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The Creation of a University-Community Alliance to Address Lead Hazards: Three Keys to Success

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Abstract

Exposure to lead can be devastating for children, and federal regulations established in 2001 are forcing local governments to mitigate this risk. This essay discusses the creation of the Lead Alliance, a university-community coalition created to address lead hazards facing children from low-income households in South Bend, Indiana. Among the accomplishments of the Lead Alliance are a chemistry course at the University of Notre Dame and a Community Outreach Partnership Centers grant. After reviewing a number of examples of university-community collaborations to mitigate lead poisoning, the article focuses on how each partner in the Lead Alliance came to the table and describes the Alliance's activities. It identifies three key factors in the success of this coalition: the members' complementary community connections and knowledge, the efforts of a facilitator at the start of the process, and the personal commitment of each member.

The Lead Alliance is one of a growing number of university-community partnerships developed in the wake of new federal guidelines for addressing lead hazards. After almost ten years of political wrangling, regulations based on the 1992 Residential Lead-Based Paint Reduction Act *(Goldman 1997)*, including guidelines on renovation practices and monitoring, finally went into effect in 2001 *(New lead regulations 2001)*. Though problems associated with lead have been identified for decades *(Markowitz 2000)*, these rules impose new responsibilities on government entities to mitigate lead hazards, giving heightened visibility to lead-related health concerns.

Why Lead?

Exposure to lead is detrimental to children's health, especially for those under the age of six whose neurological functioning is most quickly forming. Eating the sweet-tasting contaminated paint chips often found by window sills, ingesting soil around a dwelling, or breathing dust-filled air where older homes are in

disrepair or being renovated can result in impaired intelligence, loss of hearing, slowed growth, small stature, dizziness, headaches, clumsiness, developmental delays, and, at high exposure levels, seizures and even coma *(Hwang, Glass, and Molter 1999; Meyer et al. 2001; Sanborn et al. 2002)*. The Centers for Disease Control estimate that more than half a million children in the United States have enough lead in their blood to cause serious and irreversible damage. Adults are less susceptible, though exposure is associated with sterility, hypertension, and miscarriage, among other symptoms. Pregnant women can pass lead to unborn children *(Jacobs and Casey 2003)*.

Though lead-based paint has not been used on houses since it was banned by the Consumer Product Safety Commission in 1978, houses built before that date can be time bombs for residents. Renovation that involves dry sanding, for example, can break loose lead-filled paint chips and scatter poisonous dust into the air. A Housing and Urban Development (HUD) survey conducted between 1998 and 2000 showed that about 40 percent of the nation's 96 million homes are contaminated by lead *(Jacobs and Casey 2003)*. Greatest risk is found in houses built before 1940. The seriousness of health concerns raised by the presence of lead, combined with the enactment of new federal regulations, makes this a particularly timely moment for universities to join with their communities to address the challenges.

University Involvement in Addressing Lead Hazards

Colleges and universities are involved in addressing lead-related problems in a variety of ways. Several are partners with CLEARCorps, the Community Lead Education and Reduction Corps, a national network of AmeriCorps programs working to reduce childhood lead poisoning in urban neighborhoods across the country. Law schools have taken the initiative in this area as well. The Washington University School of Law in St. Louis has an Interdisciplinary Environmental Clinic that trains and mentors law, engineering, and environmental studies students to offer pro bono legal and technical help on environmental issues, including lead poisoning *(Nicholson 2003)*. The University of Maryland likewise has a clinic as part of its environmental law program. Through Loyola University's Child Law Center, students work with Illinois's Safe Housing Task Force, educating lawmakers about the dangers of lead and drafting legislation.

Many efforts provide opportunities for undergraduates to volunteer. PEACH, the Partnership Effort for the Advancement

of Children's Health, is one. A collaboration of the North Carolina Central University Biology and Health Education departments and several Durham city and county offices and coalitions, PEACH's main goal is to educate the community about the harmful effects of lead. Both high school and college students can volunteer to work with PEACH *(Biesecker 2004; Franklin et al. 2004)*.

