past and present learning in relation to the course and what might be significant in future. A good way to start is to answer the question 'what led up to me doing this course?'

2   Think about what, for you, has been most significant. Do not try to represent everything you have done.

3   Frame your answer to the question in terms of your 'points of entry' to the course in the way that Chris has done in her diagram. Put these points into their own 'blobs'. (It is up to you how many 'blobs' you include in your diagram, but as a guideline use three or four from the past and present, a blob to represent the course, and one or two for the future.)

4   Use arrows to show connections between your 'points of entry blobs', if appropriate.

5   Draw arrows from each of your points of entry blobs to a 'Systems Thinking and Practice course' blob.

6   Draw at least one arrow leading out from the course to a blob that gives an indication of where you see yourself going with what you learn from the course.

7.   There is a temporal dimension to this diagram and it is likely to be easier for others to understand if you try and show a progression through time – e.g. past at the top, present in the middle and future at the bottom. But as you will see from the authors' diagrams, distinguishing between past, present and future when some strands of activity have been ongoing for a long time is not always easy!

You need not limit yourself to the kinds of elements shown in the example. Many different aspects of professional and personal experience can be relevant to the course and to systems thinking and practice in PhD research. Remember you are just making a start here, so try to distinguish what you think is relevant and don't try to capture all aspects of your past experience. You can adjust the diagram later on if you wish once you have engaged more with what the course includes. And the iterations of the diagram can prove insightful as your understanding of how and why you arrived at the course deepens and may suggest other future trajectories.

Please post your trajectory diagrams on the program web site by Thursday 27th July: http://www.coexploration.org/systemicinquiry/ . Please bring hard copy to the first session of the course.

Pre-course assignment part 2 Reflecting on your use of systems theories

Consider where, if at all, your use of systems theories might appear on your trajectory diagram. Add it into your diagram if you think it is relevant, perhaps highlighting it or using a different colour. Write one or two paragraphs about the rationale you have followed, or would follow, in making a choice to include, or not, systems theories in your PhD research.

Please post your answers to both part 1 and part 2 onto the course website by at latest 1 days before the course starts. Also bring with you a paper copy of your answers, your diagram should be at least A3 in size so that others can read it easily.

Reference
Wenger, E. (1998) Communities of Practice: Learning, Meaning and Identity, Cambridge, Cambridge University Press.

Written Assignment 3:

Write reflections on the course and conference experiences and learning.

1.   As a group

a.   work as a critical social learning system to conduct a systemic inquiry into a situation of mutual interest related to the ISSS conference

b.   prepare one or more posters to report back on your process and your findings on the afternoon of Friday 29th July

c.   be prepared to comment on how well you think you and your group worked as a critical social learning system

2.   As an individual

Review your trajectory diagram and draw a second version of it, giving more detail on what you plan to take forward from the course to your own work. Bring your revised diagram to the final session on morning of Friday 29th July

UNIVERSITY OF COLORADO, BOULDER FOR CREDIT OPTION

Program

ISSS2016

Systemic Inquiry Co-Laboratory

Systems Thinking and Practice in Graduate Research: Realizing Sustainable Futures in Socio-Ecological Systems

University of Colorado, Boulder, USA
Summer Session "B"
5th July – 5th August 2016

Course programme

	Morning	Afternoon	Evening
Pre-Course preparation 5 July – 21 July	• Familiarise yourself with the program for the systemic inquiry.	• Read your pre-joining instructions • Review Key References	• Establish on-line contacts • Write Personal Mission / Purpose
Friday 22nd July Classroom Instruction I: 9AM-12PM Classroom Instruction II: 1:30PM – 5PM	Introductions: • sharing our research and systems trajectories – personal mission/purpose • working as a critical learning systems (CLS) community • reviewing STiP experience & taking an overview of the course resources and program • Emergent issues from your own experiences of Systems	• Systems research frameworks and traditions • Implications of these frameworks and traditions for knowledge and practice • Research modes and methods • Introducing systemic inquiry in context of ISSS (SI session 1)	• 'Walking our talk': grounding what has been presented in your own context. • Practical exercise over dinner • Assignment: Write an op ed style essay stating your orientation / framework / research methodology for systems inquiry and/or practice

Saturday 23rd July Classroom Instruction III: 9AM-12PM Classroom Instruction IV: 2PM – 5PM	• Exploring three traditions – systems, cybernetics and complexity • Exploring contexts, emergence & theoretical/philosophical issues	• Using systems approaches, methodologies, tools, techniques, modelling • skills/enthusiasm audit; contracting/protocols • Contextualising you and your research': Discuss Op Eds	• Assignment: Select a topic and case-study to research during the conference, based on conference presentations.
Sunday 24th July Co-Laboratory I & II	Continuing a systemic inquiry at ISSS: • Select appropriate ISSS pre-conference workshops • preliminary designs for final presentation.	• *Attend workshops or Small group sessions* • Clarifying tasks for the week • *ISSS Reception at 1800 (t.b.c)*	• Prepare conference attendance plan
Monday 25th July Co-Laboratory II	Conference Registration (cont'd) Lecture sessions	Conference Sessions	Networking; inquiry conversations
Tuesday 26th July	Lecture sessions	Conference sessions	5pm to 6pm CLS community reflections session 1
Wednesday 27th July	Lecture Sessions	Conference Sessions	
Thursday 28th July	Lecture sessions	Conference sessions	5pm to 6pm CLS community reflections session 2 Finalising feedback presentation
Friday 29th July	Lecture sessions	• Final course assignment: • Group report (plenary) • Linking your future research trajectory design to your inquiry outcomes. • Final discussions • 1700 Conference Closing	
Saturday 30th July	• Self-organizing discussions		
Friday 5th August	• Final papers due		