



**YEAR 5 ANNUAL REPORT OF THE
NATIONAL SOCIO-ENVIRONMENTAL SYNTHESIS CENTER**

Reporting on Activities from September 2015 to August 2016



www.SESYNC.org



INTRODUCTION

SESYNC funds the world's leading social and natural scientists to travel to the Annapolis facility and work intensively in transdisciplinary groups to advance fundamental research on socio-environmental (S-E) problems. The formal mission of the Center is to foster synthetic, actionable scholarship related to the structure, functioning, and sustainability of S-E systems. Since its inception SESYNC has developed a rich portfolio of synthesis activities and support services focused on helping researchers, policy-makers, and representatives of many different groups to work together to discover solutions to socio-environmental problems.

Environmental problems are by definition social problems and so it follows that SESYNC was founded on the premise that progress toward a sustainable future requires new knowledge that arises from close collaborations across many disciplines and sectors including, for example, the natural and social sciences, the humanities, NGOs, and agencies. Further, this knowledge must be actionable. We have experimented with the design of programs and the implementation of processes to accelerate knowledge generation, build new communities, educate and engage young scholars and teachers, lower the barriers to adopting unfamiliar synthesis methods, and to grow the synthesis process. We place a premium on flexibility and openness to new ideas from the community -- not only topically but methods of engagement and synthesis team building. We practice "gentle interventions" with teams to help them overcome hurdles.

The challenges and the experimental and adaptive nature of SESYNC requires that the leadership and staff be very engaged with research teams. In only four years we have grown enormously and strived to become increasingly creative in our center processes and programs. Over the course of Year 5, we continued to grow our core activities through new Thematic Pursuits, Workshops, and Fellowships. This strong foundation provided Center leadership and staff with a wealth of information to understand not only what has been successful, but also to push us to examine and implement new, creative approaches — those that will help the Center adapt to the needs of a diverse community of users.

CAPACITY-BUILDING FOR S-E SYNTHESIS

Postdoctoral Training. SESYNC offers a variety of training and professional development opportunities and programming for undergraduates, graduates, postdocs, and scholars. SESYNC awards four to six new two-year fellowships each year, resulting in a steady state of 10-12 resident postdocs. In Year 5, we had a total of 13 Postdoctoral Fellows at the Center. Postdoctoral Fellows are expected to conduct original synthesis research and to organize or contribute to some SESYNC activity or program that benefits the socio-environmental synthesis community. The latter may be internally or externally focused and could include, for example, organizing a workshop on a synthesis method or topic, contributing to the education program at SESYNC, or developing a set of scholarly blogs.

Each postdoctoral fellow has one or two collaborating mentors to support technical or novel aspects of their synthesis research. These mentors may be located anywhere and may be from any sector (e.g., academia, NGO, etc.). The mentor-fellow relationships will be new, to help Fellows expand not only their

expertise but also their professional/research networks. We facilitate these interactions by providing funds for travel by the fellow or the mentor to work together, by soliciting the mentor's input in annual evaluation of the postdocs, and by providing mentors remote access to the Fellow's presentations at SESYNC.

Drs. Margaret Palmer and David Hawthorne are the on-site postdoctoral mentors that organize activities for the Fellows as a group and also help each individual postdoc develop their own professional development "program". In some cases, Fellows want teaching experience and so SESYNC leadership engages them in a short course or some teaching on the main University campus. For example, two postdoctoral fellows along with Dr. Hawthorne are teaching a graduate-level interdisciplinary 3-credit course, "Socio-environmental synthesis & sustainability research" this semester (Spring 2016). This course will introduce students to the theory and practice of socio-environmental synthesis (SES) and sustainability research and introduce students to the practical aspects of socio-environmental research design, team science, and grant writing. Other postdocs seek guidance preparing applications for positions or grant proposals, developing effective research presentations, building research networks, and the full suite of professional skills needed to become successful scholars. There is wide variability among the needs of our postdocs so much of this mentoring is one-on-one and varying as needs arise.

