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The PALS booklet is a showcase of the achievements and activities of the National Center for Smart Growth’s Partnership for Action Learning in Sustainability program and serves to promote the program to alumni, friends and the citizens of Maryland. We appreciate your comments on this publication and encourage you to contact us at:

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# Table of Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why Pals?</td>
<td>6</td>
</tr>
<tr>
<td>Making Community the Classroom: Action Learning</td>
<td>9</td>
</tr>
<tr>
<td>Defining a Sustainable Education</td>
<td>12</td>
</tr>
<tr>
<td>Learning Beyond the Discipline</td>
<td>14</td>
</tr>
<tr>
<td>Benefits of the Unfamiliar: Fieldwork in Frederick</td>
<td>17</td>
</tr>
<tr>
<td>The Program’s Beginnings</td>
<td>23</td>
</tr>
<tr>
<td>Student Profile: Jaelin Cook</td>
<td>27</td>
</tr>
<tr>
<td>Student Profile: Abby Tesfaye</td>
<td>28</td>
</tr>
<tr>
<td>Student Profile: Jody Moscaritolo</td>
<td>30</td>
</tr>
<tr>
<td>The City of Frederick</td>
<td>34</td>
</tr>
<tr>
<td>Making PALS at Home: The City of College Park, Maryland</td>
<td>35</td>
</tr>
</tbody>
</table>
In 2013, Northeastern University conducted a survey among American professionals to determine attitudes towards the future of higher education in the United States. Of the more than 1,000 people polled—many of whom make hiring decisions for their companies—over half felt that colleges are not preparing students for success in today’s competitive workforce\(^1\). In particular, most business leaders stressed that the qualities that make a capable candidate—like problem-solving, communication skills and experience in practice—are often under-taught.

Higher education is in a race to adapt a centuries-old pedagogy to meet the needs of the 21st century student. Creating meaningful education through an environment of experience is a challenge facing educators around the country.

At the same time, the landscape of the American metropolis is also changing. As communities grapple with the significant economic, demographic and environmental shifts of the past 25 years, local governments are running their own race; one that preserves community, fosters sustainability and improves quality of life for its citizens. These very contemporary challenges, coupled with dwindling budgets and overburdened staff, have left local governments seeking new solutions and help.

Two challenges—equipping today’s students for tomorrow’s workplace and equipping today’s local governments for tomorrow’s tasks—were the driving force behind a new program at the University of Maryland, one that aims to change the
face of education and the future of Maryland communities.

The Partnership for Action Learning in Sustainability or **PALS**, is a bold way of engaging and teaching students through collaborative, real-world experiences in problem solving with a civicly-minded bent. Engaging with communities as living, complex learning environments for disciplines across campus, **PALS** offers students and faculty a venue for experimentation, creativity, collaboration and practice; in short, an innovative way to teach the tools necessary for addressing 21st century problems. While the program is new in pedagogy, it is conventional in purpose; working collaboratively with Maryland communities to provide real solutions to economic, social and environmental sustainability issues, **PALS** complements the university’s founding commitment to improve the lives of Maryland citizens, a cornerstone of the university’s land-grant mission.

**PALS** partners with one or two communities each academic year, matching customized coursework with the specific challenges described by the partner community. Projects range from stormwater management to revitalizing a downtown block; from issues of cultural heritage to public health. Launched in the fall of 2014 with The City of Frederick, Maryland, **PALS** has galvanized over 300 students into action in its first year through a diverse course load that includes the arts, economics, biology, design and urban planning. The result is thousands of hours of dedi-

*Learning is experience. Everything else is just information.*  
Albert Einstein
cated work from a world-class university that places student, faculty and research knowledge at a community’s fingertips, concurrently changing how we teach, challenge, prepare and inspire our students.

