

# WHAT'S INSIDE THE SCO?

## PEOPLE

We are a team of geospatial professionals dedicated to serving the citizens of Wisconsin through our numerous programs and activities.



**BRENDA HEMSTEAD** has been with the SCO since 1979. She manages technical and outreach projects providing services to Wisconsin's surveying community. Brenda's work also encompasses educational and outreach efforts such as the annual Geospatial Summit and the Parcel-Surveying Forum. As the longest-serving employee of the office, Brenda provides essential planning, financial, and organizational functions. Email: <a href="https://www.hemstead@wisc.edu">https://www.hemstead@wisc.edu</a> Phone: 608-263-4371



JIM LACY became Associate State Cartographer in 2004. He provides technical and managerial leadership for projects, answers public inquiries, coordinates print and Web publications, and provides support to geospatial organizations. Jim has a B.S. in Geography & Information/Computing Science from UW-Green Bay and an M.S in Cartography/GIS from UW-Madison. Email: <u>lacy@wisc.edu</u> Phone: 608-262-6850



**CODIE SEE** joined the SCO in 2013. He supports the development of new geospatial technologies and provides project and technical leadership for the statewide parcel map project. Prior to joining the SCO, Codie worked for Mapping Specialists and for the City of Janesville Planning and Engineering Departments. He is an alumnus of UW-Madison with a double major in Human Geography and Cartography/GIS. Email: <u>csee@wisc.edu</u> Phone: 608-265-8106



**HOWARD VEREGIN** was appointed State Cartographer in September, 2009. His prior positions include Director of Geographic Information Services at Rand McNally & Co., Associate Professor of Geography at the University of Minnesota, and Assistant Professor of Geography at Kent State University. He received his Ph.D. from the University of California-Santa Barbara in 1991. Howard is Director of the State Cartographer's Office with managerial oversight of all staff. Email: <u>veregin@wisc.edu</u> Phone: 608-262-6852



**DAVID VOGEL** joined the SCO in 2012 to work on cartographic projects and web applications. Much of his work focuses on the statewide parcel map project through the Wisconsin Department of Administration. David received his B.S. in Forest Management and Conservation Biology from UW-Stevens Point in 2008 and completed the GIS Certificate Program at UW-Madison in 2014. Email: <u>djvogel2@wisc.edu</u> Phone: 608-890-3793



**ANA WELLS** joined the SCO in April 2018. She works with the SCO team developing statewide parcel and Public Land Survey System GIS databases and training geospatial professionals in the use of LiDAR technology. Before joining the SCO, Ana worked as research assistant for the Urban and Regional Planning Department and Nelson Institute for Environmental Studies, and as a teaching assistant for the Soils Department. She has a Ph.D. in Soil Science and a Graduate Certificate in GIS from the University of Wisconsin-Madison. Email: <u>ajwells@wisc.edu</u> Phone: 608-262-3065



**AJ WORTLEY** left the SCO in 2018 to pursue a career in the private sector. Aj joined the SCO in 1998, and provided technical leadership and project management for the SCO's suite of interactive mapping applications and outside-funded special projects. He also supervised the office's lab of student developers. AJ holds a B.S. in Civil Engineering from UW-Madison and is a Past President of the Wisconsin Land Information Association.

# MISSION

**OUR MISSION** is to foster the development of Wisconsin's geospatial community by facilitating the creation and exchange of geospatial data, services and information, and promoting their use in support of education, innovation and delivery of services to the state's citizens.

**OUR VISION** is a Wisconsin geospatial community that is well-informed, supported and collaborative, and that operates on complete, up-to-date, integrated information for effective analysis and service delivery.

Our mission embodies the **WISCONSIN IDEA** – the principle that education should influence people's lives beyond the classroom, and that knowledge and expertise within the University of Wisconsin should enhance the quality of life for all citizens of the state.