Palmer, Hawthorne, and Assistant Director of Education, Dr. Cindy Wei, organize a number of formal activities for the fellows that are intended to build specific skills. These vary over time depending on postdoc interests but have included the following:

- Communication Skills Workshops – communicating with the public, policy makers, etc. (outside expert group such as Compass runs the workshop)
- Workshops on Research Funding sources and writing strong proposals (Drs. Palmer, Boyd and Hawthorne)
- Lecture-discussions on the science-policy link (Dr. Boyd)
- Organized visits to NSF where program officers give presentations and fellows get to meet one-on-one with the most domain appropriate officer (Dr. Wei organizes)
- Data Carpentry Workshops and weeklong Computational "Institutes" (SESYNC cyber staff)
- 10 day Bayesian workshop (Dr. Tom Hobbs, Colorado State Univ. and Dr. Mary Collins, SUNY-ESF)

Graduate Student Training. In 2012, SESYNC implemented a new program to foster and support interdisciplinary, team-based synthesis research by advanced graduate students. Our commitment to this work stems from recognition of the potential for important contributions by graduate student researchers—contributions that are often made more difficult by the challenges of more traditional, disciplinary-focused programs and the demands of their academic work. The program provides opportunities for doctoral students to network across multiple scholarly disciplines, gain skills in conceptualizing S-E systems and in proposal writing—all leading to the opportunity to conduct original, team-based S-E synthesis research at SESYNC. We initiated the program with a highly interactive workshop that offered students the opportunity to build knowledge and skills needed to conduct S-E

research. Applications were screened and a participant list developed that included both natural and social scientists to help attendees develop new networks and interdisciplinary research collaborations. The workshop included plenary talks on S-E systems from noted scholars, discussions of how knowledge can lead to decision-making, and interactive sessions on team science and proposal writing. A number of attendees went on to write successful proposals for the RFP that followed.

Following this workshop, SESYNC issued an RFP for graduate student research. Open to students from the U.S. and international institutions of higher education, the RFP focused on two themes originally developed by graduate students: 1) Cities in Sustainable Resource Management, and 2) Surprise in Human Adaptation to Environmental Change. Six of the fourteen proposals reviewed were accepted for support. Each synthesis team (6 to 8 participants) is led by 2 students—often from different disciplines. All team leads met at SESYNC prior to the start of their Pursuits and participated in sessions on research design, team science, and linking knowledge to action. The group will re-convene at the conclusion of their work to discuss accomplishments and challenges experienced over the course of their team’s research. The program has run from February 2015 to the present, and most groups have completed or are approaching their third onsite meeting. The teams receive the full suite of support services offered to all teams at SESYNC, including our complete portfolio of computational services. External subject area specialists and stakeholders (knowledge users) are also linked to these projects. All leads participate in onsite mentoring during their team meetings. This includes preparatory and post meeting discussions with a special emphasis on skills needed for interdisciplinary team process. At the conclusion of their work all participants will receive an honorarium and will be designated SESYNC Graduate Research Fellows. A second RFP for graduate student research was issued in October 2015 and those applications are currently under review.

IMPACT

Socio-Environmental Science. Our support for exceptional scholarship has been evident in the many publications and other products teams develop. The body of published work originating at the Center continues to increase as more projects come to fruition. These publications are found in a very diverse cross section of journals, many of which are quite high profile. Over time we believe that there will be a lasting impact of this scholarship on S-E science. Similarly, cohorts of postdoctoral scholars are now leaving SESYNC to take a variety of academic (10) and non-academic positions (4) and graduate scholars are move on to the next stage of their careers. Armed with a better understanding of new disciplines, new technical skills, and a strengthened disposition to work collaboratively on problem-focused S-E synthesis research, these early career scholars will have a lasting impact.

Interdisciplinary teams are central to the success of synthesis research at SESYNC and we have developed a flexible process to support and accelerate teams throughout a project’s lifetime. Given the unique challenges of actionable S-E scholarship, SESYNC’s approach (our “process”) has been informed by research in diverse areas including: inter- and transdisciplinary studies, cognitive and learning studies, and the science of team science. We interact with teams across four general phases: engaging, priming, supporting, and outcomes. Feedback derived from formal and informal interactions, observations, and gentle interventions suggest that our approach is having an impact on teams while they work with the

Center and more broadly as this growing community takes the approach forward to synthesis projects beyond those conducted here. Lessons learned over our first 5 years have given us a strong foundation and a methodology for fostering effective S-E synthesis and problem solving.