“I’ve been so impressed with the level of work. If we can do ten percent, five percent, even one percent of what the students brought forward, then this partnership has been worth it for The City of Frederick.” - Michael O’Connor, Alderman, The City of Frederick

TOP: Daniel Moreno-Holt and Professor Mathew Bell discuss an issue. Coaching and intimate student teacher interactions are the hallmark of action learning that is project centric. RIGHT: Bobby Bauml of The City of Frederick’s Department of Economic development makes a presentation about resources available to small businesses along Frederick’s Golden Mile.
I Hear and I forget; I see and I remember; I do and I understand.
- Confucius

The college classroom is experiencing an overhaul. Once dominated by passive learning techniques like the lecture, new technology, pedagogical research on retention and the recognition of a wider range of learning styles is prompting faculty to examine the way they teach. Increasingly, educators are embracing the idea of “learning by doing” or experiential learning. American psychologist David Kolb’s theory of experiential learning explains that, “Learning is the process whereby knowledge is created through the transformation of experience.” A mountain of data collected over the last 20 years supports Kolb’s theory; it is estimated that learning in practice delivers a 75% retention rate, compared to just 5% from a traditional lecture.

Experiential Learning is an essential component in preparing students to meet the challenges of an ever-changing world. It provides a font of experience—in problem-solving, in participation and in application of the knowledge acquisition process—for students to draw upon when tackling new challenges. At its core, it is about having experiences, not just hearing about them.

Where experiential learning is learning by doing, the concept of action learning is more holistic; it combines the practice of experiential learning with the goal of solving a real problem in a team setting. Coined by Professor Reginald Revans...
In its freshman year, PALS was the second largest of 18 action-learning initiatives in the United States, with a roster of 30 courses from 10 disciplines across campus.

**PALS** is part of a fast-growing network of over 20 similar programs around the country known as EPIC-N, the Educational Partnership for Innovation in Communities - Network.

At the 2015 EPIC-N Conference in Minneapolis, participating EPIC programs constructed the framework for what constitutes an action-learning education/community partnership program. The defining elements include:

1. University/Community partnership
2. Innovation in meeting societal needs
3. Student engagement
4. Multidisciplinary
5. Defined geographic focus
6. Scaled for impact
7. Mutual investment
8. Defined time limit
9. Projects defined by University/Community consensus
10. Existing courses
11. Opt-in for faculty
12. Community selected deliberatively

Students from Dr. Keryn Gedan’s Conservation Biology class track invasive plant species in the Frederick watershed.
at the University of Cambridge, action learning is a collaborative, customizable process, that overcomes the limits of “one-size-fits-all” approach of traditional learning.\textsuperscript{4}

The \textbf{PALS} pedagogy of action learning is a civic engagement exercise; students, faculty and community stakeholders pooling their knowledge, energy and experience in collective problem-solving efforts to address community sustainability issues. The community acts as a forum for cross-disciplinary learning on multiple scales, where students and faculty from a variety of disciplines can draw on each other’s unique skills, leverage information and data and offer valuable perspectives. The experiential pedagogy of \textbf{PALS} is rooted in discovery, focusing on the fact that humans are natural learners and learn best by experimenting, questioning and inquiring.

The benefits of action learning are many. It offers rich, interdisciplinary experiences, allowing students to learn from both faculty and each other. It sharpens problem-solving skills and stretches critical thinking muscles. It connects students with contemporary challenges, not only through textbook case studies, but also first hand, in community settings. The goal of \textbf{PALS} is that, through participation, students are prepared to enter the workforce with relevant experience and a commitment to addressing society’s challenges.
Defining a Sustainable Education

“Sustainability is about balancing environmental, economic and equity goals; in practice this is a complex undertaking, one that requires an understanding of tradeoffs and unintended consequences.” - David Cronrath, Dean School of Architecture, Planning and Preservation

Weaving sustainably into curricula is one of higher education’s better strategies for preparing today’s students for tomorrow’s challenges. The impacts of a changing planet—interconnected economies, erratic weather patterns, global energy demands and increased life expectancy—have taxed communities in new and, sometimes, unexpected ways. Equipping students with the skills, institutional knowledge and new ways of thinking about their world prepares them to enter professional life.

An education that integrates the fundamentals of sustainability intersects all disciplines. It reflects the idea that academic work and study serve a greater purpose, one that promotes social justice, cultural values, resource conservation and economic opportunity. Fostering an integrated curriculum focused on sustainability and exploring cutting-edge solutions to challenges facing communities is a hallmark of the PALS program. This broad definition of sustainability means there is a wide array in projects that the University can undertake, including education, healthcare, the environment, law, design, the arts, land-use issues and business development.
An interdisciplinary team of real estate development and architecture students explored an industrial mixed-use development project on the East side of Frederick. The project was led by Professor Jana VanderGoot. Their study was coordinated with another student team looking at job growth opportunities in the same area.