# STATUTORY RESPONSIBILITIES

The State Cartographer position was created in 1973 by the Wisconsin Legislature and assigned to the University of Wisconsin. The University created the State Cartographer's Office (SCO) to assist the State Cartographer in performance of the following statutory duties:

- 1. MAINTAIN A CATALOG of maps of Wisconsin available in municipal, county, state, and federal agencies.
- 2. **PROMOTE COOPERATION** amongst municipal, county, state, and federal mapping agencies and surveyors to facilitate coordination and information exchange.
- 3. **STAY UP-TO-DATE** on the progress made by mapping agencies.
- 4. **DISSEMINATE INFORMATION** about innovations in mapping techniques and procedures, map and air photo indexes, control data, data accuracy standards, legal aspects of map publication, and other topics in order to facilitate an effective mapping program for the state.
- 5. **PUBLISH SPECIAL MAPS** to promote the mapping of the state and the use of maps by individuals, as long as these maps are not within the activities of another state or commercial agency.
- 6. **ASSIST THE DEPARTMENT OF NATURAL RESOURCES** in its work as the state representative of the US Board on Geographic Names and its other functions.

The specific statutory language can be found in section 36.25(12m) of state statutes: <u>docs.legis.wisconsin.gov/statutes/statutes/36/25/12m/a</u>

# STRATEGIC PRIORITIES

The following as our strategic priorities and initiatives for 2018-21.

#### **EDUCATION & INFORMATION DISSEMINATION**

- Develop innovative professional short courses on selected geospatial topics and work with partners to market and deliver them to the public.
- Contribute to the UW-Madison geospatial community by organizing and hosting the annual Geospatial Summit.
- Leverage our contacts statewide to help connect UW students to internship opportunities.
- Contribute to the development of methods, best practices, and standards for Web cartography, GIS-based cartography, and digital mapping.
- Strengthen our role as the state resource for geospatial information, including answering inquiries, the geospatial event calendar, the jobs board, website content and SCO publications.

#### **STUDENT ASSISTANTS**

- Enhance our student assistant program to ensure that students gain the practical job skills they need to make a successful workforce transition.
- Provide SCO student assistants with the ability to learn a variety of geospatial technology solutions that will enhance their career skills, including open source geospatial applications and the latest commercial software.
- Engage SCO student assistants in applied research projects, especially projects that create or improve access to geospatial data, provide GIS tools for non-traditional user groups, or engage new technologies and methods on the cutting edge of GIS and cartography.

#### DATA DEVELOPMENT

- Continue improving our experience and skills integrating local parcel data for the Statewide Parcel Map Initiative and developing plans for long-term sustainability of statewide parcel data.
- Position Survey Control Finder as the definitive source of survey control and PLSS data for the state.
- Become the state steward for an integrated statewide PLSS data layer initially developed through the Statewide Parcel Map Initiative.
- Leverage data collected through the Statewide Parcel Map Initiative to produce datasets and perform analyses that benefit the community.
- Improve Wisconsin cartography and GIS resources, including developing data layers that do not have another state agency custodian and enhancing small-scale state base maps.
- Support efforts to maintain Wiscland2 and produce useful derivative products from it.
- Offer assistance to the state's efforts to develop N-G-911 GIS datasets and processes.

#### **DATA ACCESS**

- Advocate for open access policies for Wisconsin geospatial data and support open data initiatives across the state.
- Improve access to geospatial datasets through partnerships with the Robinson Map Library, the Department of Administration and other members of the state's geospatial community.
- Work with the Robinson Map Library to obtain funding for the Wisconsin air photo repository.

#### **COORDINATION & COLLABORATION**

- Develop collaborative geospatial projects, initiatives and events with institutions of higher education across the state.
- Facilitate collaboration between the academic and non-academic communities in the state to help span the gap between pure and applied research for the benefit of Wisconsin citizens.
- Collaborate with the Wisconsin Geographic Information Office on educational initiatives, research projects, and other areas.
- Provide leadership for the NATRF2022 Task Force to help ensure that the GIS and surveying communities in the state have the information they need to transition to the new system.
- Continue to serve as a bridge between the GIS and surveying communities throughout the state, through activities such as the annual Survey-Parcel Forum and the PLSS Work Group.

- Continue our leadership and coordination role in Wisconsin geospatial organizations.
- Advocate for issues and policies that support and improve the state's geospatial community.

#### **INTERNAL OPERATIONS**

- Be entrepreneurial and make fund-raising a priority, including our Foundation account, funds from workshops, grants and contracts, and other services we can provide.
- Highlight SCO activities through marketing materials, website content, SCO publications, the annual report, conference presentations and professional publications.
- Be resourceful, innovative and strategic with our limited resources to implement our strategic priorities.

