

Personal statement: Vicky J. Meretsky

Conservation biology is a field of inquiry conceived in response to a perceived emergency — a rapid and global loss of biodiversity. The science of conservation biology thus has an explicit scientific mission to understand, and a service mission to offset, losses of biodiversity ranging from genetic information to ecosystems. Much of the research in the field is conceived with an applied component: results are intended to address ongoing conservation problems. Thus, research and service are typically inextricably linked, and research is often undertaken by teams that include agency managers as well as academic and agency scientists. To give my work the maximum possible impact and application, I have collaborated with a wide range of professionals involved in the issues I study. Multi-authored papers are the expected result of such multidisciplinary results and constitute the majority of contributed papers in the leading journals in the field.

The urgency for application of science and the increasingly strong socio-economic component of conservation biology find a very comfortable home at the School of Public and Environmental Affairs. Research and service are both highly valued here, and opportunities for collaboration are legion. The intellectual strength and stimulation afforded by collaboration are not without costs, however, and SPEA has unusual career pressures compared with more traditional academic programs. These include relatively high teaching loads (the base load for tenured faculty is 2 courses per semester) and a graduate student body composed primarily of profession-oriented students, which increases graduate class size (mine are typically 30-45 students). Heavy teaching loads and large classes do not detract from the quality of my work, but they do affect the pace of my research and publishing, as does the collaborative nature of much of my work.

SPEA's mission emphasizes solving problems in the real world, and I advanced to associate professor on the basis of excellent research in pursuit of solutions and excellent service to implement solutions, but noted that my work to develop scholarship in teaching might lead to a later claim to excellence in teaching. In my time as associate professor, I have continued to value research to find solutions, but I have focused increasingly on power of public service to implement solutions and power of excellent teaching to train a new cadre of problem solvers and implementers. As a result of the strength of my work in these areas, ***I claim promotion to full professor based on excellence in teaching and service.***

Excellence in Teaching

SPEA's standards for promotion on the basis of excellence in teaching require a case that establishes sustained strong performance across instruction, contribution to pedagogy, and mentoring and advising. Here, I indicate my case for excellence across these areas.

Teaching goals. Faculty declaring excellence in teaching should have clear goals for teaching. Soon after I came to SPEA, an article titled *Training idiot savants: The lack of human dimensions in conservation biology* (Jacobson and McDuff 1998) pointed out the folly of training conservation biologists only in biology and ignoring the real world in which solutions must be implemented: stakeholder conflicts, economic issues, intricacies of related laws and policies. I had lived this reality with northern spotted owls, California condors, and the Grand Canyon. As a result, my primary goal as an instructor at SPEA has always been to train students so they can to apply their learning in the world beyond academia.

In nonmajors' classes, I give students the tools to understand their impacts on the environment and ways to reduce impacts, so they can be informed voters and advocates for environmental responsibility in whatever career they choose. For majors in environmental science and policy, my goal is to produce students who are not only knowledgeable in their fields but also savvy – aware of conflicts, of the realities of political and social pressures, and of shortcomings of existing knowledge as well as strengths. My strategies for creating knowledgeable and savvy students vary from class to class, but always give students considerable time on task, discussing concepts or practicing skills. Lecturing is useful, but for students to learn deeply and synthesize broadly, the immersion offered by active learning is often better, with the encouragement of safe-fail, low-stakes introductory work that leads into more challenging assignments as their skills—whether in statistical analysis or in synthesis of complex ideas—develop.

Excellent teaching. I have received eleven awards for excellence in teaching during my time at Indiana University: three SPEA awards for outstanding teaching, three Indiana University Teaching Excellence Recognition Awards, and five Indiana University Trustees Teaching Awards. Eight of these included financial awards; seven were awarded while I was Associate. In 2011, I was nominated and accepted (acceptance is not automatic) to IU's Faculty Colloquium on Excellence in Teaching.

In addition to teaching awards, my teaching evaluations also demonstrate excellence in teaching. Figure 1 shows my consistently high scores for course content and for teaching, including courses such as my conservation biology and ecology courses that mix upper-division undergraduate and graduate students, which are considered difficult to deliver effectively. Students say they have learned a lot in my course, an indication they have not rated the course highly because it is easy. An outside source of

Figure 1. Teaching evaluation results for 2002 - 2012, on a scale from 1-4. Ranges for statistics course show changes from first semester teaching the course to the present.