The Environmental Quality Institute of the University of North Carolina (UNCA) at Asheville researches the public's exposure to lead. Certified to analyze the lead in drinking water in three states, it has established an information network that monitors over 180 rivers, lakes, and streams in North Carolina and Tennessee. Undergraduates and community volunteers are heavily involved in the work of the center. In addition to volunteer opportunities, the Environmental Quality Institute provides three to five UNCA students with merit-based research assistantships.

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A number of other university programs likewise involve undergraduates in community-based learning opportunities, of which research, highlighted in the previous example, is one. Students in a chemistry course at the University of Utah can register for a special lab section through which they go door-to-door in teams of two to speak with residents and collect samples of potential sources of lead for lab analyses. The University of Omaha in Nebraska offers a similar experience to medical sociology students *(Kesner and Eyring 1999)*.

Students also educate in their communities on the issues. The University of Dayton (UD) sponsors a Lead Poisoning Prevention Program that began as a class project for undergraduate honors students in 1999. Through it, UD students teach children from early childhood through sixth grade the dangers of lead and how to avoid it around their houses. Junior and senior chemistry students at Loyola University in Chicago teach fifth and sixth graders how to take samples from their own homes, gather control samples, test samples, and present findings. Through an environmental science course, students at the University of Pennsylvania collaborate with local high school and middle school teachers to educate children about avenues of exposure.

Some of these undergraduate community-based learning courses spring from coalitions between campus entities and community organizations. The Loyola University chemistry course was an aspect of the university's collaboration with a network of thirty community groups in Chicago aiming to help small community organizations strengthen their work with youth and children. At the University of Pennsylvania, faculty members and students develop multiyear projects that integrate teaching, service, and research to address significant community challenges, among them the reduction of exposure to lead paint. This is done through a collaboration of the University Center for Community Partnerships; a community-based organization called West Philadelphia Partnership; and the School District of Philadelphia.

South Bend–Notre Dame Lead Alliance

The Lead Alliance is likewise a campus-community coalition from which community-based learning opportunities have developed, in this case for Notre Dame undergraduates, in the form of a one-credit chemistry course. Collaborators include representatives from South Bend's Memorial Hospital; St. Joseph County's "Get the Lead Out" Task Force; Greentree Environmental, Inc.; the City of South Bend; Notre Dame's Center for Social Concerns; Notre Dame's Department of Chemistry and Biochemistry; and the Robinson Community Learning Center (RCLC).

The Alliance has its roots in efforts begun in 1994. At that time, a group of health professionals, including the manager of Early Childhood Services at Memorial Hospital, decided to join together to ensure that local children would be screened for lead poisoning. By 1999, it became clear that much more was needed, and the Early Childhood Services manager took the initiative in creating a county task force to take the work further. By 2000, Memorial Hospital had committed money to hire a coordinator of what was to be the "Get the Lead Out" Task Force. Memorial is a not-for-profit hospital and one that tithes to its community. Funds to pay for the coordinator position, after two years of support from Maternal Child Care block grant funds, came from tithing monies.

The 2001 regulations brought new responsibilities for the city: for example, ensuring that contractors were educated in renovation procedures. The "Get the Lead Out" Task Force took responsibility for this education, with a community development specialist in the city's Community and Economic Development

Office acting as the liaison with city government. After the city found funding, Greentree Environmental, Inc., a private environmental assessment firm, was hired to do the training for contractors.

Greentree's owner, one of the first state-approved instructors in HUD lead-safe work practice, assisted the City of South Bend in obtaining grant money to train contractors for housing renovation, in keeping with the 2001 regulations. His commitment to the eradication of lead hazards led him to join the Lead Alliance; at no charge, his assessment firm has taught Notre Dame students safe practices and assisted them with the collection and analysis of samples taken from neighborhood homes.