#### Full document: <a href="http://www.sco.wisc.edu/pubs/sco-strategic-plan-2018-2021">www.sco.wisc.edu/pubs/sco-strategic-plan-2018-2021</a>

## FUNDING

The SCO is a statutorily enabled program at UW-Madison. The office is affiliated with the Department of Geography in the College of Letters & Science.

We receive an annual base budget allocation from the College for personnel, students and operating expenses. Additional financial support from the UW-Madison Division of Continuing Studies facilitates our outreach mission.

We fill the remainder of our funding needs through external grants and contracts, which account for about one-quarter of our budget.



## STUDENT ASSISTANTS

Our students help us fulfil our mission and statutory responsibilities, and in return they gain experience working with maps and GIS data in real-world situations. Our students in 2017-18:

**DAWSON BANCROFT-SHORT** GIS Certificate student, Geography Dept., UW-Madison. SCO student assistant from May, 2016 to May, 2018.

**SKYLAR ORENSTEIN BUONO** Computer Science Certificate student, UW-Madison. SCO student assistant from June, 2017 to May, 2018.

**AUSTIN COPPERNOLL** Undergraduate student, Geography Dept., UW-Madison. SCO student assistant from December, 2016 to present.

**ANDREA EIBERGEN** Undergraduate student, Geography Dept. UW-Madison. SCO student assistance from October, 2017 to present.

**SCOTT FARLEY** Graduate student, Geography Dept., UW-Madison. SCO student assistant from June, 2017 to August, 2017.

**RYAN HALTON** Professional Masters in GIS student, Geography Dept., UW-Madison. SCO student assistant from Dec., 2016 to present.

**MICHAEL HRUSKA** GIS Certificate Student, Geography Dept., UW-Madison. SCO student assistant from January, 2017 to present.

**SUNG-HYUN KANG** Undergraduate student, Computer Science, UW-Madison. SCO student assistant from June, 2017 to May, 2018.

**JEFFREY PICIRILLO** Computer Science Certificate student, UW-Madison. SCO student assistant from December 2017 to present.

**BENJAMIN SEGAL** Undergraduate student, Geography Dept., UW-Madison. SCO student assistant from June, 2017 to December, 2017.

**CHRIS SCHEELE** Graduate student, Geography Dept., UW-Madison. SCO student assistant from May, 2015 to August, 2017.

**BEICHEN TIAN** GIS Certificate Student, Geography Dept., UW-Madison. SCO student assistant from May 2017 to August, 2017.





#### The SCO has hosted several hundred student assistants since the 1970s. Information on these former students can be found here: www.sco.wisc.edu/sco/alumni

# FUNDED PROJECTS

#### STATEWIDE PLSS (PUBLIC LAND SURVEY SYSTEM) DATABASE, VER. 0

The goal of this project is to produce a statewide PLSS GIS layer based on best-available county coordinate data to improve parcel map accuracy.

- Partners: Wisconsin Dept. of Administration (DOA); county land information offices
- Funding/Timeline: Part of the Ver. 3/4 Statewide Parcel Project (see below)

#### STATEWIDE PARCEL DATABASE, VER. 3/4

The goal of this project is to create the 3rd and 4th versions of the Wisconsin statewide parcel map, a free online GIS database and app of all tax parcels in the state.

- Partners: Wisconsin Dept. of Administration (DOA); county/municipal land information offices.
- Funding/Timeline: \$234K/Jan 1, 2017 to Dec 31, 2018
- Student assistants: Austin Coppernoll, Ryan Halton, Michael Hruska, Jeffrey Piccirillo

#### LIFEMAPPING

The goal of this project is to develop a beta version of software for LifeMapping, a university-based project seeking to attract users and investment to its interactive mapping product.

- Partners: Dean Olsen (project founder), UW Cartography Lab, Earthling Interactive, KW2 Marketing
- Funding/Timeline: Portion of a larger \$200K project funded by D2P/Jan 1, 2017 to Dec 31, 2018
- Student assistants: Scott Farley, Sung-Hyun Kang, Skylar Orenstein Buono, Chris Scheele

#### ANTIMICROBIAL RESISTANCE MAPPING AND DECISION SUPPORT

We are working with the UW-Madison School of Pharmacy to map patterns of pathogen resistance in Wisconsin. The results will be used by Pharmacy researchers to better understand the reasons for antibiotic resistance in the state. In addition, we are developing a "decision-support" web application to help doctors pick the best antibiotics based on the observed antimicrobial resistance patterns.