By working with The City of Frederick we were able to address real concerns, meet real deadlines and provide real deliverables.

— PALS Student
Jana VanderGoot knows that there is no better teaching assistant than a real-world challenge. As an Assistant Professor of Architecture, most of the “studio” courses Jana has led at the University of Maryland’s School of Architecture, Planning and Preservation revolve around actual site challenges; they provide a tangible venue for creative thinking and problem solving that can’t be replicated through a lecture. When Jana learned that the PALS program was looking for willing faculty to participate, she didn’t hesitate. “While this is part and parcel of what we do in the architecture program, I was excited about the new opportunities the PALS program provides, like group collaboration and a live, accessible site.”

A 36-acre site on the east side of Frederick was the basis of Jana’s spring graduate level course, ARCH 407. Part design issues, part development challenge, the area was the ideal venue for her course; by design, the site also served as the capstone site for three graduate students in the Master of Real Estate Development Program under the support of the Program’s director, Margaret McFarland. Furthermore, the area was the subject for a course taught by Landscape Architecture Professor, Jack Sullivan. “What sets PALS courses apart from a typical learning experience is that we are working in tandem with all of these other courses across campus,” explains Jana. “We’ve had so many great interactions between faculty and students from other programs. It’s been a bit of a game-changer for my students.”
That cross-disciplinary PALS model, Jana explains, has offered her students the opportunity to learn, collaborate and explore questions with peers from other disciplines, an exercise that best mirrors future interactions in the profession. “When I was in school, I worked a lot on my own, which can be fun in its own way, but that’s not the reality of the workplace,” explains Jana. “These students are coming to the table with very different skill sets which, in turn, enriches the learning experience and helps them develop those soft skills of collaboration and compromise.” The process is not without its challenges; different priorities and expectations have put the students in situations they needed to work through, a process Jana finds extremely beneficial. “I explained to my students, very early on, that it’s to their advantage to challenge each other. That’s often where great ideas are made.”

What sets PALS courses apart from a typical learning experience is that we are working in tandem with all of these other courses across campus. It is the practical experience that she believes is the most beneficial aspect of the PALS program. “The students are learning very important skills and how to work with other people toward a greater good.”
Keryn Gedan is accustomed to uncharted territory, just not typically in the classroom. A conservation biologist, she is well-versed in exploring a variety of terrains for her research, an experience she had not been able to translate to her students at UMD. When she heard of Frederick’s desire to study environmental effects on the city’s watershed, she seized the opportunity. “This was the first time we had the chance to participate in fieldwork as a class,” said Keryn. “So, not only would students be able to take classroom concepts on global climate change and apply them on a local level, they could share their work with each other, the public and the city, which I think is incredibly meaningful.”

Gedan’s course, CONS 670, provided three separate studies on the city watershed: an invasive species study; an analysis of human impact and recreation on the watershed; and a forecast of climate change impacts. “Participating in the PALS project was clearly beneficial in so many ways,” said Gedan, who in the past, allowed

Benefits of the Unfamiliar: Fieldwork in Frederick
To understand the impact PALS can have on a community, one only has to look at the program by the numbers. The sheer quantity of participating programs and students, hours of university engagement and the resulting number of projects not only demonstrate the university’s commitment, they are, in essence, the key to the program’s effectiveness. That strength in numbers is also strength in dollars; Program administrators estimate The City of Frederick gained $900,000 of project work from students and faculty through the PALS program, averaging about ten dollars of product work for every dollar spent.

By having to go into the field, I learned different skills that I would not have learned if I was only in the classroom.

-- PALS Student

Top RIGHT: Landscape Architecture professor Chris Ellis gives instructions to students for a fieldwork assignment. Bottom RIGHT: Hanyang Liu conducting fieldwork for a watershed project.
her students to choose their final project, which they often completed solo. Engaging in a real-world challenge offered a level of difficulty they might not otherwise encounter in school. Because Keryn introduced the project on the first day, it provided a touchstone throughout the semester. Working in groups, something Gedan says is “common in careers, not so much in the classroom,” helped the students develop fundamental professional practices, like communication and dividing work, while allowing them to each bring their unique expertise to the table. “They were able to learn a lot from each other by working as a group.”

