

Emerging Leaders In Science & Society



Annual Report Class of 2014

*ELISS is a pilot program of the
American Association for the
Advancement of Science*



ADVANCING SCIENCE. SERVING SOCIETY

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CONTENTS

ELISS Overview	2
Letter from the Director	3
Class of 2014.....	4
Choosing the First Class	4
Orientation	4
Situation Assessment.....	5
Team 1: Mental Health	6
Team 2: Food & Nutrition	8
Team 3: Public Spaces	10
What We Learned	12
Financial Report.....	14
Our Future: The Class of 2015.....	15
Conclusion	16

ELISS OVERVIEW

The Problem

Addressing society's most pressing problems requires synthesis of knowledge and action across many disciplines. Unfortunately, most graduate education programs are so narrowly focused that disciplinary experts do not develop the skills or networks needed to contribute effectively to solutions for real-world problems.

Our Mission

To address this, Emerging Leaders in Science & Society (ELISS, pronounced EE-liss) prepares graduate and professional students to collaborate across boundaries for the benefit of society. By competitive application, ELISS fellows volunteer for a 15-month extracurricular program in which they build capacity for collaborative leadership through a project that engages campuses and communities around a knotty, real-world issue. Through service to their communities, ELISS fellows gain valuable skills, networks, and a broad awareness that will help them to pursue impactful careers in many sectors.

Vision

ELISS is not just a 15-month program, but an entrée into a life-long professional community with a common desire to benefit society and a diversity of knowledge, skills, and networks to drive systemic, resilient change.

"I feel I have truly changed the way I think and approach problems. I recently read some thoughts from last year about how I was feeling the need to find my passion and define clearer career goals; as I look back, I see that ELISS has been a big part of helping me find that passion and vision. I am grateful also for not only the knowledge and experience that I gained, but also the very valuable friends and connections."

- A 2014 ELISS Fellow

History

ELISS is a grassroots effort hosted by the American Association for the Advancement of Science (AAAS), the largest interdisciplinary scientific society in the world. The ELISS pilot class began in January 2014, with sixteen fellows selected from more than 100 applicants at four campuses: University of Pennsylvania, Purdue University, Stanford University, and University of Washington. The class of 2015, also from these campuses, is currently underway and we are inviting four additional campuses for the class of 2016.

LETTER FROM THE DIRECTOR

Dear ELISS Supporters:

It is with much gratitude that I write to share the results of the pilot class of Emerging Leaders in Science & Society. I'm sure many of you know the ins and outs of starting new programs, particularly one that doesn't fit neatly within traditional institutional structures, like ELISS. ELISS would not have happened without your support, whether monetary or in-kind.

As you will see in the report to follow, ELISS is off to a great start. The first class of 2014 represented a wide range of programs – ranging from the medical professions to engineering to social sciences. Through conversations with more than 100 experts and stakeholders from many disciplines and sectors, they gained a more nuanced understanding of how disciplinary expertise shapes real-world action. They also improved important career skills like teamwork, communication, strategic planning, and networking.

Not only did fellows benefit, but they created benefit for others by stimulating creative conversations on issues among people who wouldn't normally interact. For example, an event about reducing mental health stigma included counselors, police officers, people suffering from mental health disorders, and their families.

We learned a lot during this first year. We enlisted the help of Dr. Gary Olsen from UC-Irvine, who is the PI of an NSF-funded project to determine factors that affect collaboration success in teams, to survey the fellows throughout the year to track progress of individuals and teams. He provided us feedback that informed our practice while using the data to advance the scholarly understanding of collaboration in teams.

As many of you know, we ran the pilot year on a shoestring budget. Now that we have a prototype to show off, we are much better positioned to secure the funding necessary to move ELISS from a pilot to an established program. We also look forward to welcoming four new campuses in 2016 and working with all campus partners to leverage the good work they're already doing, provide more value to more students, and share useful practices among campuses. As we move forward, we invite you to join with us to tap the wealth of knowledge and talents of graduate and professional students for the benefit of society.

Thank you again for your support. Don't hesitate to contact me directly with questions, suggestions, or concerns.

With gratitude,

Melanie Roberts, ELISS Director
mroberts@elissfellows.org

CLASS OF 2014

The pilot class of ELISS was comprised of sixteen fellows from our four founding campus partners. Fellows volunteered approximately 3-5 hours per week and traveled for three in-person meetings during January 1, 2014 – December 31, 2014.