Format	lec/act	lec	lec/disc	lec	lec-lec/act	seminar	lec-disc
Topic	env sci	ecol	cons bio	ecol	stat	topics	cons bio
Course #	E262	E332	E457	E532	E538/V506	E555	E557
Well prepared	3.7	3.7	3.9	3.9	3.6	3.7	3.8
Explained clearly	3.4	3.5	3.7	3.5	2.6 - 3.4	3.5	3.5
Enthusiastic	3.8	3.8	3.9	3.7	3.5	3.8	3.8
Learned a lot	3.5	3.4	3.7	3.5	3.4	3.5	3.4
Outstanding instruction	3.5	3.4	3.6	3.4	2.9-3.6	3.5	3.4

teaching evaluations on the Rate My Professor website shows the same pattern, in a small way. Four students provided ratings between 2005 and 2009. On a scale of 1-5, the averages were, for overall quality, 4.9, for helpfulness, 5.0, for clarity 4.8, but for easiness, 2.5.

Excellence in contributions to pedagogy. I have developed course material for ten courses at Indiana University, including core and elective undergraduate and graduate classes. Six were entirely new courses, and of these, five were split undergrad/grad classes. I maintain coursepacks, and PowerPoints where needed. For Conservation Biology, I compose questions to guide reading discussions. In statistics, I am transitioning from primarily lecture-based class to an active-learning class and am developing in-class exercises to support that change, with beneficial results (Fig. 1). Here, I discuss specific work in pedagogy: innovative courses, scholarship of teaching and learning, service learning, and curriculum review.

Innovative courses: grant-funded study-abroad. In 2009, the Russian and Eastern European Institute, with which I affiliated, contacted me to ask if I would consider leading a proposal to US-Russian program of the Fund for the Improvement of Post-Secondary Education (FIPSE) in the Department of Education, dealing with research and teaching in environmental science. I wrote the proposal together with Olena Chernishenko of the IU Slavics program, who developed a Russian-language module for the program and managed the early logistics. Our proposal was ranked first among 24 proposals received, and we were awarded \$400,000 for a 3-year program in partnership with Tyumen State University in southwestern Siberia. I made a presentation on this program to the joint US-Russia program participants in Moscow in 2010.

In its first two iterations in 2010 and 2011, we combined a 1-credit classroom course with distance-learning participation by faculty and students from Tyumen and a 2-credit study-abroad program in Siberia. The 1-credit pre-travel seminar gave students background on the area and issues they would encounter, as well as introducing them to faculty and students they would meet in Siberia. We took a break in 2012, while IU was reorganizing its summer schedule; we will take our final trip this summer (2013), as part of a one-year no-cost extension. I have been asked to lead the SPEA Scholars in Global Citizenship program, which funds study abroad, in 2013, as well, and we have combine the two programs to create a 3-week, 3-credit course in Siberia that will include a visit to Lake Baikal, a World Heritage site and the deepest and oldest lake in the world. The students who have travelled and will travel to Siberia have had all their travel costs covered, enabling students who could not otherwise contemplate study abroad to see an exotic and environmentally very relevant part of the world where, seemingly pristine areas are interrupted by fouled by oil spills, and protected areas mingle with areas where wildlife has been severely reduced by subsistence hunting.

Innovative course: distance-learning/distance-teaching. In Fall 2010, I taught a course which was offered simultaneously to SPEA students and to the personnel of the Upper Midwest Region of the US Fish and Wildlife Service (FWS): *Climate change impacts on fish and wildlife resources*. I developed the course together with FWS biologist Teresa Woods as a means for the Region to discharge a requirement that all regions provide training in climate-change science to as many personnel as possible. To meet that goal, while minimizing contributions to climate change, Ms. Woods asked if I could create a distance learning/distance teaching course in which FWS personnel “attended” from their offices, IU students attended in a distance-learning classroom, and experts across a range of climate-science topics lectured from their homes and offices. With help from technology support staff, I learned the software to link speakers, practitioners and students, and developed training for our speakers. The distance-teaching format was greeted very positively by expert speakers, who, when surveyed, appreciated the opportunity to address personnel in a national agency along with university students. Students had an unparalleled opportunity to learn about the workings and concerns of the FWS directly from a wide range of personnel with whom they “shared” the classroom, and Service personnel appreciated both the access to expert speakers and the perspectives of students with current and broad training.