- Partner: UW-Madison School of Pharmacy
- Funding/Timeline: ~\$10K/Mar 1, 2018 to Jun 30, 2019
- Students: Andrea Eibergen, Jeffrey Piccirillo

# SELECTED STUDENT PROJECTS

#### HISTORIC AERIAL IMAGERY MOSAICS

We are processing thousands of 1930s-era historic air photos of Wisconsin to produce county-wide georeferenced mosaics. Some of the mosaics have been loaded into our Coastal Bordner Survey Explorer app: <u>maps.sco.wisc.edu/BordnerCoastal</u>

• Students: Dawson Bancroft-Short, Austin Coppernoll, Michael Hruska

#### SURVEY CONTROL FINDER BACKEND WORKFLOW

This project created a suite of geoprocessing tools to assist with Survey Control Finder data preparation, aggregation, and upload. The Prepare Tool facilitates field mapping and standardization of native data to the statewide schema. The Upload Tool writes new control points to a CARTO database while backing up and removing previous points from the database. The NGS Tool leverages a list of National Geodetic Survey Height Modernization projects in order to return a GIS file of points participating in each project.

• Students: Austin Coppernoll, Jeffrey Piccirillo

#### LOWER WISCONSIN RIVERWAY PARCEL PROJECT

We helped representatives of the Lower Wisconsin State Riverway Board develop an outreach mailing list from the statewide parcel dataset. The resulting list was used to contact landowners along the lower Wisconsin River.

• Student: Ryan Halton

#### ACCESSING CLOUD-BASED LANDSAT DATA FOR EVAPOTRANSPIRATION MODELING

As part of a GIS Certificate Capstone project, a student developed Python scripts to extract Landsat data stored in the cloud. The goal of the project was to facilitate more efficient data preparation for evapotranspiration modeling using NASA's METRIC model.

• Student: Dawson Bancroft-Short

#### CULVERT DATA CAPTURE FOR HYDROLOGIC MODELING AND VISUALIZATION

As part of a directed study class, a student used ArcGIS Online and the Esri Collector mobile app to capture culvert data and use it to condition a LiDAR-derived digital elevation model (DEM) for hydrologic modeling. The before-culvert and after-culvert results of the model were then visualized in ArcGIS Online. • Student: Austin Coppernoll

## SCO WEB APP UPDATES

**SURVEY CONTROL FINDER** Redesigned to consolidate two existing online applications – ControlFinder and PLSSFinder – to provide a central point of access for geodetic data, Public Land Survey System corner data, county tie sheets, and National Geodetic Survey data sheets into a single application.

- Partners included County Surveyors, County Land Information Offices, the Wisconsin Dept. of Transportation, and the National Geodetic Survey
- Student Assistants: Austin Coppernoll and Jeffrey Piccirillo
- Website: <u>maps.sco.wisc.edu/surveycontrolfinder</u>

**THE COASTAL BORDNER SURVEY EXPLORER** Displays historic features extracted from the 1930s Wisconsin Land Economic Inventory ("Bordner" Survey) maps within Wisconsin's coastal regions, as well as selected 1930s-era air photo county mosaics.

- Partner: Forest Landscape Ecology Lab, in the Department of Forest and Wildlife Ecology at the University of Wisconsin-Madison
- Funding: Wisconsin Coastal Management Program and the National Oceanic and Atmospheric Administration, Office for Coastal Management under the Coastal Zone Management Act, Grant #NA16NOS4190108
- Student Assistant: Chris Scheele
- Website: <u>maps.sco.wisc.edu/BordnerCoastal</u>

**DISCOVERING WISCONSIN'S BEARING TREES** Displays information on Wisconsin's known remaining bearing trees, which were used in the original General Land Office survey of the state starting in the 1830s to denote the locations of Public Land Survey System (PLSS) corners.

- Partners: County and professional land surveyors
- Website: <u>maps.sco.wisc.edu/bearingtrees</u>

**WISCONSIN HISTORIC AERIAL IMAGERY FINDER** "WHAFinder" is our most popular Web application, used for downloading free 1930s-era aerial photography. Numerous quality and usability updates were made to improve the overall operation of the application.