CHOOSING THE FIRST CLASS

- Application – received 108 completed applications for 16 spots, a 15% acceptance rate
- Selection – ninety volunteer reviewers and interviewers from different sectors scored applications and interviewed semi-finalists based on selection criteria:
 - Demonstration of leadership potential
 - Experience working in teams
 - A commitment to serve society
 - Excellence in their chosen fields
 - Breadth of interests
 - Unique knowledge, perspectives, or experiences that could contribute to ELISS

ORIENTATION

Sixteen ELISS fellows gathered for orientation in Bainbridge Island and Seattle, Washington from January 23-28, 2014. Orientation helped to build a community grounded in shared experience and to introduce leadership skills that the fellows would employ throughout the year. The fellows self-assembled into three interdisciplinary, cross-campus teams around three issues that they selected from dozens they generated as a group: mental health, nutrition, and public spaces. A front-page AAAS news story further described the experience:

<http://www.aaas.org/news/new-program-mobilizes-young-scholars-investigate-complex-social-problems>.



Fellows discuss their project topic

ORIENTATION ACTIVITIES

- **Leadership development** – Facilitators guided fellows through exercises to build their skills in issues analysis, project management and virtual collaboration.
- **Group communication** – Fellows learned about active listening, dialogue, discussion, and facilitation.
- **Issue and team selection** – Fellows practiced brainstorming, discussion, negotiation, and decision-making as they narrowed the issue ideas from 48 to three.
- **Systems Thinking** – Fellows dug into their chosen issues through stakeholder analysis and an introductory information search.
- **Community Building** – During free time, fellows began cementing networks and friendships sparked during classroom skits and other exercises.

ORIENTATION OUTCOMES

- **Improved communication** – 88% of fellows reported using at least one of the techniques in their first team planning session.
- **Trust** – In a post-orientation survey, fellows indicated a very high level of trust in their fellow fellows and high expectation that they will actively help each other.
- **Interdisciplinary teams** – Fellows self-assorted into multi-campus teams around three issues: mental health, nutrition, and public spaces



Fellows listen to techniques in interdisciplinary collaboration

SITUATION ASSESSMENT

After orientation, fellows met with stakeholders in their communities to understand the major challenges in each issue area and to look for opportunities to combine ideas, knowledge, and people to expand options for addressing these issues. Each team came up with a guiding question to drive a series of community dialogues and an online issue guide. The sections that follow highlight activities and outcomes from each of the three ELISS teams of the 2014 pilot class.

TEAM 1: MENTAL HEALTH

TEAM MEMBERS

- Ruth Masterson Creber | *University of Pennsylvania*, School of Nursing
- Johannes C. Eichstaedt | *University of Pennsylvania*, Department of Psychology
- Cyan James | *University of Washington*, Public Health Genetics
- Eva Linh | *University of Washington*, School of Pharmacy
- Urusa S. Alaan | *Stanford University*, Materials Science and Engineering
- AbdulRasheed Alabi | *Stanford University*, *School of Medicine*, Molecular and Cellular Physiology



From left to right: A. Alabi, U. Alaan, R. Masterson Creber, C. James, E. Linh, J. Eichstaedt

SITUATION:

In initial interviews with stakeholders, ELISS fellows find that stigma is a root cause of many problems in the mental health system.

QUESTION:

Can we reduce mental health stigma?

STAKEHOLDERS CONSULTED

- Mental health policy experts
- Mental health researchers
- Mental health practitioners
- Non-profits focused on mental illness
- Current and former mental health patients and their families
- Students
- Educational leaders
- Law enforcement

ACTIVITIES

STORYTELLING AS A MODE OF UNDERSTANDING

- **Goal** – address stigma and misconceptions associated with mental illness
- **Approach** – humanize those experiencing mental health challenges by linking data about mental health and effective policy approaches with the faces behind that data (i.e. those who experience mental health challenges of varying degrees of severity on an ongoing basis)
- **Methods** – appreciative inquiry & storytelling to build community and highlight moments when policy could address mental health needs
- **Deliverables** – storytelling event to a packed house at a local coffee shop | community dialogue to create recommendations for reducing mental health stigma at a local level | a [documentary video](#) | a collection of self-recorded [mental health stories](#) | team presentation at AAAS



Storytelling event at a Seattle coffee shop

LESSONS LEARNED

Throughout the course of the year, the Mental Health team found that...