The experience was especially gratifying for the students because of the community’s response. Over 400 Frederick residents took time to answer the student’s questionnaire, a surprise that was both “exciting and empowering” for the team. “The level of care and investment in the area was really demonstrated with the questionnaire, which I think was inspiring to the students,” said Gedan.
In the end, it also helped develop a better product, something that caught the eye of city officials. “Frederick City said our project was one of the most useful projects they received last semester,” said Gedan, who is originally from Frederick. “It was a real honor. I look forward to teaching another PALS course next year.”

Typically in my program, you research a topic and create a paper, but with PALS we actually got to do something. I loved interacting with people from the city and getting to know Frederick. It was such valuable experience. - Priya Hiri-yanna, UMD Sophomore
“PALS is exactly what we should be doing in our teaching. One of our priorities for the university is better connections with communities throughout the state. I can’t think of a better example of that than this program.” – Mary Ann Rankin, Senior Vice President and Provost, University of Maryland

“As I stepped into the role of sustainability manager, I was well aware that I would not have dedicated staff for many sustainability projects. The PALS students were able to help progress my goals as sustainability manager further than I would have been able to go on my own by conducting a greenhouse gas inventory, studying climate change in the watershed and pushing the envelope with a shared use path extension. With their help, I had plenty of data and information to back up the city’s Sustainability Master Plan.” – Jenny Willoughby, the City’s Sustainability Manager
Integral to the success of PALS are community partnerships like that with The City of Frederick. Mayor McClement (below) was enthusiastic in his support and City officials Joe Adkins (on the right, with Gerrit Knaap), Matt Davis and Jenny Willoughby, who coordinated for the city the PALS projects, worked with students and faculty, providing input, resources and necessary counsel, often traveling to College Park to sit in on course presentations or classroom activities. Their efforts, in turn, have provided the city with more relevant, meaningful project results.
In the spring of 2013, Dr. Gerrit Knaap, Urban Studies Professor and Director of UMD’s National Center for Smart Growth (NCSG), sat down with David Cronrath, Dean of the School of Architecture, Planning and Preservation (MAPP) to discuss an idea for a new kind of curricula, one that combines service learning with assistance in sustainable practice for Maryland communities. The idea initially sprouted from a conversation between Governor Martin O’Malley’s chief of staff, John Griffin, and Knaap about how the University could play a greater role in helping local governments in Maryland become more sustainable places. Later that year, Knaap and Assistant Secretary of the Maryland Department of Natural Resources David Goshorn attended a Conference at the University of Oregon that showcased Oregon’s Sustainable City Year Program. The New York Times had hailed the Oregon program as “perhaps the most comprehensive effort by a U.S. university to infuse sustainability into its curricula and community outreach.”

“We wanted to combine an active learning environment with community engagement... create an inspiring and meaningful educational experience,” said Knaap. “It represented a vision for what we could do—both as a land grant institution and a world class research university—for our state.”

Dean Cronrath wholly embraced the idea having recently met with Senior Vice President and Provost Mary Ann Rankin, University President Wallace Loh and Chancellor
LEFT: During the faculty-led tour, a restaurant employee on a break speaks to (left to right) Mira Azarm, David Tomblin, Becky Archer—all with College Park Scholars—and Gabrielle Collard, Division Manager of Current Planning for The City of Frederick.

BELOW: Students doing fieldwork for the watershed project.
Brit Kirwan to discuss ways that MAPP could incorporate a service learning program into the school, similar to the university’s long-established and publicly popular agriculture extension service. Expanding action learning and community outreach to the entire university seemed appropriate.

Within six months, Knaap organized a symposium with UMD faculty, community stakeholders and nationally recognized educators, including administrators from the Oregon program. Sponsored by the Town Creek Foundation, the symposium laid the groundwork for what is now PALS.

PALS is administrated by the National Center for Smart Growth. In addition to the continued support of MAPP and the Office of the Provost, PALS also benefits from a diverse advisory committee. Consisting of faculty and administrators from programs across campus, the committee provides the essential viewpoints, counsel
and input that are intrinsic to the program’s success.