- Partners: Geography Robinson Map Library & UW Digital Collections, UW-Madison
- Student Assistants: Jeffrey Piccirillo
- Website: <u>maps.sco.wisc.edu/whaifinder</u>

**GEODATA@WISCONSIN** We are in the early stages of developing the next generation of the Geodata@Wisconsin geospatial data discovery tool used by GIS professionals throughout the state. We expect a new and significantly improved Geodata application to be available in early 2019.

- Partner: Geography Robinson Map Library, UW-Madison
- Website: geodata.wisc.edu/opengeoportal/

# SCO IN THE NEWS

#### FORECASTING ANTIBIOTIC RESISTANCE WITH A 'WEATHER MAP' OF LOCAL DATA

UW-Madison News, Feb. 22, 2018 news.wisc.edu/forecasting-antibiotic-resistance-with-a-weather-map-of-local-data

#### COLLABORATIVE PROJECT TO MAP ANTIBIOTIC RESISTANCE DATA ACROSS WISCONSIN

MadGeogNews: News from Geography @ UW-Madison, Feb. 27, 2018 geography.wisc.edu/madgeognews/2018/02/27/collaborative-project-map-antibiotic-resistance-dataacross-wisconsin

#### UW-MADISON DEVELOPING ANTIBIOTIC RESISTANCE 'WEATHER MAP' OF WISCONSIN

Madison.com, March 16, 2018 <u>https://madison.com/wsj/news/local/health-med-fit/uw-madison-developing-antibiotic-resistance-weather-map-of-wisconsin/article\_41a8e39a-4eb4-5b88-8ea0-2f8e6ddb3bab.html</u>

#### PLSS-MEET ME AT THE CORNER FORUM REPORT

Wisconsin Professional Surveyor, No. 254, June 2018, p. 13.

## **CONFERENCE PRESENTATIONS**

B. Meyer, B. Hemstead & H. Veregin. (2017). *The Public Land Survey System and its Role in Parcel Mapping*. Wisconsin Land Information Association Regional Conference, Fond du Lac, Wisconsin. [Joint presentation]

P. Herreid, C. See, H. Veregin. (2018). Wisconsin Parcel Initiative Question and Answer Session.Wisconsin Land Information Association (WLIA) Annual Conference, Elkhart Lake, Wisconsin. J. Lacy. (2018) *So You Want to Find a GIS job in Wisconsin?* Wisconsin Land Information Association Annual Conference, Elkhart Lake, Wisconsin.

D. Mladenoff, M. Noone, C. See, H. Veregin. (2018). *Enhancing Access to Historic Geospatial Data for Wisconsin's Coast.* Upper Midwest Geocon - Annual Conference, La Crosse, Wisconsin. [Presented by C. See]

## **EVENTS ORGANIZED**

**MEET ME AT THE CORNER** The 4<sup>th</sup> annual Parcel-Survey Forum, with almost 100 attendees. This forum focused specifically on the Public Land Survey System (PLSS) corner maintenance process and included a field trip to a buried PLSS corner. Held at the Grand Lodge Waterpark Resort in Rothschild, April 2018. Facilitated by the SCO and PLSS Workgroup.

**BASICS OF LIDAR DATA** Our two-day LiDAR workshop for beginners. In FY18 we held workshops at the following locations for a total of about 100 attendees: St. Norbert College, De Pere, WI; UW-Eau Claire, Eau Claire, WI; UW-Milwaukee, Milwaukee, WI; Michigan State University, East Lansing, MI. This workshop is a cooperative effort with the State Geographic Information Office at the Department of Administration.





## **GEOSPATIAL ASSOCIATIONS AND AGENCIES**

**CARTOGRAPHY AND GEOGRAPHIC INFORMATION SOCIETY (CAGIS)** Board of Directors (Veregin)

LAND INFORMATION OFFICERS NETWORK (LION) SCO liaison (Veregin); Data repository project (See, Lacy, Veregin)

MASTER OF GIS PROGRAM, UNIVERSITY OF MINNESOTA Advisory Board (Veregin)

NATIONAL GEODETIC SURVEY (NGS) COORDINATION Data and condition reports (Hemstead)

NATIONAL STATES GEOGRAPHIC INFORMATION COORDINATION COUNCIL (NSGIC) State Rep (Veregin)

NATRF2022 DISCOVERY TEAM Chair (Veregin); Member (Hemstead) PUBLIC LAND SURVEY SYSTEM (PLSS) WORKGROUP Founding members (Hemstead, Veregin)