Scholarship of teaching and learning. As the distance-learning/distance-teaching course continued, Ms. Woods and I recognized the value-added aspect of having students interacting regularly with professional practitioners (FWS personnel). We surveyed students, faculty, and practitioners at the end of the course to more thoroughly investigate the nature of the added value. I analyzed the resulting data and we presented information about the innovative course format and the opportunities it presents at professional and teaching conferences. I explored the related literature in blended learning, reflective teaching and learning, and experiential learning. In investigating the wider literature on training practitioners, I found *Decoding the Disciplines: Helping Students Learn Disciplinary Ways of Thinking*, by Indiana University’s David Pace and Joan Middendorf (2004). Our practitioners had been helping students to decode practice, and we explored this idea further in a manuscript accepted at the Journal of the Scholarship of Teaching and Learning. I have been invited to join the first IU Sustainability Community of Practice, which will begin with a decoding workshop in May 2013, which will help me undertake additional scholarship related to decoding and training of practitioners..

A reflective essay that I wrote, *Teaching Outdoors*, appears in the *Teaching Environmental Literacy*, an edited volume from Indiana University Press. A review of the volume in *BioScience* (Catley 2011, p 643) noted “Another, perhaps counterintuitive, perspective builds a strong argument for using working landscapes—farms, dams, mines, and industrial areas—to confront students with the effects and implications of the choices we make as a global society.” The chapter has been used as a teaching text in Bryn Mawr’s Education 268 class, *Educating for Ecological Literacy*.

The concept of teaching cases is not well developed in the sciences, but my interest in conservation policy introduced me cases and SPEA’s new relationship with the Hubert Project at the University of Minnesota provided a venue for submitting cases. In preparation for a new module in Conservation Biology, I am presently preparing teaching cases on US and EU policies related to wolf management, with two of my graduate assistants. We are submitting proposals for two curated cases in April 2013 and the first case will be submitted in May.

I have published on teaching techniques, as well as on course design. A methods note suggesting the use of online survey sites to gather anonymous feedback from students is accepted and in revision at the *Journal of Teaching and Learning with Technology*.

Service learning. My curriculum development for our graduate capstone class reflects SPEA’s strong tradition of combining teaching with research and service. Capstone classes are project-based classes in which final-year master’s students work in teams to undertake review and analysis of problems, typically for a client organization. In 2007, I was invited to join a team of 8 faculty from across the country to assess the 50 state wildlife conservation strategies. The instructors met twice, along with student representatives from all groups, at UC-Santa Barbara. Two SPEA students accompanied me on each occasion and represented their classes in the proceedings. In 2010, Professor Rob Fischman from

IU's Maurer School of Law and I teamed to produce a capstone class working with Defenders of Wildlife to produce review papers and presentations on topics of interest to this leading conservation advocacy NGO. In 2012, we led a capstone class in a review of Comprehensive Conservation Plans for the national wildlife refuges, with the Refuges Division of FWS as a client. One of the resulting papers we are producing builds from one of the student reports; the students are junior coauthors on the manuscript. I also create service-learning opportunities for students to work with The Nature Conservancy and Sycamore Land Trust, where I have service appointments.

Curriculum review. I had my first chance to participate in curricular review and development in Azerbaijan, in 2003, as part of the U.S. State Department-funded *Linkage Project to Establish A Higher-Education Program in Public Administration at Western University*. I am also on I was invited to work with the project to consider how to add an environmental-science component to a commuter program housed in a facility with no provision for laboratories. More recently, a discussion with a recent graduate about his experience with project management coursework in a peer institution cast a new light on previous conversations with alumni and employers of our students. I spoke with leaders of our graduate capstone program and of the just-started reaccreditation program for the MPA, and suggested that program management was alumni and employers had been recommending to us for several years, in less clear terms. As a result, program management became a facet of reaccreditation, and, this spring, for the first time, we put together an intensive, part-day introduction to program management and team dynamics for the graduate capstone students. In coming years, this training will become part of orientation activities for all graduate students, and in the long term, faculty will be encouraged to build on the initial training to integrate program-management skills into many of the graduate courses in all three graduate degrees (MPA, MS-Environmental Science, and Master's of Arts Administration). In the coming months, I will be summarizing potential approaches to accomplishing this integration with colleagues, as co-leader of a subcommittee of our Teaching and Learning faculty group.

Impact of work in the teaching and learning community. The impact of my work in teaching is evidenced by presentations at national meetings, scholarship and reflective essays on teaching and learning, as discussed above, by adoption by others of my pedagogical materials, and by contributions through membership in communities of practice.