Leading these efforts is Uri Avin, a 40-year veteran of community and urban planning and an established professor at the university. Uri’s knack for understanding and relating to both government municipalities and his university peers is an indispensable asset to the program. Working closely with programs across campus, Uri built a network of like-minded faculty that helped cultivate a foundation for PALS’ inaugural course load in Frederick.
Student Profile: Jaelin Cook

UMD Sophomore Jaelin Cook was unsure what to expect when he signed up for a new composting course offered as part of College Park Scholars, a “living-learning” environment for select freshman and sophomores. A driven, insightful business student from Baltimore County—he is currently reading Tom and David Kelly’s “Creative Confidence” for fun—Jaelin was hoping for a different type of experience that offered some practical uses. What he got, he discovered, was much more. “The course was much more interactive than any other class, much more active,” explains Jaelin. Tasked with helping the city investigate a municipal composting program, students ping-ponged between a classroom in College Park and the streets of Frederick, where they engaged city officials and restaurant owners.

“Talking with the people of Frederick helped us better understand what they were up against and gave us some perspective for the project,” explained Jaelin, who also noted that an unexpected bonus of the course was an exercise in empathy. “It helped me look at things differently. It’s not just black and white; it’s a lot deeper than that.”

The fresh, surprising advantages of the PALS course also delivered a welcome element of fun. “It’s not a high-stress class, there is no right or wrong,” explains Jaelin. “I’m having a lot of fun.”
Abby Tesfaye had just completed an action-learning course in Urbana, Maryland, just north of Frederick, when she first heard about a new, campus-wide program promising to deliver the same real-world projects and practical applications she experienced in Urbana, with the added benefit of community engagement. “The opportunity to give back to a community is very appealing to me, so when I heard about PALS, I thought, well certainly I’m going to do this,” said Abby. “In essence, I just kept talking to the city and (program director) Uri Avin until the right opportunity presented itself.” Abby—who is pursuing a dual graduate degree in urban studies and historic preservation and who has an undergraduate degree in architecture—found the perfect niche within the PALS program to put all of her skills to work, creating an architectural walking tour for the City.

According to Abby, what made her PALS experience unique was the glimpse it offered of professional life outside the walls of UMD. To develop the guide, she worked closely with city employees and historians; interactions that required a level of professionalism and business practice beyond a typical course project. Suddenly, Abby was working for a client, not just a grade. “You have to up the ante,” she explains. “The paper you’re writing is going to be handed into somebody who is not only genuinely interested in what you are offering, they might be putting it to use.”

Her architectural tour guide was so well received that it was adopted by the city. “The practical and professional experience PALS offers can’t be matched,” said Abby.
BELOW: Meghan Leahy presents the site analysis and project options developed in her class.
Jody Moscaritolo is not a typical UMD graduate student. Pursuing his MBA part time with the Smith School of Business, Jody is also a business analyst with nearly 15 years of professional experience in IT, healthcare and corporate management. “I’ve looked at the statistics,” said Jody, “and I’m definitely at the upper range of the age group.” That experience has its benefits; Jody’s 13 years in the business world has given him a professional edge and adept perspective on coursework, particularly the “live projects” commonplace at the Smith School. But when Jody walked into the classroom on the first day of his Management Consulting class, a new PALS course, he was faced with unfamiliar territory.

“The biggest difference between the PALS project and a typical school project is that, when a ‘live project’ is brought to the group by myself or another classmate, we immediately have someone who is an expert on the subject and who probably has done months of work learning about the client and the project content,” explains Jody. “In the PALS class, we didn’t have that luxury because the client was coming to us independently. We had to very quickly compile our research, make our recommendations and put it all together into a cohesive strategy.”

The project, an analysis of a hotel and conference center for the city, provided Jody practice with certain hard skills and experience in crucial soft skills, like communication and team organization. With no project experts in house, the team had to quickly
identify their strengths and put them into practice. “The ability to quickly identify what the project needs and who has those strengths is a really interesting skill set that proves itself very useful on a day-to-day basis.”