- **storytelling** builds trust and understanding among stakeholders better than facts and figures;
- **Affordable Care Act** legislation is being implemented differently in each state and agency;
- there is a great deal of **support for mental health care** and there are positive changes happening from grass-roots organizations to high-level government networks;
- there are many opportunities to make U.S. policies more inclusive, including **reducing stigma, recognizing community expertise, and integrating mental health service options.**



TEAM 2: FOOD & NUTRITION

TEAM MEMBERS

- Benjamin Chrisinger | *University of Pennsylvania*, City and Urban Planning
- Jonathan Kershaw | *Purdue University*, Food Science
- Kai Kuang | *Purdue University*, Health & Risk Communication
- Allison Rhines | *Stanford University*, Biology



From left to right: A. Rhines, K. Kuang, J. Kershaw, B. Chrisinger

SITUATION:

In initial interviews with stakeholders, fellows found that a number of food labeling initiatives were underway, potentially providing a lever for widespread changes in eating behavior.

QUESTION

Can effective food labeling help consumers to make more healthful food choices?

STAKEHOLDERS CONSULTED

- Food industry representatives
- Federal regulators
- Public health officials
- Dietitians
- Food store owners
- Nutrition advocates
- Scientists
- High schoolers
- Parents

ACTIVITIES & EVENTS

COMMUNITY DIALOGUE

- **Goal** – to examine how information impacts food choices and nutrition in each of their three communities
- **Approach** – gather case studies from the community to inform interdisciplinary dialogues on food labeling
- **Deliverables**– dialogue improving point-of-purchase information in corner stores | interdisciplinary, student-driven discussions about encouraging healthier food choices in grocery stores, restaurants, and schools | online issue guide



Campus event at the University of Pennsylvania

DC BRIEFING & DISCUSSION

- **Attended by** – representatives from the USDA Food and Nutrition Service and Economic Research Service, Food Marketing Institute, Union of Concerned Scientists, and International Food Information Council (IFIC)
- **Activity** – facilitated a discussion on the challenges and opportunities in federal nutrition policy and how early-career people like them can get involved
- **Resulted in an invitation** to do follow-up research with the IFIC, demonstrating the power of ELISS to create opportunities for graduate students



Presenting findings to stakeholders and policy makers at the DC Briefing

LESSONS LEARNED

Throughout the course of the year, the Food & Nutrition team found that...

- food labeling plays a **small, but important role** in choices around healthy eating options;
- interventions to improve health **must meet people where they already are**—the resonance of particular health information is very context-driven;
- interventions must **recognize food market realities** to be readily adopted and replicated.



TEAM 3: PUBLIC SPACES

TEAM MEMBERS

- Afroz Algiers | *Stanford University*, Sustainable Design & Construction
- Mariya Krisenko | *Purdue University*, Interdisciplinary Life Sciences
- Abby Reed | *Purdue University*, Hospitality & Tourism Management
- Maddie Stone | *University of Pennsylvania*, Earth & Environmental Science
- Amber Trout | *University of Washington*, Built Environment



Members of the Public Spaces team make plans at orientation (clockwise from the left: M. Krisenko, A. Algiers, M. Stone, A. Trout; not pictured: A. Reed)

SITUATION:

The concept of “sustainability” gets lots of people into a room, but different definitions, jargon, and goals makes it difficult to work together productively.

QUESTION

Can public spaces serve as a framework for productive dialogue on trade-offs in environmental, economic, and social goals of sustainability?

STAKEHOLDERS CONSULTED

- Urban planners, designers, and architects
- Local government officials
- Non-profits (arts, social services, bike)
- Local businesses & corporations
- Educational leaders
- Neighborhood associations
- Citizens (parents, singles, & park users)
- Students

ACTIVITIES

COMMUNITY DIALOGUE

- **Goal** – demonstrate how to capture local knowledge while building a ‘how to’ guide for communities that may not have an urban planner involved
- **Approach** – employ a methodology for collaborative visioning from architecture/design, called a charrette, to discuss tradeoffs of environmental, social, and economic goals within the context of public spaces
- **Local events** – invited graduate students from multiple disciplines (e.g., medicine, biology, design) to participate in a charrette to design a public space in their campuses or communities
- **DC Briefing** – led a design charrette to reveal tradeoffs of environmental, social, and economic uses of the National Mall



Campus event to discuss the future of public spaces

LESSONS LEARNED

Throughout the course of the year, the Public Spaces team found that...