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Notre Dame's Center for Social Concerns is the university's main locus for community-based learning. Approximately nine hundred students a semester participate in Center-run one- and three-credit seminars, which take them to cities across the United States, to twelve developing countries, and to many local sites each year. The Center for Social Concerns maintains a relationship with over fifty local not-for-profit organizations. It works closely with university faculty, assisting them in developing courses through which their students venture into the South Bend area, helping to facilitate opportunities for their own civic participation, and supporting their community-based research scholarship through various forms of funding. Through its Faculty Fellows Program, three faculty members are selected each year to work with the Center in an especially intensive manner.

In the fall of 2001, the Center began to work with its newest faculty fellow, a chemistry professor. This professor had long wanted to find ways to use his skills as a chemist to serve his local community and to create opportunities for his students to do the same. The Center initially became involved in the lead issue to help this professor develop a course through which students could test for lead in local homes.

The Center's associate director for academic affairs and research (ADAAR) sought local organizations involved in lead hazard mitigation. She discovered Memorial Hospital's "Get the Lead Out" Task Force and arranged a meeting with its coordinator. The Center's next goal was to initiate and nurture a coalition of actors to address lead hazards. The Center hired a local individual on a part-time basis to facilitate the emerging coalition, which was eventually named the Lead Alliance. When the facilitator left the group in the fall of 2002, it was self-sustaining.

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Located just south of Notre Dame's campus in the northeast area of South Bend, the Robinson Community Learning Center (RCLC) offers a range of educational, cultural, health, and faith-based activities designed to enhance the quality of life in its neighborhood. A four-year-old collaboration between the Northeast Neighborhood and the University of Notre Dame, the RCLC conducts computer classes, health fairs, community art festivals, fall leaf cleanup, tutoring, and programs in nonviolence for young people. Of RCLC youth participants, 70 percent are of low income and 85 percent African American.

The emerging Lead Alliance, initially made up of the individuals listed above along with two senior students, a second chemistry professor, and eventually an engineering professor, invited the RCLC director to join in. They believed that the RCLC's proximity to Notre Dame placed it in an excellent location as a focus for the Alliance's efforts. The area has been designated an official redevelopment area by the city. Stakeholders, including both Notre Dame and Memorial Hospital, are working together to determine new directions for the neighborhood. This is obviously a politicized process, one in which the neighborhood organization and the RCLC are attempting to ensure a voice for local residents in the face of significant institutional presence that has historically been in conflict with their interests.

Members of the Alliance collaborated to host a community event at the RCLC to educate local families about the hazards of lead, thus serving the RCLC population and surrounding area. Later, with the RCLC director on board, the Alliance worked to obtain HUD funding through the Office of University Partnerships.

The Work of the Alliance: Meeting the Partners' Agendas

Chemistry in Service of the Community, a one-credit chemistry course through which students test for lead in and around local homes, was offered for the first time in the fall of 2002 after a pilot effort the previous spring. Though what are known today as service-learning courses were first offered at Notre Dame in the early 1970s, Chemistry in Service of the Community is the first such course at Notre Dame through which students can receive science credit; this was no small accomplishment.

Despite the current shift in thinking in many science and math classrooms that has faculty members focusing more on active learning through cooperative exercises, case studies, and problem-based learning, most science and math professors are still hesitant to incorporate service into their curriculums *(Kleinman 1998; Wiegand and Strait 2000)*. The most commonly cited downside for science faculty—and this is often the challenge articulated by faculty in other disciplines as well—is the time needed to integrate service into a class. Perhaps equally significant, however, is science faculty members' lack of experience designing or evaluating journals or reflection activities, critical components of service- or community-based learning *(Kleinman 1998; Fitch, Reppmann, and Schmidt 1999)*. Moreover, the civic and ethical nature of the reflection activities does not obviously relate to course objectives that are typically about the acquisition of disciplinary knowledge and skills *(Wiegand 1998)*.

The Center's chemistry fellow spent the better part of a semester explaining the educational value of his Chemistry in Service of the Community course to colleagues and shepherding it through the various committees required for approval. Finally, his efforts met with success, and the course was offered in the fall of 2002 to nine students. It was offered for the third time in fall of 2004.