**STATE AGENCY GEOSPATIAL INFORMATION COMMITTEE (SAGIC)** SCO liaison (Lacy); Address Workgroup (See, Vogel)

WISCONSIN COUNTY SURVEYORS ASSOCIATION (WCSA) SCO liaison (Hemstead)

#### WISCONSIN DEPARTMENT OF ADMINISTRATION (DOA) DIVISION OF INTERGOVERNMENTAL RELATIONS Project partner for statewide parcel project (Hemstead, See, Veregin, Vogel, Wells)

WISCONSIN DEPARTMENT OF TRANSPORTATION (SURVEY & MAPPING UNIT) SCO liaison (Hemstead)

#### WISCONSIN GEOGRAPHIC NAMES COMMITTEE Ex officio member (Veregin)

WISCONSIN LAND INFORMATION COUNCIL (WLIC) Ex officio member (Veregin)

#### WISCONSIN LAND INFORMATION

ASSOCIATION (WLIA) Board of Directors (Lacy); Education Committee Chair (Lacy); Communications Committee (Lacy); Membership/ Outreach Committee (Lacy); Conference Planning Committee (Hemstead, Lacy, Wortley); Legislative Committee (Wortley); Scholarship Committee (Wortley)

#### WISCONSIN LEGISLATIVE TECHNOLOGY SERVICES BUREAU (LTSB)

Statewide parcel data map services (See, Vogel, Wells); Data repository project (See, Lacy, Veregin)

#### WISCONSIN PRESIDENTS' COUNCIL

(Hemstead)

Coordination and meeting facilitation (Lacy); Ex officio member (Veregin)

WISCONSIN SOCIETY OF LAND SURVEYORS (WSLS) Web Site Committee, SCO liaison

## CONFERENCES AND MEETINGS ATTENDED

**COASTAL GEOSPATIAL SUMMIT** Ashland, Sept. 2017

GIS DAY UW-Milwaukee, Nov. 2017

LAND INFORMATION OFFICERS MEETINGS (LION) La Crosse, November 2017; Elkhart Lake, March 2018.

MASTERS OF GIS ADVISORY BOARD MEETING Minneapolis, MN, May 2018

UNMANNED AIRCRAFT SYSTEM AND YOU? UAS Advocacy Network. Waukesha, Jan. 2018.

#### WISCONSIN COUNTY SURVEYORS

**ASSOCIATION (WCSA)** Board Meetings, Neillsville, 2017-18; Annual Membership Meeting, Wisconsin Dells, Jan. 2018

WISCONSIN GEOGRAPHIC NAMES COMMITTEE Annual Meeting, Madison, Jan. 2018

## **UNIVERSITY ACTIVITIES**

UW-MADISON PROFESSIONAL DEVELOPMENT AND RECOGNITION COMMITTEE (Lacy)

UW-MADISON COLLEGE OF LETTERS AND SCIENCE WORKPLACE CLIMATE COMMITTEE (Veregin)

**SCIENCE HALL BUILDING COMMITTEE** (Hemstead)

WISCONSIN LAND INFORMATION ASSOCIATION (WLIA) Fall Regional Meeting, La Crosse, November 2017; Annual Conference, Elkhart Lake, March 2018; Spring Regional Meeting, Delavan, June 2018; Board of Directors Retreat, Green Bay, April 2018

WISCONSIN LAND INFORMATION COUNCIL (WLIC) Elkhart Lake, March 2018; Delavan, May 2018

WISCONSIN PRESIDENTS' COUNCIL Annual Meeting, Madison, Oct. 2017

WISCONSIN SOCIETY OF LAND SURVEYORS (WSLS) Annual Meeting, Wisconsin Dells, Jan. 2018

**COOPERATIVE SOIL SCIENCE WORK PLANNING MEETING** UW-Platteville, March, 2018

GEOGRAPHY DEPT DEVELOPMENT COMMITTEE (Veregin)

**GEOGRAPHY DEPT FINANCE COMMITTEE** (Lacy)

GEOGRAPHY DEPT GEOCOMPUTING COMMITTEE (Lacy)

**GEOGRAPHY DEPT SERVICES COMMITTEE** (Hemstead)

# ANNUAL REPORT 2017-2018





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