- **buzz words like ‘sustainability’** may not be a very useful starting place for productive visioning and planning;
- many public spaces (such as community gardens, bike paths, rain gardens, playgrounds) were labeled as “sustainable” without necessarily considering **long term impact or multiple goals** of sustainability;
- **providing a specific example** or scenario, like design of a public space, is a useful method for promoting productive communication between those who focus on different but interrelated goals.



WHAT WE LEARNED

ELISS 2014 was a year of great excitement and learning. The most significant accomplishments of the past year provide a critical foundation for success and continuous learning in ELISS.

1. A prototype product

Prior to this year, ELISS was just an idea on paper. In the pilot year, 15 fellows successfully navigated their projects, including discovery phases, community engagement initiatives, and summary presentations. We now have deliverables to show and stories to share about what ELISS fellows do and how the experience impacted their ability to work in teams, to understand systems, and to make an impact on problems they care about. An early testimonial illustrates how ELISS impacted career outcomes:

“ELISS has helped me re-position myself and my scholarship - the experience has helped me realize the importance and challenges of interdisciplinary collaborations in addressing complex societal issues and how my research can best contribute to this process.”

Experiences like this will help us to further expand our base of funding, applicants, and partners.

2. A collaborative culture

A popular adage warns that “culture trumps strategy.” With this in mind, we have intentionally adopted practices to support an open, generous, curious, and humble culture. We were pleased with the outcome; in the final survey of fellows, “helpful culture” and “collaborative culture” were both ranked very highly (6.4 and 6.7 on a 7-point scale, respectively).

Because they got to know one another as multi-faceted people rather than just experts in a particular discipline, the fellows were able to better deal with conflict and understand their own mental models. In-person time was especially important for building this culture. Some testimonials highlighting this success include:

“My ELISS experience taught me to recognize how and where my own values were at play, and to contextualize them within a larger landscape. My teammates and I may not have always agreed on the best course of action for societal problems, but we did develop a shared understanding of a complex system. I now see this shared understanding as a critical place to start, though it takes a good deal of honest work to get there.”

“I really appreciated that we established a culture of trust on day 1. From the first few minutes, it was clear that we were going to be heard. I was surprised by how emotional I felt about everything. And how thankful I feel leaving [orientation]. I am not often “into” games, process, slow decision-making, but the activities were purposeful and quite moving. I am leaving truly influenced. And I am so beyond excited and connected with my fellow fellows.”

3. An expanded community of the willing

We are building a network of “true believers” in the untapped potential of graduate students and the power of diverse, distributed networks to influence systems change. For example, all of the 2014 fellows committed to helping future classes succeed and several participated in orientation for the class of 2015. Others are helping with marketing. Further, the student liaisons who initially set up ELISS on their campuses in 2013 are now serving as mentors for the second round of campus partnerships.



ELISS fellows in the Class of 2014 along with ELISS staff in Washington DC

Faculty, administrators, and community leaders are also a critical part of the ELISS community. We are grateful that all four initial partner campuses signed up to participate for a second year. Many other campus and community leaders helped to select fellows and are helping them to develop leadership skills. ELISS has also added advisors that represent many organizations, including the Aldo Leopold Leadership Program, Center for Creative Leadership, Juniper Networks, William Ruckelshaus Center (for collaborative problem solving), and federal agencies, among others.

Finally, we are expanding our community beyond the initial four campuses. For the second time, we ran an online student signature drive to “bring ELISS to my campus.” More than 2500 graduate students from 77 universities participated. Volunteer student liaisons from the four winning campuses are currently working to gain support from university administrators and to recruit applicants.

FINANCIAL REPORT

Funding for the first year came from our partner campuses, the Argosy Foundation, the Rita Allen Foundation, Gilbert Omenn & Martha Darling, and other individual donors. We supplemented these financial resources with a great deal of *pro bono* staff time and help with operating costs such as space and frequent flier miles. Ultimately, in kind donations represented 60% of the budget.