Over the years, I have shared my teaching materials upon request with many instructors at SPEA and elsewhere. The review of univariate and bivariate parametric and nonparametric statistics I originally prepared for *Field Techniques in Ecology* was adopted as part of the International Forestry Resources and Institutions program founded by Nobel laureate Elinor Ostrom and taught by faculty in SPEA, Anthropology, and Geography. My teaching materials for ecology and environmental-science classes for majors and nonmajors have, among them, been shared with over a dozen instructors, some of whom have taken the materials to faculty positions elsewhere. My coursepack for *Applied Ecology* was translated into Russian and became the basis for a text produced at Tyumen State University, the sister university of the US-Russia program. In addition to this dispersal of course-specific material, my review of technical writing, and my primers for statistical packages have been shared widely within SPEA and with colleagues elsewhere. The plagiarism presentation I make annually to incoming graduate students and, in a different format, to doctoral students, has been shared throughout the university and carried elsewhere by graduating doctoral students, particularly international students.

I participate in teaching and learning communities at IU, nationally, and internationally. At IU, I am a member of the executive board of SPEA's energetic Teaching and Learning faculty group, as well as the chair of the speakers' subcommittee, and co-chair with Dr. Barry Rubin of the subcommittee investigating options for providing training in project management. I am also a member of the Faculty Colloquium on Excellence in Teaching and attend annual meetings whenever possible. Nationally, I am a member of the Professional and Organization Development Network in Higher Education and participate in online discussions related to all aspects of higher education. Internationally, I am a member of the International Society for Scholarship of Teaching and Learning and have attended two annual meetings in recent years. In addition, in 2012, I attended my first Lilly Conference on College and University Teaching, an

experience rather like mainlining teaching philosophy and techniques; I hope to present the results of my activity-learning work in statistics there in 2014.

Mentoring students. Excellent teaching is not undertaken only in the classroom, but extends to mentoring students as an advisor, coauthor, as director and member of masters' and doctoral committee, and in a variety of other ways. I first meet many SPEA students as the faculty member they contact when they are considering coming to SPEA. Email exchanges and phone conversations with these students often involved discussions of their existing training, career goals, and personal strengths. Our recruiting staff indicate I am more active in this regard than faculty generally. Certainly, many of these students go on to take my classes and often introduce themselves by referring to these earlier conversations. For many years, I have been listed as a faculty advisor for the MSES Applied Ecology concentration, and for the past several years, I have also advised in the MPA Environmental Policy and Natural Resource Management concentration and the dual-degree Environmental Management concentration. I am the only SPEA faculty member advising across such a breadth of concentrations who is not a program director. As a result, staff tell me I typically advise substantially more students than colleagues other than program directors. In addition to requests for advice on courses, I see a handful or two of students every semester who want to talk about life in general, career choices, professional issues, and other non-course-related topics, and I write 50+ recommendations/year. Thank you notes and emails (Supporting materials for Teaching) show that students appreciate by efforts. I have been director of three doctoral student committees and served on 32 others including committees in SPEA, Education, Biology, Geography, Library and Information Science, Health, Physical Education, and Recreation and Biology at the University of Louisville. I have directed master's level research for 4 students and published with two of these. I have served on 6 other master's committees at IU Biology and for Biology at Northern Arizona University. I have worked with approximately 50 SPEA graduate students at teaching and research assistants; two of these are presently producing teaching cases with me and one led a coauthored publication. I have directed undergraduate honors and BS-environmental science thesis research for 15 students and worked with an additional 4 undergraduates on non-thesis research or as a committee member.

Outside of these typical faculty roles as advisor, I also leverage other classes at SPEA and my involvement in organizations outside of SPEA to provide students with training and experience. I have twice served as the faculty client for projects undertaken by a SPEA GIS class, most recently a service project for Sycamore Land trust. I regularly receive information from nonprofit organizations about volunteer opportunities that provide training, particularly in land management and invasives-species management, that I pass along to students. Shortly after I arrived at SPEA, I worked with the Career Center to have them monitor the main listserv providing job announcements in ecology and conservation biology and these are now extracted and posted to the Center's webpage. In addition, I pass on 50+ internship and job announcements per year to the SPEA Career Center from news sources and listservs to which I have access and from past graduates whom I routinely ask to pass along such information.