Collaborative Project Development. Given our mission to build capacity in S-E research, SESYNC staff discuss proposed projects with team leads prior to submission and provide feedback on optimal revisions following expert review. A highly interactive panel review process facilitated by SESYNC leadership is designed not only to identify the strongest proposals, but also to explore how projects might be improved by sharpening questions or considering new methods, clarifying conceptual frameworks, expanding or changing team composition (expertise, disciplinary diversity, and degree of prior collaboration), or considering additional data. Team leads are generally very appreciative of these interactions and the feedback we provide. Project development and review become more of a learning experience and there is substantive improvement in the applications as they go through the process. One added impact may well be to help refine review processes for highly interdisciplinary research proposals. The high level of iteration, targeted engagement of a long-lived interdisciplinary review committee, and facilitated process designed to improve worthy applications is emerging as a model that could be replicated in other instances where interdisciplinary approaches are required.

Project Planning and Meetings Design. All team leads participate in a "priming" webinar with a core set of SESYNC staff that focuses exclusively on their project. This discussion gives all a better understanding of the scholarly problem and further introduces the PIs to the resources at the center. A set of standard queries is posed examining issues regarding data (access, amounts, quantitative or qualitative nature), logistics, and potential epistemological hurdles associated with interdisciplinarity. We emphasize the central role of leaders in articulating an early vision and in building effective team process. For a number of teams, advice on effective meeting structure is very useful. Discussions with SESYNC staff often focus on pre-meeting activities and specific goal-oriented agendas that balance group work with time for individual reflection and opportunities for flexibility. We think this early, active engagement and emphasis on planning and design does more than prime each project. By emphasizing preparation we are attempting to impact how team leads approach teamwork itself. This is an often under-valued capacity that SESYNC is working to enhance.

Computational Support. A comprehensive overview of computational, analytical, and communication support tools are made available to all teams. A dedicated 9-member team of IT and computational experts is available to help in advance of or during team meetings. These experts work to understand the unique needs of each project and sometimes assist as participants, combining and analyzing diverse types of data. Ongoing engagement between these staff and team members is a key component of SESYNC's support structure. This active engagement around computational needs is essential for many individual projects at the Center. However, the impact goes beyond research conducted here. When combined with our very successful and often over-subscribed computational short courses, SESYNC's investment in computational support is helping researchers (from emerging to senior scholars) and disciplines (from social to biophysical sciences) gain new and durable capacities that they will carry forward to work beyond that completed at the Center.

A Focus on Interdisciplinary Process. Facilitation services have become an important tool for a number of teams working at SESYNC. Interactions with SESYNC staff during the early design phase and especially during the first (often critical) team meeting has helped teams in the development of a shared conceptual framework and to ensure the involvement of all team members and their diverse perspectives on research problems. Overall this has had a positive impact on the interdisciplinary synthesis being done. More broadly, it has given SESYNC an opportunity to introduce teams and team leads to a more process-based approach to teamwork. As our community builds, we think this will have a lasting impact on how inter- and transdisciplinary science is done and will enhance approaches to S-E problem solving.

Actionable Science. Over the past 5 years we have made a concerted effort to discuss the relevance of our projects to decision-making, resource management, and informing policy contexts with team leads and team members. We also actively encourage integration of decision-makers and knowledge users in appropriate ways in projects especially during the initial development of questions and conceptual models. This form of co-development is an important part of transdisciplinary solution finding. This is also a capacity building effort on our part. Over time this will have a positive impact on our community of users and ultimately on how scientific outputs from the work conducted at SESYNC can have broader societal impacts.

The SESYNC leadership has invested a significant amount of time in assisting teams in identifying the disciplinary breath and specific people that are needed to address their research questions. This has contributed to creative productivity of new forms for most academic researchers. Sector diversity is substantial since many groups had participants from the potential “knowledge-user” community to help ensure actionability and scholars came not only from academia but from NGOs, governmental entities, and the business sector. Among the scholars and practitioners, disciplinary diversity within and among teams is clearly very high but it is worth noting that when participants are asked to self-characterize according to the types of disciplinary areas that NSF uses, there are lots of complaints. Many of our participants feel that they cut across several disciplinary lines, a trend which is increasingly common throughout science. In the demographic survey, participants are asked to self-characterize according to the categories of natural scientist, social scientist, computer scientist, more than one (multi), policy, NGO, government, business, or other.