To grow the program, we will need to find additional funding to support staff for program management and communications, and hire consultants to further enhance the experience for fellows and help us evaluate outcomes. Armed with the “preliminary data” we gathered in the pilot class, we are in the midst of applying for grants to support these activities.

Financial Report for the Class of 2014 (n=16 fellows)

OPERATING	Actual Expenses	Estimated in-kind
Salaries	\$51,391	\$142,204
Other operations (supplies, travel, etc.)	\$10,375	\$7,525
Total Operations	\$61,766	\$159,729
PROGRAM		
Recruiting	\$2,559	\$420
Orientation	\$14,500	\$10,000
DC meeting	\$13,500	\$2,000
Fellow Projects	\$12,500	
Total program	\$43,059	\$2,420
AAAS fees	\$7,338	
TOTAL	\$112,163	\$162,149
	TOTAL COST	
	\$274,312	

OUR FUTURE: THE CLASS OF 2015

The Class of 2015 is already off to a great start! The selection process was once again quite competitive, with a ~20% acceptance rate. The 2015 fellows are:

- Ronan Arthur | *Stanford University*, Emmett Interdisciplinary Program in Environment and Resources
- Kendra Brown | *Stanford University*, Civil & Environmental Engineering
- Priyanka Brunese | *Purdue University*, Technology Leadership & Innovation
- Ava Carter | *Stanford University*, Stem Cell Biology and Regenerative Medicine
- Emily Grubert | *Stanford University*, Emmett Interdisciplinary Program in Environment and Resources



*Fellows in the ELISS Class of 2015 at Orientation, January 2015
(Left to right: B. Livesay, J. Ma, S. Mosbah, M. Munyikwa, M. Ostrowski, Y. Li, G. Innes, B. Paul, C. Tran, E. Grubert, M. He, R. Arthur, A. Carter, P. Brunese, K. Brown)*

- Monica He | *University of Pennsylvania*, Demography
- Gabriel Innes | *University of Pennsylvania*, Veterinary Medicine
- Yun (Rose) Li | *University of Pennsylvania*, Medical Scientist Training Program / Genomics & Computational Biology
- Brynn Livesay | *University of Washington*, Bioengineering
- Jing (Joy) Ma | *Purdue University*, Hospitality & Tourism Management
- Simon Mosbah | *University of Pennsylvania*, City and Regional Planning
- Michelle Munyikwa | *University of Pennsylvania*, Medical Scientist Training Program / Anthropology
- Matthew Ostrowski | *Stanford University*, Chemical Engineering
- Biswajit (Bish) Paul | *University of Washington*, Molecular & Cellular Biology
- Christine Tran | *University of Washington*, Educational Leadership & Policy Studies

This year, the program has been extended to 15 months, to allow a few months of overlap between ingoing and outgoing classes.

In the fall, fellows met with local leaders (e.g., staff in the state legislature and governors' offices) to collect topic ideas in the two ELISS theme areas: Health and Energy/Environment. They also met for informal discussions with local mentors to explore questions like "What type of leader do I want to become?" "What does good collaboration look like?" and "What are trends in graduate education, and how does ELISS fit in?"



Fellows in the Class of 2015 brainstorm topic ideas

The fellows convened for orientation from January 15-20, 2015 and chose to work on one of the topics that emerged from their meetings with local leaders: **epidemic preparedness**. They are now assessing the current state of epidemic preparedness in their communities and looking for opportunities to convene people and share ideas that can help their cities and campuses overcome challenges of preparedness. They will meet again for a planning meeting in Washington D.C. for a long weekend in June.

CONCLUSION

We are grateful to those of you who invested your money and/or time to help launch ELISS. We hope you agree that the results of the first year provide a solid proof-of-concept that an interdisciplinary, multi-campus, engaged leadership development program can work. Of course, we have lots more work to do! We are eager to incorporate tested tools, methods, and practices from multiple disciplines and programs and share what we are learning to contribute to a collective impact beyond what any of us can do alone. We look forward to continuing and enhancing partnerships with you and others to build a culture and capacity for interdisciplinary collaboration and knowledge transfer between universities and society.