Excellence in Service

I came to conservation biology in order to develop solutions for the problems of biodiversity loss and environmental degradation. I came to SPEA to because it gave me the opportunity not only undertake science that would inform solutions but also to build bridges to the policy and management spheres to ensure that solutions would be implemented. I came to SPEA, as well, to contribute to the profession that shares my goals, and to contribute to a community, at IU generally and at SPEA in particular, that seek solutions to problems in many fields and trains the next generation of problem solvers. I declare excellence in service having made substantial contributions in all these areas.

Public Service. My research-related service has had significant impact on conservation policy and management, as well as on public perceptions. I have undertaken training exercises for agencies, and provide considerable service at the state level.

Impact on conservation at the national level. My work on the need for a national conservation network epitomizes SPEA's ideal of high-impact service. I led a team of agency personnel and academics to build from a report focusing on the strengths and weaknesses of state conservation efforts to an article delineating the gaps in national-level conservation that result from the lack of consistent coordination among conservation actors, and in particular, the lack of any system to track the status of species and the ecosystems and processes on which they depend at the regional and national levels. We noted that conservation efficiency would be significantly improved if a central clearinghouse were available for information, training material, and other resources to leverage local lessons learned. At publication, I reached out over 20 key contacts in conservation agencies and NGOs inviting them to contribute to the conversation. The director of the Landscape Conservation Cooperatives (LCCs) of the US Fish and Wildlife Service (FWS), the national Association of Fish and Wildlife Agencies (AFWA), and the NGO NatureServe have discussed implications of the paper in their respective meetings. The LCCs have used it to focus their discussions as they define the national role of their nascent group. I have contributed blog postings to two of the national conservation organizations to apprise the wider conservation community of the conversation. In March 2013, a staff member of OMB contacted me to discuss our paper and the wider conversations it has prompted; the White House, Department of Interior and Department of Agriculture are interested in reworking landscape-scale conservation, particularly the cross-agency collaborations involved, and he wanted to discuss the national conservation network ideas. We talked at some length about the roles the different players have been developing in the discussions to date. The activities I have led are thus contributing noticeably to conversations within groups that are now focused on the problems we identified. Colleagues and I have organized symposia at upcoming conservation and wildlife meetings that will involve the LCC system, AFWA, NatureServe and other major players, to support the kind of coordination *among* groups we have indicated needs to develop.

I am in the process of finalizing work with Professor Robert Fischman of IU's Maurer School of Law that employed a graduate capstone course to help assess the quality of planning in the Comprehensive Conservation Plans (CCPs) that govern management of over 500 national wildlife refuges. The FWS was the client for the students' projects and our reports; the FWS provided in-kind support in the form of data, discussions, and reviews to ensure that our products spoke most clearly to their needs. The Service is developing programmatic planning for revising the CCPs and our reports are an important part of the basis for that process. Ours is the only review of CCPs since the first handful of them were written and the only one ever to evaluate a sufficient number of plans to address regional and national trends; the 185 plans we reviewed cover 384 of 555 national wildlife refuges. We compared the planning in the CCPs to standards for conservation planning in the peer-reviewed literature as well as to requirements of National Wildlife Refuge System Improvement Act (NWRISA). In our general report, we highlighted Service strengths in clearly describing the resources and context of the refuges, and in increasing their plans to use monitoring to track at-risk species, ecosystems, and ecosystems processes. We provided concrete, straightforward methods of improving adaptive management that will reduce unproductive monitoring and improve consistency of methods across refuges to better inform managers and planners at all spatial scales.

The second FWS report focuses on planning in the CCPs related to climate change. In an agency that was prevented from discussing climate change until 2008, this is an area of particular concern. We suggested tools best suited to the uncertainty of climate-change predictions, particular scenario planning for "safe fail" or "no regrets" courses of action and refuge-level priority setting to help hold managers to most necessary courses of actions in the face of changing funding and organizational priorities. We pointed out the role that FWS could play in solving climate-change problems by contributing the lessons learned across several hundred refuges to those regional and national forums that are beginning to try to capture climate-change-related conservation lessons. Our recommendations also went beyond the refuges to encourage the FWS to provide more concrete planning support to refuge managers that translates conservation science into practical on-the-ground advice.

This latest national-level planning review for FWS had its roots in 2005, when Professor Fischman and I hosted a conference to discuss implications National Wildlife Refuge System Improvement Act for

the management of national wildlife refuges. The conference, which included high-ranking Service personnel, leveraged the expertise of scientists, policy analysts, and legal scholars on behalf of the FWS. The resulting review paper was distributed by the FWS to all national wildlife refuges to advance planning and management commensurate with the law and related policies.