Each member of the Lead Alliance participated in teaching Chemistry in Service of the Community, along with the chemistry professor. For example, the owner of Greentree Environmental taught students procedures for testing for lead and made sure that student analyses of samples were accurate. A second Notre Dame

chemistry professor agreed to incorporate lead analysis into his three-credit analytical chemistry course. Most of the students in Chemistry in Service of the Community enrolled in this course, thus initiating the community-based class as a companion course for the enhanced analytical chemistry offering.

Over time, the course has evolved. For example, the fall 2003 class members wanted to continue efforts after the end of the semester and decided to test the soil around playground equipment in area parks. They received local media attention for their effort. An assistant professor in engineering joined the fall 2004 class to help students test for mold, also a serious health hazard, in selected houses.

"Over time, the [Chemistry in Service of the Community] course has evolved. For example, the fall 2003 class members wanted to continue efforts after the end of the semester and decided to test the soil around playground equipment in area parks."

Each semester, the Alliance holds an educational event at the RCLC staffed in part by the students in Chemistry in Service of the Community. The event consists of a dinner, entertainment for children, a speaker, and the opportunity for attendees to be tested for lead. Attendees are also able to sign up for a house assessment that will later be conducted by the students. The interests of all the partners in the coalition are met through this event. For example, in addition to the students' involvement, the event reaches members of the Northeast Neighborhood, thereby enhancing the work of the RCLC, and also gives Memorial Hospital the opportunity to test children.

The agenda of the Center for Social Concerns was addressed through the creation of the new community-based learning course and by facilitating the formation of a strong and active coalition. The Center's commitment to nurture this group was likewise furthered as its ADAAR found much of the funding needed for members of the Lead Alliance, including two students, to travel to San Diego to present on their project at the Campus Community Partnerships for Health Annual Conference in 2003. The Center's ADAAR later presented on the Alliance at a Loka Institute community-based research conference in Minnesota.

The owner of Greentree and the Chemistry in Service of the Community professor coauthored an article for *Home Energy*.

Perhaps the greatest challenge met by the Alliance was working with the RCLC to apply for a HUD Community Outreach Partnership Centers (COPC) grant, which it obtained. The work of the Lead Alliance made up a third of the proposal. This funding focuses much of the agenda of the Alliance for the coming years.

Three Keys to Success

The Lead Alliance has sustained itself over several years. What accounts for its perseverance? The coalition has identified three factors as primary: the complementary nature of the community connections and expertise of its members, the efforts of an outside facilitator in the early period of formation, and the personal commitment of each member.

Community-Campus Partnerships for Health has identified a list of principles for good community-campus partnerships that provide guidance to those attempting to develop such collaborations. The Lead Alliance embodies most of them, including, for example, sharing credit for accomplishments. Much of what is described in related literature characterizing the processes of a campus-community partnership is also evident in the work of the Lead Alliance. For example, Heady *(2000)* refers to a stage in partnership development that "initiates a new round of exploration and discovery as the partnership raises the bar." Such new rounds unfolded a number of times, most dramatically when Alliance members joined together to develop a proposal for HUD funding through its Office of University Partnerships. As the group examines its practices in light of literature on campus-community partnerships (e.g., *Campus Compact 2000*; *Corrigan 1997*; *Maccoby 1997*), however, three interrelated factors emerge as particularly noteworthy. First, each member brought a specific set of community and institutional connections or an area of expertise that no one else possessed, and made these available to the group as a whole. For example, the community connections of the RCLC did much to pave the way for effective work in the Northeast Neighborhood. Without this entity's involvement, a slower and less congenial effort would have ensued.

The Northeast Neighborhood, situated just south of the university campus, is home to many students who have chosen to live off campus. As is typical in university settings, community residents are not always enamored of the late-night activity or

yard care of student neighbors. Particularly at a time when the university is asserting its interests in the current Northeast Neighborhood redevelopment process, those who have lived in the predominantly low-income area might view Notre Dame students with some anxiety. The fact that students were working with the RCLC, however, created a positive first impression. Residents are known to respect the work of the RCLC and because of this are likely to welcome students using its name. The students could have identified themselves as working with the local hospital or environmental assessment firm. These institutions, however, have no immediacy for those living in the area. By fostering access to residents, the RCLC improved the ease and quality of the work. Furthermore, the RCLC brings a specific knowledge base to the enterprise. The RCLC director's knowledge of the neighborhood can be passed along to the students; the RCLC staff can help students address residents with awareness of potential cultural differences and prevalent attitudes that may not be obvious to them.