Human Resources. The total number of funded participants has roughly doubled each year and SESYNC is on a path to have more than 2000 participants visit the Center during this 5th year. The number of proposals we receive has risen steadily. This year we received 58 applications for postdoctoral fellowships and 62 proposals for team synthesis projects from our fall 2015 and spring 2016 RFPs for Pursuits and Workshops. The community is growing and is diverse by all measures – geographic, disciplinarily, by sector, gender, and race/ethnicity.

For those who filled out a demographic survey for Themes, Workshops, Ventures, Short Courses, Foundation Series, and/or Theme Identification Meetings, the following percentages illustrate SESYNC’s impact on the development of human resources.

Of those who filled out a survey, there are 644 men and 531 women (56.3% and 43.7%, respectively). Approximately 77% of participants are from the United States and 33% of participants come from 43 countries around the world. Those from the US come from 47 states in addition to Washington, DC.

Participants are also categorized as “academics” or “knowledge users” based upon their selection for “institutional status” within the demographic survey. Academics are those within academic institutions as graduate/postdoc students and teaching or research faculty and knowledge users are those within the policy, business/industry, government, or NGO sectors. Of those reporting from our Pursuit, Venture, Workshop, and Foundation programs, there 763 academics, 243 knowledge users, and 13 participants who classify as both. Of the overall knowledge users, 51% come from the NGO/non-profit sector, 41% from the government sector, and 9% from the business/industry sector.

SESYNC's disciplinary diversity of participants who filled out a demographic survey is illustrated in the percentages of overall “scholars” within each discipline below.

- Life sciences: 30%
- Social sciences: 31%
- Geosciences: 13%
- Computer science: 12%
- Policy: 5%
- Computer Science and Engineering: 12%
- Public health: 1%
- Education: 3%
- Humanities: 2%
- Other (e.g., business): 2%

SESYNC's knowledge user diversity of all participants who filled out a demographic survey is illustrated in the percentages of overall “knowledge users” within each sector below:

- Government: 41%
- Business/industry: 9%
- Non-profit/NGO: 51%

SESYNC's race and ethnic diversity of all participants who filled out a demographic survey is illustrated in the percentages below versus All Biological Science Degrees, US Citizen and Permanent Resident (2012) from the National Science Board Science and Engineering Indicators in parentheses:

- White: 75.3% (67.6%)
- Asian or Pacific Islander: 8.9% (11.7%)

- Black: 3.2% (4.7%)
- Hispanic: 5.3% (5.8%)
- American Indian or Alaska Native: 0.3% (0.6%)
- Other or Unknown Race or Ethnicity: 2.4% (9.6%)
- No response: 9% (n/a)

Societal Impact. Fostering actionable scholarship is critical if the research community is to increasingly contribute to the solution of societal problems. “Actionable” has a very specific meaning in the context of SESYNC’s goals. It is meant to describe a characteristic of SESYNC’s portfolio of funded projects. Many, but not all, synthesis teams directly engage non-academics who we refer to as potential “knowledge users”. Other teams undertake projects that potential knowledge-users have identified as important to our mission. In SESYNC’s earliest years, the knowledge-users provided this input during development of SESYNC research themes; today this input occurs in a continual and more comprehensive as these knowledge-users are fully integrated into our advisory boards (both the senior, External Advisory Board and the large Scientific Review Committee) as well as a many projects.

The participation of knowledge users helps frame research questions that emphasize solutions to socio-environmental problems, stimulate creativity, provide guidance on policies and institutions affecting environmental decision-making, and communicate with broader audiences. SESYNC embraces a spectrum of actionable scholarship, from fundamental research needed before more applied research can move forward, to research on broad, global socio-environmental issues, to research that informs more specific policy questions. Policy-relevant research is only one form of actionable scholarship and includes, for example, a SESYNC project that integrated concepts and methods from ecology and engineering to develop a new framework for enhancing resilience of large water infrastructure projects in the face of climate change. This has the potential to inform policies on what type of infrastructure projects are funded and how they evaluate projects; representatives from the World Bank as well as the Army Corps of Engineers participated in this synthesis effort. At the other end of the spectrum of actionability, SESYNC supports highly fundamental projects such as one that is using cultural evolutionary theory to develop generalizable hypotheses and causal explanations for change in socio-ecological systems.