Service related to endangered species. My work for the Service's **Indiana bat recovery efforts** was the result of a request, in 2005, to contribute a FWS-led risk assessment for the species. I was asked to help species experts understand the implications of uncertainty in demographic parameters and in population trends for the species. During the resulting discussion, I pinpointed a key information gap for the species, resulting from methodological inconsistencies that severely hampered efforts to develop sound estimates of population size, preventing attempts to downlist the species from endangered to threatened. I was asked to lead an exercise to remedy the situation. I designed a study and executed it together with the lead species biologists. My report (and the following peer-reviewed publication) provided the basis for modifications to the national protocols by which species surveys were conducted. These modifications and additional work I contributed became part of the draft recovery plan revisions for Indiana bat, the foundational document directing these efforts. As a result of my work, when a disastrous disease outbreak began, a year later, baseline population estimates were considerably sounder than they would otherwise have been, and documentation of the resulting population collapse used a consistent methodology that allowed biologists to focus on the disease without wasting time worrying about the numbers. I and others hope these methods may eventually be used to document the species recovery with equal clarity.

My work with **California condors**, stretching from before my doctoral work to my earlier years at SPEA culminated in a publication, with colleagues, that woke the condor world and the public to the previously untallied count of condor deaths and near deaths resulting from lead poisoning. Rather than let the message sit, I and my coauthors did news interviews and made an invited presentation to the California condor recovery team in order to raise the visibility of the issues and provide a forum for discussion in which all members of the condor recovery effort could participate. In response to the issues we raised, reports on lead-related morbidity and mortality were more regularly compiled, and as our message was repeatedly confirmed, research was undertaken to solidify the link with hunting ammunition. In 2007, California banned the use of lead ammunition for large game in areas frequented by condors, a result that traces directly back efforts I and my colleagues led to quantify and publicize the extent of the lead problem for condors.

As a result of my work with condors, and my doctoral work with vultures in Israel, I was invited in 2011 to participate in a workshop on the future of vultures in the Middle East, convened by the Israeli federal agency for conservation and the leading conservation NGO. I presented information on California condor conservation that changed opinions among the Israeli wildlife authorities regarding methods of monitoring for lead poisoning and the potential for long-term damage to sustainability of their populations.

As a team member and later team leader for field research on **Kanab ambersnail** in Grand Canyon, I authored and coauthored several years' worth of reports on population trends of the species, documenting its response to the major ecosystem experiment of planned floods in Grand Canyon on the snails. As an endangered species negatively affected by planned floods designed to improve ecosystem conditions, my reports and the information I provided as a member of the Kanab ambersnail working group were important in allowing later planned floods to occur.

Training activities. In 2008, the Upper Midwest Region of the FWS asked me to lead an extended training program for their personnel throughout the region on cutting-edge findings in climate-change research. The resulting semester-long course, described in detail in my Teaching section; created for FWS employees, additional agencies and organizations asked to join as well, as word of the opportunity spread. This training provided an entire FWS region (8 states) with cutting-edge information and tools for what is likely to be the most important development in conservation for at least decades.

State service. I led and co-led the creation of a **GIS tool for conservation planning**, through the Indiana Biodiversity Initiative (IBI), a state-wide collaborative undertaking funded through the Central Indiana Community Foundation and the Indiana Chapter of the Nature Conservancy. I led a paid contract to use the GIS tool for assessing conservation priorities around the Lake Michigan coast. IBI products and training were provided to county and municipal planners and conservation organizations free of charge, and the effort received the Indiana Geographic Information Council's 2005 **Award for Excellence in Education**. I serve on the advisory committee to the Department of Natural Resources for reptiles and amphibians. I also serve as board member and advisory trustee, respectively, for Sycamore Land Trust and the Indiana Chapter of the Nature Conservancy. My service for these NGOs is largely based on my science has included training staff in conservation science, authoring articles regarding conservation, and providing many students (well over 100) with service-learning opportunities.