Memorial Hospital or a city office could not have provided the kind of entry into the neighborhood that the RCLC provided; the RCLC, however, could not address residents' technical questions about the impact of lead poisoning or readily access the resources available for lead-safe cleaning. For this kind of information, students can turn to the coalition members from Memorial Hospital. When students take samples to the university lab for testing, a professional firm—Greentree Environmental—is likewise testing; residents will get only information that is professionally verified. The city representative is available to respond to any concerns about regulations. Each member of the Alliance brings a different type of knowledge and experience, so that students have readily available sources of information rather than being forced to put residents "on hold" while they seek answers.

The complementary nature of coalition members' contributions does not automatically result in the smooth collaboration experienced, however. Another factor is at play here: the efforts to nurture the group undertaken by a facilitator hired specifically for this role. According to coalition members, this is probably the most important factor in the group's success.

"[P]artners may assume they understand each other's motivations and rush on toward project and proposal planning," writes Holland *(2003)* for the April 2003 Community-Campus Partnerships for Health Conference. However, "Absent an

upfront and continuing investment of time and energy into a candid and comprehensive reflection on the . . . expectations of each partner," she continues, "all other features associated with effective partnerships will be difficult to implement and sustain." The Lead Alliance facilitator was hired by the Center for Social Concerns to identify members' expectations and then to develop and carry out a process that would ensure their attainment.

Before members began regular meetings, the facilitator met with individual partners to learn about personal motivations as well as broader agendas. She sought input into the creation of meeting agendas, so each person's aims would be addressed at every session. In the process she attended to past unsatisfactory encounters that community members had experienced with the university, so that unresolved resentment would not be an obstacle to collaboration. Once the parties were assembled, the facilitator continued these relationship-building efforts. She was sensitive to and actively helped to negotiate differences in language among the parties—for-profit, academic, medical, government—in order to help each partner articulate and understand expectations on all parts. She also led the group through conversations to identify and move forward with activities that would result in relatively quick successes, in order to build momentum and deepen trust among partners.

"Before members began regular meetings, the facilitator met with individual partners to learn about personal motivations as well as broader agendas."

Holland notes that "full realization of reciprocity and mutual benefit is the most problematic aspect of partnerships to achieve" *(2003)*. In this coalition, reciprocity and mutual benefit have indeed characterized the work. Evidence of this is found in almost all of the outcomes that have emerged from this coalition. In the chemistry course, the conference presentation, and the HUD proposal, each member's goals were addressed; each member helped every other achieve his or her aims. And this occurred, we believe, in large part because of the attention given to developing trust and communication among the partners in the early months.

The third and final factor contributing to the success of the Alliance is the degree of personal commitment of its members. Although the Lead Alliance is made up of representatives from

other entities in the community, and there is reporting back to these organizations, its members have no formal mandate from them. The individuals who participate care deeply that children in the area be free from the lead health hazard and have found that the best way to undertake vital work on this issue has been through this informal organization. Without this degree of personal commitment, the Alliance might not have endured. Implementation of good strategies for partnership development cannot ensure that this quality will be present in any given collaboration. Nonetheless, it is plausible that the complementary quality of group membership and the early attention to the relational foundation of the group enhanced each participant's personal commitment.

The main goal of the Lead Alliance is the identification and eradication of lead hazards facing the area's children. Through its slow evolution, some meaningful strides have been made. Dozens of children have been screened, families have been shown safe cleaning practices, and more. It is easy for members to become discouraged, however, by the length of time required to achieve the group's objective. Yet without the kinds of actions this community organization, and others like it, are taking, progress toward the elimination of lead hazards would not occur. Fortunately, this coalition has great energy for continuing to face the challenge.

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