Actionable scholarship is often under-rewarded within academia. Further, academic researchers often lack the training and experience needed to productively interact with knowledge users and to address public policy questions, as opposed to purely academic questions. We see our mission as primarily geared toward the academic community’s development of new actionable skills, research, and partnerships. SESYNC therefore takes a deliberate approach to fostering actionable scholarship. We do this in both systemic and targeted ways and will expand this as outlined here:

- **Inclusion of knowledge-users in the SESYNC community and on research teams.** This practice will go beyond simply encouraging this to work iteratively with potential PIs on actionability prior to proposal submission. Of those reporting demographic information from our core programs, 24% of SESYNC participants come from outside academia and 70% of the 97 research teams reporting include knowledge users.

- **Integrate in Team Facilitation.** For those synthesis teams that use our facilitation services, we will deliberately include a component on relevance to policy, institutional, and resource management encouraging integration into conceptual models and question formulation. An emphasis on geospatial data and informatics will be part of this due to spatial information's increasing importance to decision making and science communication. We already require all proposals include a section on actionability and our review committee takes this seriously.
- **Pro-active Recruitment of Projects.** SESYNC will also continue to support projects specifically targeted at actionable scholarship. For example, we have funded “Foundations” projects focused on topics like “Large-Scale Natural Resource Conservation and Restoration,” “Sociological Perspectives on Non-State Actors in Environmental Governance,” and “The Limits of Environmental Governance.”

DISSEMINATION OF RESULTS

SESYNC's communications program translates and disseminates research results, promotes the Center's programs, and builds the capacity of the Center's researcher community to engage with broad audiences outside of academia. Our strategy in this regard is based on producing high-impact digital communication products and actively developing networks to connect researchers to key knowledge users and decisions makers.

Between September 1, 2015 and February 11, 2016, the SESYNC website received 37,141 total visits. Aside from the homepage, this traffic was heavily concentrated around funding opportunities—i.e., dynamic site content that received extensive advertising and outreach support, including the Immersion Postdoctoral Fellowship program, SESYNC-LTER Postdoctoral Fellowship program, Synthesis Research for Graduate Students program, and Bayesian Modeling short course. These analytics reflects the effectiveness of our advertising, new media, and general outreach efforts around dynamic website and deadline-oriented content.

SESYNC's social media channels—which include Facebook, Twitter, YouTube, and LinkedIn—have been extremely successful tools for reaching and engaging new audiences within the scholarly community, with a primary goal of driving those audiences to dynamic content on our website. For example:

- Our Twitter community continues to grow, increasing from 2,095 followers (May 2015) to 2,705 followers (February 2016).
- Twitter is our #1 referral of web traffic, representing 27.3% of total referral traffic between September 1, 2015, and February 11, 2016.
- Our Facebook community also continues to grow, increasing from 754 likes (May 2015) to 886 likes (February 2016).
- Facebook is our #3 referral of web traffic, representing 10.9% of total referral traffic between September 1, 2015, and February 11, 2016.

In addition to the above, SESYNC's Fellow for Socio-Environmental (S-E) Understanding, Lisa Palmer, actively engages in communicating complex socio-environmental research and issues to the educated public, researchers, graduate students, journalists, knowledge users, practitioners, and the policy community through communications channels and activities that bridge science communications to new audiences. These bridging activities include:

- Writing news feature articles and news analysis for major national and international media;
- Presenting at public events and invited talks for knowledge users;
- Participating in moderated panels and roundtable discussions hosted by NGOs;
- Presenting at a plenary discussion for professional development of journalists and scientists; and
- Formal and informal discussions with SESYNC post-doctoral fellows and researchers through the exchange of ideas and resources for strategic communications.

The policy development and knowledge user communities regularly invite the SESYNC Fellow for S-E Understanding to speak at public events and private roundtables. These activities bridge the science of SESYNC to new audiences. A few of these interactions include:

- Keynote speech at the National Youth Summit on the Environment at George Mason University;
- Participant in invited private roundtable discussions at the Council on Foreign Relations regarding deforestation in Indonesia; and deforestation, reforestation, and afforestation in Brazil;
- Panel moderator at the Society of Environmental Journalists annual conference in Norman, Oklahoma;
- Panel speaker at The Wilson Center in Washington, D.C. on natural resource conflicts and environmental sustainability in India; and
- Speaker invited by the U.S. State Department's International Visitor Leadership Program to engage with Indonesian agriculture and food security leaders in Washington, D.C.