Service to the University and to SPEA. I maintain a heavy university service load as a result of my international experience and my research interests, which bridge the natural and social sciences, and as a result of my commitment to service to the IU community. I hold affiliate faculty positions with six other units on campus. Facilitating information exchange and collaboration are underlying goals in most of my service, and I maintain connections across campus in part to achieve those ends. I am the SPEA representative to the Russian and East European Institute's executive committee and prior to my sabbatical leave, SPEA's representative to the advisory board of the Inner Asian and Uralic National Resources Center. I am also a member of the executive committee for IU's Research and Teaching Preserve. Through my affiliations outside SPEA and within, I provide service to SPEA by improving SPEA's visibility and connectedness across the campus and by linking faculty across campus whose interests are complementary. I have benefited immensely from collaborative undertakings and actively work to facilitate collaboration among others. For example, I used Title VI funds from the Department of Education to the Inner Asian and Uralic National Resources Center to leverage information I had gathered while in Central Asia to hire doctoral students from the School of Education's Science Education program to develop a K-12 teaching module on environmental issues of that region, resulting in a publication for them and an attractive product for IAUNRC.

I am committed to contributing to the Indiana University community and have taken active roles on elected committees at the university level and in SPEA in pursuit of that service. I presently serve as an elected representative to the Graduate Faculty Council and, before my sabbatical, on its Academic Policy Committee, where I led the drafting for the policy on portfolio dissertations and the accompanying guidance for the Bulletin. I am a member of the Indiana University's chapter of the American Association of University Professors and serve on the committee that provides support for university faculty in personnel mediation and disputes. I have served as an elected representative to the Budgetary Affairs Committee and Policy Committee; in the latter role, I led the redrafting of the guidelines for all aspects of lecturer and clinical appointments. I presently serve on the undergraduate policy committee and MSES admissions committee. In the Teaching and Learning faculty group, I serve on the executive committee and lead and co-lead two subcommittees, service I discuss in my Teaching section as it involves leadership related to teaching.

Service to the Profession. My service promoting the visibility of conservation issues and solutions to the public is in part service to the profession. In the same vein, whereas many symposia are simply coordinated series of presentations, recent symposia I have led or co-led (or will lead in the near future) included discussion time to allow presenters and audience members to explore implications of the presentations more widely. Often, such sessions end in many additional conversations among people who would not otherwise have known they shared interests.

The \$400,000 Department of Education grant I received for the US-Russia program includes funds for research exchange – another example of service in support of collaboration. In 2011, I supported SPEA's Dr. Flynn Picardal, to allow him to travel to Siberia to meet a colleague there who shared his interest in bioremediation. Dr. Soromotin has since travelled here to meet with Dr. Picardal. Dr. Diane

Henshel is in the process of planning a visit to explore research possibilities with other faculty at our partner institution – Tyumen State University – in summer 2013.

Service in the form of edited works and editing for journals are way I facilitate information exchange. The volume I co-edited for University of Arizona Press, *Aridland Springs in North America*, was selected for inclusion in Choice Magazine's Outstanding Academic Titles list for 2009. Choice is published by the Association of College & Research Libraries, a division of the American Library Association. I regularly review articles for journals in conservation science and policy as well as for journals of teaching and learning; I have several times received letters from editors specifically thanking me for thoroughness in editing of manuscripts with particular promise but requiring substantial revision.

My contributions to professional development through involvement in SPEA's NASPAA recertification of the MPA program and through SPEA's Teaching and Learning group are described in my Teaching section and my contribution to academic standards through work on Graduate School's portfolio dissertation guidelines is described under University service.

Research

Although I have not declared excellence in research, the strength of my research record is the foundation which my case for excellent service is built. I have written 27 articles, 13 as senior author, and responded to one letter of comment. I have contributed to 3 book chapters related to conservation biology, 1 as senior author; I have been technical editor of one set of proceedings and I have co-edited one very positively-reviewed research volume, *Aridland Springs in North America*. Twenty articles and one reply to comments appear in ISI-rated journals including BioScience (average impact factor: 5.02), Conservation Biology (ave IF 3.4) and Journal of Wildlife Management (the primary journal in that area, average IF 1.5). These articles have been cited 262 times in 253 articles, excluding self-citations, producing an h-index of 9. My research has been supported by a variety of large and small grants from federal agencies and NGOs. SPEA defines quality of research through impact "on the field," to which these measures attest. Impacts through "changes in policies" and "implementation of new programs or measures" are considered evidence of service quality and are presented in my Service section. As my field comprises both academic and non-academic researchers, arguably more of the latter, much of the evidence of impact on the field is thus in my Service section, with service to agencies and NGOs.