According to Jody, the combination of a new client and short timeline is a scenario that can’t be replicated with classroom case studies, but one that is critical in preparing for a successful career in business. “Time-sensitive projects happen for all sorts of reasons, like budget cycles and political reasons; oftentimes, it’s a crunch to bring significant order and recommendations to the client. For management consulting, having that skill is crucially important, because that is frequently the case in the real world. It was a great experience and provided skills I can integrate into my toolset.”
ABOVE: Students from the ViewFinder team discuss the project and develop their strategy.
LEFT: A community forum, held at the Asian American Center in March 2015, was co-hosted by The City of Frederick, Asian American Center, Centro Hispano and the Golden Mile Alliance.
“The level of commitment of the students and faculty at UMD was completely unexpected. The students jumped into each project with a zeal that was contagious to the staff. The final student products not only provided the information, but also created a clear vision on how to proceed with the project. The PALS partnership helped to open our eyes of the great things that are already in place and the new ideas that can be used to improve the great quality of life that we expect in the City.” - Joe Adkins, The City of Frederick Planning Director
At the crossroads of I-270 and U.S. Route 40 in Western Maryland, roughly 45 miles northwest of College Park, is the historic City of Frederick, Maryland. Founded in 1745 by German settlers, Frederick has over 65,000 residents, making it the second largest city in Maryland.

In 2013, Frederick hired their first sustainability manager, Jenny Willoughby, to develop a sustainability plan in concert with the city’s planning department, which has long addressed quality of life issues. Despite this effort, city officials found that the day-to-day tasks of running a city often revolve around the squeakiest wheel, and that making meaningful headway on Frederick’s sustainability issues is a constant and continuing challenge.

The PALS partnership helped the City of Frederick expand the speed with which ideas could be reviewed and engaged. PALS students and faculty delivered the research, expertise, ideas and pathways to tackle some of the city’s pressing sustainability challenges. The student work offered a blueprint for next steps in critical projects like small business development, elimination of invasive plant species in the watershed and developing a citywide composting program.

Most importantly, the experience has cultivated a renewed commitment and feeling of empowerment among city officials and residents. City of Frederick Project List:

- Golden Mile Small Business Outreach
- Airport & Hotel/Conference Center Feasibility Study
- Downtown Architectural Tour
- Neighborhood Identity Analysis
- Route 15 Widening: Traffic/Greenhouse Gas Impacts
- Six New Neighborhoods for Frederick
- Algae in Carroll Creek
- Regenerating Biodiversity along Carroll Creek
- Managing Frederick’s Watershed
- Frederick’s Energy and Emissions
- Real Estate Development Options for Site C-2
- Carroll Creek Wildlife Recreation Area
- Golden Mile Recommendations
- Re-imagining North East Street
- Complete Streets Approach for East Street
- Recreation and Stewardship in the Watershed
- EFR Industrial Redevelopment
- East Frederick and Monocacy Blvd Development
- Feasibility Study for Redevelopment of City Sites
- Regenerating Biodiversity along Carroll Creek
- Composting and Organics Recovery
- Sustainability Plan Enhancements
- East Street Corridor Right of Way Improvements
- Re-use of the Renn Farm
- Video Storytelling
- Feature Writing
- Economics of Historic Preservation
- The Latin Connection
In the spring of 2015, program administrators announced a new **PALS** partnership with College Park, Maryland. The partnership, which had been in the works since the program’s inception, launched with a modest roster of coursework aimed at strengthening the campus/community town-gown relationship and contributing to efforts surrounding the Vision 2020, a larger initiative to make College Park a top 20 college town in five years.

In addition, the **PALS** work by students and faculty furthers the city’s goal of becoming a Maryland leader in sustainability; College Park earned Sustainable Maryland Certification in 2013 with the help of the University and hopes that PALS will help city administrators’ continue their efforts.

“The City’s partnership with the **PALS** program will help us achieve the council’s goal for College Park to become a leader in sustainability,” said Bill Gardiner, Assistant City Manager of the City of College Park. “This collaboration will provide research and recommendations that will inform our policy decisions.”

**College Park Project List:**
- Architecture and urban design solutions studio
- Public art / “placemaking” along Baltimore Avenue.
- GHG analysis of city buildings and operations
- Waste management practices

**Far RIGHT:** Thuy Do presents her work to a city planning group from The City of Frederick.
“Coming from a strong science background, I didn’t have much experience with management techniques or strategies. This course has really helped develop my understanding of the complexity of managing a multi-use recreational region, and the importance of taking into account the feelings and views of various stakeholders.” - PALS Student
List of References