The SESYNC Fellow for S-E Understanding has written articles and news analysis for major national and international media. For example, *The Guardian* published "Businesses delivering the most coveted perk: a better commute," sustainability article to improve understanding of the challenges companies and communities face in providing alternatives to single-car drivers to work. SESYNC supported researcher Garrit-Jan Knapp was acknowledged and quoted in the article for his expertise in smart growth, and the article linked to his SESYNC research. *The Guardian* also published a technology and innovation article describing how solar powered irrigation and crop soil sensors assist farmers and agronomists in making better agriculture and natural resource decisions. The article, "India's climate tech revolution is starting in its villages," reported on the complexities of the food, water, and energy nexus in a changing environmental system.

The Fellow also records activities bridging science, understanding, and interactions with researchers, knowledge users, journalists, editors, and practitioners. The network includes 265

MAJOR ACTIVITIES

Projects Newly Funded.

Pursuits

Theme 11: Enhancing Socio-Environmental Research & Education

- 2015T11-005: Allison Metz; The development of co-creative capacity for addressing socio-environmental problems and beyond
- 2015T11-012: Synergizing public participation and participatory modeling methods for action-oriented outcomes
- 2015T11-002: Anthony Jakeman and Suzanne Pierce; Describing effective core practices for developing and using models to support integrated water resource management

RFP 12: Collaborative & Interdisciplinary Team-based Research Projects

- 2015C12-015: Robin Chazdon and Arun Agrawal; Tropical Reforestation
- 2015C12-017: Peter Jorgenson and Scott Carroll; Living with Resistance
- 2015C12-032: Alex de Sherbinin and Brian Tomaszewski; Meta-analysis of Climate Change Vulnerability Mapping
- 2015C12-041: Christopher Golden, Eddie Allison, and Doug McCauley; Fisheries and Food Security

RFP 13: Collaborative & Interdisciplinary Team-based Research Project

- 2016C13-002: Kimberly Carlson and Rachael Garrett; Supply chain commitments
- 2016C13-014: Jill Caviglia-Harris, Ellen Wohl, and Petterson Vale; Forests, agriculture, and river (FAR) systems in the Brazilian Amazon

Graduate Student Pursuits, Cohort II

- 2016GS-001: Emily Burchfield, John Nay; Data-Driven Drought Effect
- 2016GS-002: Jason Stewart Walters and Alexander Metzger; Transcending Boundaries
- 2016GS-004: Sameer Shah and Udit Sanga; Agrarian Adaptation

Workshops

- 2015W-045: Nick Magliocca and Erle Ellis; Assessing global knowledge gaps in local land change studies
- 2015W-050: Lara A. Roman and Hamil Pearsall; Growing the Urban Forest
- 2015W-051: Erik Nielsen and Kendra McSweeney; Modeling narco-landscapes

- 2015W-052: Stephen Powers and Genevieve Metson; Human dimensions of the P cycle
- 2015W-053: Elicia Ratajczyk Ute Brady Breaking the Code
- 2015W-054: Sanford D. Eigenbrode and Lois Wright Morton; Big Interdisciplinarity
- 2016W-055: Perril Hamel and Motivating and improving uncertainty assessment in ecosystem services modeling to inform decisions
- 2016W-056: Avery Cohn and John Duncan; Accuracy assessment of approaches to predicting smallholder farmer wellbeing, and spatial patterns in wellbeing, using remote sensing data
- 2016W-057: Daniel Schneider and Michael Levy; Socio-spatial ecology of the bed bug and its control

Short Courses

- Short course 10: Computational Winter Institute (March 2016)
- Short course 11: Teaching socio-environmental synthesis with case studies (June 2016)
- Short course 12: Social Network Analysis: An Introduction with an Emphasis on Application in R (June 2016)
- Short course 13: Teaching socio-environmental synthesis with case studies (July 2016)
- Short course 14: Computational Summer Institute (July 2016)
- Short course 15: Bayesian Modeling for Socio-Environmental Data (August 2016)

In addition to funding the projects above, Synthesis teams, fellows and staff produced over 200 peer-reviewed journal articles since 2011. The publication outlets for these articles include some of the highest quality journals that span many disciplines including: Science, Nature Climate Change, Social Networks, Behavioral and Brain Research, Conservation Letters, Current Anthropology, Ecological Economics, Ecology, and Landscape and Urban Planning. In addition to publications, other products of team efforts from our core programs include 258 presentations and 64 proposal submissions for grants or follow-on funding. 186 graduate students were included as participants within our core programs.