My research presentation in Israel in 2011 brought important news of problems with the California condor recovery, I was able to put these in perspective against Israel's own vulture populations owing to my dissertation and related work with those species; I have made 10 other invited presentations. I presented or been co-presenter on another 45 research presentations in open sessions at national and international meetings and at program reviews of agencies including the National Science Foundation and the Departments of Education of the US and Russia. Symposia I have organized (see Service)

My field research has focused on **endangered-species ecology and management**, often in managed landscapes. I have led collaborative research on California condor demographics, humpback chub population condition, surveys of endangered and other snail populations in the Southwest, and survey methodology for Indiana bats, each with a different set of experts on the species in question. In all these cases, my strong quantitative and field skills have allowed me to bring together information and experts to advance conservation for these species. My work with colleagues on California condors began a series of papers from other researchers dealing with lead and condors, and that paper is the most cited in my bibliography.

I have leveraged the expertise at SPEA and at Indiana University to grow professionally into **studies that bridge conservation science and policy**. My most recent article in BioScience, on addressing gaps in the national conservation network, written with colleagues from around the nation, is an outstanding example of collaborative science leading to strong insights into policy and management. Although collaborative work can be costly in terms of time, the gains in impact often far outweigh the expense, as this effort plainly showed. The immediate and sustained response from national actors in conservation clearly demonstrates the importance of the issues we raised and speaks to its likely impact *on* the field as well as *in* the field.

The paper I senior-authored on implications for science and management of the National Wildlife Refuge System Improvement Act arose out of a workshop that Professor Fischman and I conducted, which brought together scholars across law, policy, and science, in addition to agency representatives. Participants at that workshop have worked together since meeting one another there, demonstrating the impact of the collaborative opportunity. I presently collaborating with Professor Robert Fischman on two articles reviewing planning, one broadly based and one focused specifically on planning for climate change, for the National Wildlife Refuges; these arise out of our co-taught capstone course. We plan to build on these with colleagues to create a review of planning among federal land-managing agencies and have involved colleagues working on the National Forest system and the Bureau of Land Management.

Climate change is a problem of increasing urgency in conservation, and I have directed some of my research to looking at the practical issues associated with **planning and adaptation strategies for climate change**. I have one published article with one of my graduate research assistants, describing the availability of planting material for conducting forward-looking restoration, which has been the focus of a considerable number of requests for reprints. The next article, studying legal and policy obstacles to forward-looking restoration is in preparation with graduate assistants and coauthor Dr. Charles Michler, from Purdue. The climate-change conservation planning paper with Professor Fischman is also in preparation, as I mentioned above. Elsewhere, in climate-change, I have made an invited presentation at a national meeting, and have been an invited contributor to a book chapter dealing with strategies for reducing extinction risk under climate change. Climate change further exacerbates the problems caused by lack of coordination among climate-change actors that I addressed in the recent BioScience article. My existing work provides me with strong research and policy contacts to continue to address these issues, and the ongoing nature of the debate lends itself to research to understand how progress can be made. In addition, my teaching-and-research grant provides support for time in Moscow in summer 2013 to discuss planning for climate change in the Russian protected-area system.

In summary, my record shows strong integration of the three faculty roles, with research and publication, teaching, and service activities deliberately reinforcing each other. My research record shows solid productivity, with regular publications in high-quality journals, invited presentations to national and international audiences, numerous presentations at national and international meetings, and regular support from agencies and NGOs. The public service that has resulted from my research includes significant impact on national-level conservation planning, changes in policies for and management of endangered species, and has affected ecosystem management in Grand Canyon. Training I provided has introduced an entire region of the FWS to climate-change science, and given biologists new skills to work with a little-known endangered species. I have also received an award for training conservation and county planners in GIS work for conservation. More locally, I render abundant, high-quality service to my school and university and to my profession, including an award for edited volume and provision of travel support for research collaboration to faculty members. As a teacher, I have received many awards and consistently high evaluations, and I mentor and advise many more than the usual numbers of students to excellent effect in terms of recruitment, academic success, and placement. A significant teaching-and-research grant from the Department of Education acknowledges my ability to craft effective, innovative courses, and my teaching materials are widely shared and used. I have scholarly publications in, and have made presentations on, teaching and learning at national and international meetings. I have momentum and opportunity for scholarly and service work related to national-level conservation planning and to adaptation to climate change. I have a strong foundation as well in scholarship of teaching and learning, and the means and interest to promote excellent teaching beyond my own classrooms. My research, service, and teaching are thus fully integrated and contribute powerfully to extensive information-sharing and effective support for collaborative efforts within my profession and school, as well as to robust benefits to the public. At the rank of full professor, this integration will provide me with an abundance of opportunities in all three areas, which will serve my community and my profession well.

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